

TYPE No.	POSSIBLE SUBSTITUTES			
ZT706	BCY34	2N706	BCY17	
ZT708	2N708	2N2413	BSY19	
ZT709	2N709	2N2369A	2N3227	
ZT1479	D40D4	DT1511	PG5007	
ZT1480	D40D7	ZT95	ZT1482	
ZT1481	D40D4	DT1511	PG5007	
ZT1482	D40D7	ZT95	ZT1480	
ZT1483	D44C5	SDT6011	STC1300	
ZT1484	D44C8	PT665	SDL345	
ZT1485	D44C5	SDT6011	STC1300	
ZT1486	D44C8	PT665	SDL345	
ZT1487	BFX34	2N5262		
ZT1488	DT4111	DT4112	2N1488	
ZT1489	BFX34	2N5262		
ZT1490	DT4121	2N1490	BSV64	
ZT1613	D40D4	DT1511	PG5007	
ZT1700	D40D4	DT1511	PG5007	
ZT1701	D44C4	XB404	XB408	
ZT1702	BCY29	2N2906		
ZT1708	BSX48	2N2369		
ZT1711	D40D8	PG5019	SDT5012	
ZT2015	2N3715	2N2016	2N5882	
ZT2016	2N2016	2N5882		
ZT2102	D40D1	MT1070	PT3503	
ZT2205	BFY26	2N2205	BSY63	
ZT2206	BFY27	2N2206	2S131	
ZT2270	D40D4	BFY15	2N2270	
ZT2368	BSX48	2N2369	2SC857	
ZT2369	BSX48	2N2369	2SC857	
ZT2475	BSX48	2N2369	2SC857	
ZT2476	BSW34	2N2219A	2N2218	
ZT2477	BSW34	2N2219A	2N2218	
ZT2708	BFX62	2N3563		
ZT2857	BF169	2N3013	MT1061	
ZT2876	D42C7	PT2635	PG5044	
ZT2938	BSX48	2N2369	2SC857	
ZT3375	D42C5	PT600	PT601	
ZT3420	BFX34	2N4877		
ZT3421	BFX34	2N4877		
ZT3440	D44R2	MJE344	MJE521	
ZT3441	BDY72	2N3441	2N6233	
ZT3442	BUY12	2N3442	MJ3010	
ZTX107	BC107	AM251	BC127	
ZTX108	BC108	MPS6520	BC168	
ZTX109	BC109	AM253	BC319	
ZTX114	BC169	2N2904	2N5210	
ZTX212	BC347	BD517	2N5086	
ZTX213	BC347	BD517	2N5086	
ZTX213A	BC347	BD517	2N5086	
ZTX213B	BC347	BD517	2N5086	
ZTX214	BC349	2N3906		
ZTX237	BD517	2N5086	2SA565	
ZTX238	BD517	2N5086	2SA565	
ZTX239	BD517	2N5086	2SA565	
ZTX300	BCW10	BC338	BC140	
ZTX301	BCW12	BC327	BCW13	
ZTX302	BCW14	BC337	BCW16	
ZTX303	BCW16	BC337	BCW14	
ZTX304	BCW18	MPSL01	BCW46A	
ZTX310	BCU23	2N706	2N2369	
ZTX311	BSU24	BSY95A	BC337	
ZTX312	BSU25	2N706A	2N706A	
ZTX313	BSU26	2N2369	2N2369	
ZTX314	BSX20	BSU27	2N2369A	
ZTX320	BSW97	2N918	BFX72	
ZTX321	BFX53	2N918		
ZTX325	BFY90	2N2642	2SC280	
ZTX326	BFY90	2N2642	2SC280	
ZTX327	BC307	2N4403	EN2907	
ZTX330	BCW20	2N3707	BC337	

TYPE No.	POSSIBLE SUBSTITUTES			
ZTX331	BCW22	2N929	BC377	
ZTX341	BSU28	MPSL01	BSX21	
ZTX342	BSU29	2N5400	2N1990R	
ZTX350	BC307A	2N3905	2N3904	
ZTX360	BSX73	2N3725	MM3725	
ZTX382	BD517	2N5086	2SA565	
ZTX383	BD517	2N5086	2SA565	
ZTX384	BD517	2N5086	2SA565	
ZTX500	BCW11	BC328	BC160	
ZTX501	BCW13	BC327	ZTX502	
ZTX502	BCW15	BC327	ZTX501	
ZTX503	BCW17	BC327	ZTX502	
ZTX504	BCW19	MPSL51	ZTX504	
ZTX530	BC253	2N6003	MPS6519	
ZTX531	BC253	2N6003	MPS6519	
ZTX541	BSV28	2N4390	ZTX347	
ZTX542	BSV28	2N4390	ZTX347	
2G101	AC163	2N506	2SB459	
2G102	AC163	2N2907	2SB459	
2G103	2N710	ASZ21	2N2273	
2G104	2N710	2N705	ASZ21	
2G106	2N705	AF124	2N990	
2G108	AC163	2N2907	2SB459	
2G110	2G103	ASZ21	2N2273	
2G139	2SA283			
2G210	O628	ASZ15	2N1533	
2G220	2G221	ASZ16	2N1536	
2G221	2G222	ASZ15	2N1533	
2G222	ASZ15	2N1533		
2G223	2G225	AUY29	2N1167	
2G224	2G225	AUY29/5	2N1167	
2G225	2G224	2G225	2N1167	
2G226	2G225	2G227	AUY29/5	
2G227	2G228	2G228	AUY29/5	
2G228	2G229	2G229	AUY29/5	
2G229	2G228	2G228	AUY29/5	
2G230	2G227	2G227	AUY29/5	
2G231	2G228	AUY29/5	2N1167	
2G240	AU105	AL103	2N2147	
2G301	NKT142	ZN1193	2SB227	
2G302	NKT142	ZN1193	2SB227	
2G303	NKT142	ZN1193	2SB227	
2G304	NKT142	ZN1193	2SB227	
2G306	NKT142	ZN1193	2SB227	
2G308	NKT142	ZN1193	2SB227	
2G309	NKT142	ZN1193	2SB227	
2G319	ZN1189	2N1038	2SB89	
2G320	2N1189	2N1038	2SB89	
2G321	2N1189	2N1038	2SB89	
2G322	2N1189	2N1038	2SB89	
2G323	2N1189	2N1038	2SB829	
2G324	2N1189	2N1038	2SB89	
2G344	NKT142	2N1193	2SB227	
2G345	NKT142	2N1193	2SB227	
2G371	AC117	2N1337	2SB770	
2G374	AC117	2N1337	2SB770	
2G376	AC150	2N506	2SB459	
2G377	AC150	2N506	2SB459	
2G381	AC153	AC117	2SB415	
2G382	AC117	2N467	AC153	
2G383	2N1189	2N1193	2SB89	
2G384	2N1189	2N1193	2SB89	
2G385	2N1189	2N1193	2SB89	
2G386	2N1189	2N1193	2SB89	
2G387	2N1189	2N1193	2SB89	
2G395	OC70	2N1305		
2G396	OC70	2N1305		

TYPE No.	POSSIBLE SUBSTITUTES		
2G397	OC70	2N1191	NKT225
2G524	ASY48	NKT237	2N1176
2G525	ASY48	NKT237	2N1176
2G526	ASY48	NKT237	2N1176
2G527	ASY48	NKT237	2N1176
2G577	ASY48	NKT237	2N1176
2G1024	ASY48	NKT237	2N1176
2G1025	ASY48	NKT237	2N1176
2G1026	ASY48	NKT237	2N1176
2G1127	ASY48	NKT237	2N1176
2N27	ASY74	2N211	2SA255
2N28	ASY74	2N211	2SA255
2N29	ASY74	2N211	2SA255
2N34	AC165	OC304	2SB415
2N34A	AC126	2N2429	2SB101
2N35	AC127	2N2430	2SD111
2N35A	AC127	2N2430	2SD11
2N36	2N1191	AC126	ASB101
2N37	2N1191	AC126	2SB220
2N38	2N1191	AC126	2SB220
2N38A	AC151	OC303	2SB264
2N39	AC151	OC303	2SB264
2N40	AC125	2N2429	2SB364
2N41	AC125	2N2429	2SB364
2N43	AC152	2N525	2SB225
2N43A	2N525	AC152	2SB225
2N44	2N524	TS14	2SB89
2N44A	AC117	2N34	2SB33
2N45	2N524	AC151	2SB224
2N45A	OC72	2N524	
2N46	AC152	AC165	2SB415
2N47	AC151/4	AC165	2SB415
2N48	AC151	AC165	2N506
2N49	AC151/4	AC126	2N506
2N51	AC151	AC126	2N506
2N54	ACY17	AC165	2SB225
2N55	AC128	AC165	2SB225
2N56	AC128	AC165	2N1305
2N57	AD152	AD262	2SB367
2N59	2N1193	AC128	2SB222
2N59A	2N1193	AC128	2N185
2N59B	2N1193	AC128	2N2431
2N59C	2N1193	AC128	2SB32
2N60	2N1193	AC128	2N2431
2N60A	2N1193	AC126	2SB222
2N60B	2N1193	AC126	2SA219
2N60C	2N1193	2N6164	2N59C
2N61	2N1192	AC128	2SB89
2N61A	2N1191	2N60	AC126
2N61B	2N1191	AC125	2SB220
2N61C	2N1191	AC125	2SB220
2N62	AC125	OC304	2N1191
2N63	2N1191	AC121	2SB220
2N64	2N1191	AC126	2SB75
2N65	2N1191	AC126	2SB77
2N66	AD162	2N2835	2SB367
2N67	AD162	2N2835	2SB367
2N68	AD148	AD148	2SB240
2N68/13	T1156L	2SB83	
2N71	AD162	2N2835	2SB367
2N74	AC165	2N4077	AD161
2N75	AC165	2N4077	AD161
2N76	2N319	AC126	2SB220
2N77	2N1191	OC58	2SB101
2N78	ASY70	2SC90	2N445
2N78A	2N93	ASY70	2N1304
2N78B	ASY70	2N493	
2N79	AC151	AC126	2N2429
2N80	AC163	AC125	AC122
2N81	AC163	AC125	AC122

TYPE No.	POSSIBLE SUBSTITUTES		
2N82	AC151	AC125	AC122
2N83	AD132	AUY28	2SB424
2N83A	AD132	AUY28	2SB424
2N84	ASZ16	AUZ11	2SB425
2N84A	ASZ16	AUZ11	2SB425
2N85	AC152	AC131	2N1924
2N86	AC153	AC128	2N2431
2N87	MA1703	2N4106	2SB415
2N93	AC151	AC126	2SB459
2N94	ASY26	2N1304	2SC219
2N94A	ASY26	2N377	2SC90
2N95	AC176	2N2430	AC181
2N96	AC151	AC125	MA1703
2N97	ASY28	2N1302	2SD75
2N97A	ASY74	2N211	2N1302
2N98	ASY26	2N1304	2SA155
2N98A	ASY74	2N211	2N1302
2N99	ASY26	2N1306	ASY73
2N100	ASY73	ASY29	2N1304
2N101	AD262	2N2835	2SB240
2N101/13	2SB73		
2N102/13			
2N103	ASY28	2N650	2SD75
2N104	2N650	AC126	2S32
2N105	OC58	2N2429	2SB220
2N106	2N1191	AC126	2SB75
2N107	2N464	AC126	2SB170
2N108	AC126	2N2431	2SB170
2N109	2N1191	AC128	2B37
2N111	AF85	2N271	2SA206
2N111A	AF185	2N218	2SA12
2N112	AF185	2N450	2SA206
2N112A	AF136	AF126	2SA443
2N113	AF85	ASY27	2N1305
2N114	AF185	2N140	2AS17
2N115	AD166	2N3614	2N2869
2N116	OC622	2N175	2SB39
2N117	OC632	2N332	BC107
2N118	BD130	2N118A	BDX10
2N118A	BD130	2N3055	BDX10
2N119	BD130	2N3055	2N118
2N120	BD130	2N3055	2N118
2N122	BFY56	2N3712	
2N123	AF127	2N426	MJ23D
2N124	ASY26	2N1302	2N445
2N125	ASY127	2N585	2SC90
2N126	ASY27	2N439	2SC90
2N128	AF125	2N604	2SA80
2N129	AF165	2N2429	2SB415
2N130	2N1191	AC162	2SB224
2N130A	2N650	AC162	2SB224
2N131	2N1192	AC122	2SB103
2N131A	2N651	AC153	2SB103
2N132	2N1191	AC151	2SB103
2N132A	2N651	AC128	2SB32
2N133	2N1192	AC151	2SB73
2N133A	2N651	OC57	2SB73
2N135	AF185	2SA12	2N139
2N136	AF127	2SA12	2N483
2N137	AF185	2N484	2SA15
2N138	AC153	2N2429	2N4106
2N138A	AC165	2N2429	2SB415
2N138B	AC165	2N2429	2SB415
2N139	AF185	2N169	2S36
2N140	AF185	2N486	2SA35
2N141	AD152	2N1924	2SB364
2N141/13	2SB80	AD162	2N2835
2N142/13	LT5202	AD161	2N4077
2N143	AD152	2N1924	2SB364
2N143/13	2SB80		

TYPE No. POSSIBLE SUBSTITUTES				TYPE No. POSSIBLE SUBSTITUTES			
2N144/13	2SB80	AD161	2N4077	2N206	AC126	2N2429	2S39
2N145	ASY73	2N1302	2SA206	2N207	2N1191	AC122	2SB221
2N146	AUY19	2N444	MJ23D	2N207A	2N1193	AC151	2SB221
2N147	2N176	AD148	2SB107	2N207B	2N1190	AC163	2SB32
2N148	ASY74	2N211	2SA255	2N211	ASY28	2N1302	2SA31
2N149	ASY74	2N211	2SA255	2N212	ASY28	2N1302	2SA30
2N150	ASY74	2N211	2SA255	2N213	AC127	2N1302	2SA30
2N155	AD133	AD138	2N176	2N213A	AC127	2N2430	AC176
2N157	AD133	AD138	2N1531	2N214	AC127	2N1192	2SB37
2N157A	AD149	2N3615	2SB425	2N214A	2N214	AC176	2N2430
2N158	2N176	AD148	2SB107	2N215	2N1189	AC126	MJ15
2N156	2N176	AD149	2SB107	2N216	AC127	2N302	2SC89
2N158	2N2139	AD166	2SB229	2N217	2N1192	AC128	MJ17D
2N158A	2N2141	ASZ16	2SB230	2N218	AF185	2N319	MJ22D
2N160	2B2217	2N160A	BC107	2N219	AF185	2N494	2N2419
2N160A	2N2217	2N161A	BC107	2N220	2N1189	AC126	2N2429
2N161	2N2217	2N161A	BC107	2N223	2N1193	AC128	2SB222
2N161A	2N2217	2N163A	A157	2N224	2N1192	AC153	2SB222
2N162	2N2217	2N163A	A157	2N225	2N1193	AC128	2SB89
2N162A	2N2221	2N163A	BC107	2N226	2N1192	AC128	2SB226
2N163	2N2221	2N163A	BC107	2N227	2N1192	AC128	2SB226
2N163A	2N2221	2N162A	BC107	2N228	AC127	2N4230	2SB37
2N164	2N165			2N229	AC127	2N2430	2SB32
2N164A	2N446	ASY29	2N1304	2N230	AD149	2N325	2SB107
2N165	ASY29	2N1211	2SA255	2N231	AF126	2N218	2SA84
2N165A	2N165			2N232	AF126	AF137	2N139
2N166	ASY26	2N1304	2N94A	2N233	AC126	2N1306	2SC90
2N167	ASY29	2N1090	2SC90	2N233A	AC130	ASY29	2N1304
2N167A	2N94A	ASY29	2N1304	2N234	AD149	2N554	2SB107
2N168	ASY26	2N445	MJ23D	2N234A	2N555	AD149	2SB107
2N168A	ASY75	2N446	2N1304	2N235	AD149	2N3611	ASZ16
2N169	AC127	2N1308	2SA36	2N235A	AD149	2N2836	2SB83
2N169A	ASY75	2N377	2SA36	2N235B	AD149	2N2836	2N3613
2N170	ASY27	2N1308	2SA206	2N236	AD149	2SB250	ASZ16
2N172	ASY27	2N1308	2SA206	2N236A	AD131	2N301	2SB83
2N173	ADZ11	2N677B	AUY21	2N236B	AD131	2N1078	2SB107A
2N174	AUY21	OC35	2N1100	2N237	AD131	2N220	MJ51
2N174A	ADZ12	TRO3	HS702	2N238	AC126	2SB101	2N1192
2N175	2N1192	AC163	2N632	2N239	AC151	AC125	OC304
				2N240	AC163	2N404	2SB32
2N176	AD149	2N2836	2SB107	2N241	2N321	AC163	2SB221
2N178	AD166	2N301	2SB107	2N241A	2N321	AC128	2SB226
2N180	2N1192	AC128	2S3a	2N242	AC128	2N4106	2SB221
2N181	2N1192	ASY29	2N1304	2N243	BSY45	BFY10	2N2297
2N182	AC182	2N2431	2SB67	2N244	BFY10	BFY50	2N2297
2N183	ASY72	2N1302	2N439	2N246	BSX46	2N2193	2SC708
2N184	ASY27	2N1306	2N404	2N247	AF135	2N991	2SA433
2N185	2N650	AC128	2N650	2N247/33	AF124	2N3323	2SA433
2N186	2N1191	AC128	2SB77	2N249	AC128	2N270	2SB226
2N186A	2N1191	AC128	OC74	2N250	2N3611	AD149	2N2836
2N187	2N1191	AC128	2SB220	2N250A	2N3611	AD149	
2N187A	2N1191	AS37	2S37	2N251	2N1530	OC30	2SB201
2N188	2N1191	AC128	ASB220	2N251A	2N3616	ASZ16	2N3616
2N188A	2N1191	AC128	2SB222	2N252	AF185	2N2188	ST37D
2N189	2N1191	AC126	2SB222	2N253	ASY73	2N1302	2SA31
2N189A	2N1191			2N254	2N1302	2N253	ASY29
2N190	2N1191	AC126	2SB219	2N255	AD149	2N2836	2SB107
2N191	2N1192	AC128	2SB220	2N255A	AD149	2N2836	ASZ16
2N192	2N1193	AC128	2SB221	2N256	2N555	AD149	2SB107
2N193	ASY28	2N1302	2NSA31	2N256A	2N178	AD149	2SB107
2N194	ASY73	2N1302	2SA31	2N257	AD149	2N2836	2SB107A
2N194A	ASY73	ASY29	2N1304	2N257B	NKT404	2N257W	ASZ16
2N195	AC165	2N406	2SB415	2N257G	NKT404	2N257W	ASZ16
2N196	AC152	AC151	2N2429	2N257W	AD149	NKT404	2N836
2N197	AC152	AC151	2N2429	2N260	BC350	2N3703	2SA565
2N198	AC152	AC151	2N2429	2N261	BC350	2N3703	2SA565
2N199	AC152	AC151	2N2429	2N262	BC350	2N3703	2SA565
2N200	AC151	AC126	2SB459	2N263	2N2097	BCW76	BC107
2N204	AC151	AC126	2SB459	2N264	2N2096	2N337	BC107
2N205	AC151	AC126	2SB459	2N265	2N1376	AC139	2SC221

TYPE No. POSSIBLE SUBSTITUTES				TYPE No. POSSIBLE SUBSTITUTES			
2N266	AC153	AC128	2N381	2N327B	2N2906	2N2907	2N1475
2N267	AF125	AF135	2N247	2N328	BCY21	2N2906	2N2907
2N268	2N1530	ASZ15	2SB249	2N328A		OC201	BCY32
2N268A	ASZ15	2N1536	2SB228	2N328B	2N328A	OC201	2N4036
2N269	ASZ15	2N1308	2SA18	2N329	BCY21	2N2906	2N2907
2N270	2N1193	AC128	2SB89	2N329A	BCY29	BCY32	BCY32
2N271/A	AF185	2N404	2SA15	2N329B	2N329A	BFS95	2N4036
2N272	2N298A	AC126	2SB33	2N330	BCY21	2N2906	2N2907
2N273	2N298A	AC128	2SB33	2N330A	2N2906	BCY32	2N1475
2N274	ADZ11	OC170	2SA85	2N331	AC117	2N4106	2SB225
2N276	AF126	AF137	2N274	2N332	2N2221	BC140	2N2102
2N277	ADZ11	2N677A	HS702	2N333	2N2221	BSY44	2N2102
2N278	ADZ11	2N1301	2N677	2N333A	2N2218	BFY50	2N2297
2N279	2N650	AC128	2SB37	2N334	2N2221	BSY11	2N2102
2N280	2N650	AC126	2SB33	2N334A	2N2218	BFY50	2N2297
2N281	2N651	AC128	2SB221	2N334B	25C708	2N2193	
2N282	2xAD153	2xAC128	2x2N281	2N335	2N2221	BSY44	2N2102
2N283	2N650	AC151	2SB225	2N335A	2N2218	BFY50	2N2297
2N284	AC151	2N464	2SB219	2N335B	25C708	2N2193	
2N284A	NKT227	OC77	2SB67	2N336	2N2221	BFY11	2N2102
2N285	2N285A	AD149	2SB83	2N336A	2N2218	BSY44	BSY11
2N285A	AD149	2N2836	2SB83	2N337	2N2221	BSY11	2N2102
2N285B	AD149	2N2836	ASZ16	2N337A	2N2218	BFY50	2N2297
2N290	AD104	2N1146A	2N1146B	2N338	2N2221	BFY11	2N2102
2N291	2N1191	AC128	2SA219	2N338A	2N2218	BSY11	2N2297
2N292	ASY74	2N1302	2SA31	2N339	BSY10	2N2102	BFY50
2N292A	2N164A	2N292	ASY29	2N340	2N2102	BSW66	2N1893
2N293	2N1304	2N216	HJ23D	2N341	BF178	BF109	2N2102
2N296	2N1531	AD149	2SB107	2N341A	BSY45	2N1893	2SC708
2N297	2N297A	OC30	2SB252				
2N297A	AS215	2N2188	2N457	2N342	2N1893	BSY45	
2N299	AF124	2N623	2SA116	2N342A	2N342	BSW66	2N1893
2N300	AF178	2N2188	2SA116	2N342B	BSY45	2N1893	2SC708
2N301	AD149	2N3611	2SB131	2N343	BCY59	2N2102	BSY10
2N301A	ASZ15	2N3612	2SB42	2N343A	BXY45	2N2193	2SC708
				2N343B	BXY45	2N2193	2SC708
2N302	AC128	2N4106	2SB34	2N344	AC126	2N274	HJ74
2N303	AC128	2N2431	2SB34	2N345	AC126	2N274	2N404
2N306	ASY28	2SB32	AC125	2N346	AF114	2N404	2SA235
2N307	AC162	2N301	2SB240	2N347	BXY45	2N1893	2SC708
2N307A	AD149	2N353	2SB41	2N348	BSY45	2N1893	2SC708
				2N349	BSY45	2N1893	2SC708
2N307B	AUZ11	2N1536	2SB425				
2N308	AF185	2N373	2SA155	2N350	AD149	2N2836	2SB248
2N309	AF185	2N247	2SA156	2N350A	AD149	2N2836	2N301
2N310	AF185	2SA156	2N1122	2N351	AD149	2N2836	2SB41
2N311	AC153	2N404	2SA156	2N351A	AD149	2N2836	2N242
2N312	AC153	2N4106	2SD11				
2N313	ASY74	2N211	2SA255	2N352	AD131	AD149	2N1536
2N314	ASY74	2N211	2SA255	2N353	AD150	AD149	2SB41
2N315	ASY27	OC47	2SA208	2N354	BC350	2N3703	2SA565
2N315A	2N404	2N426	ASY27	2N355	BC350	2N3703	2SA565
				2N356	ASY73	OC139	2N1302
2N315B	ASY32	2N36	2SB101	2N356A	ASY29	ASY28	2N1304
2N316	ASY27	2N579	2SA209	2N357	ASY75	OC140	2N1302
2N316A	2N427	2N404	ASY27	2N357A	ASY29	ASY28	2N1304
2N317	ASY27	2N592	2SA210	2N358	ASY28	OC141	2N427
2N317A	2N1313	2N428	ASY27	2N358A	ASY29	ASY28	2N1304
2N319	AC128	2N2431	2SB219				
2N320	AC126	2N2429	2SB220	2N359	AC153	2N652	2N369
2N321	AC126	2N319	2SB226	2N360	2N1192	AC153	2N3639
2N322	AC128	2N2431	2SB221	2N361	2N1191	AC131	2SB226
2N323	AC128	2N2431	2SB222	2N362	2N1192	AC126	2SB227
				2N363	AC127	2N2430	ACY17
2N324	AC128	2N2431	2SB222	2N364	ASY29	ASY28	2N1304
2N325	2N3611	AD149	2SB107	2N365	AC127	2N2430	2T66
2N326	2SB41			2N366	AC127	2N2430	ASY29
2N327	BCY21	2N2906	2N2907	2N367	2N1191	AC126	2SB101
2N327A	2N2906	OC200	BCY32	2N368	2N1191	AC126	2SB101

TYPE No.	POSSIBLE SUBSTITUTES		
2N369	2N1191	AC127	2SB75
2N370	AF133	2N624	2SA240
2N370/33	AF124	2N3323	2SA433
2N371	AF127	AF137	2N3324
2N372	AF127	AF137	2N3324
2N373	AF127	AF137	2N1638
2N374	AF127	AF137	2N1639
2N375	AC153	2N4106	2SB249
2N376	AD149	2N336B	2SB107A
2N376A	2N242	2N301B	AS216
2N377	ASY75	2N357	2SD11
2N377A	ASY74	2N1304	2SA255
2N378	AC153	2N561	2SB246
2N379	AD211	2N379	2SB228
2N380	AD149	OC28	2SB84
2N381	AC153	2N270	2SB219
2N382	AC153	2N382	2SB220
2N383	AC153	2N270	2SB221
2N384	2N3325	AF137	2SA234
2N385	OC141	2SD11	2N357
2N385A	ASY74	2N1304	2SA255
2N386	AD131	AD149	2N1531
2N387	AUY28	2N1533	2SB242
2N388	AC127	2N375	2N1308
2N388A	BUY13	ASY29	2N1304
2N389	2N5068	BDY39	2N3055
2N389/1	BDY20	2N3055	2N3055
2N389A	2N5068	BDY20	2N3055
2N391	AC153	2N651A	2SB84
2N392	2N1550	AS216	2SB228
2N393	2N967	OC170	ASZ20
2N394	OC80	2N394	2SA211
2N394A	ASY32	2N1305	2SB101
2N395	AF126	2N1308	2SA205
2N396	ASY26	2N404	2SA206
2N396A	2N1356	ASY27	2N1305
2N397	ASY26	OC47	2N1307
2N398	ASY77	BSV68	2N3497
2N398A	2N2043	2SB68	BSV68
2N398B	2N2043	BSV68	2N3497
2N399	2N351A	AD149	2SB107A
2N400	2N350A	AD149	2SB107A
2N401	2N3611	AD149	2SB107A
2N402	2N1191	AC153	2SB219
2N403	2N1191	AC153	2SB220
2N404	ASY27	2N322	2SA212
2N404A	ASY32	2N1305	2SB101
2N405	2N322	AC126	2SB32
2N406	2N322	AC126	2S44
2N407	2N324	AC128	2SB75
2N408	2N324	AC128	2N324
2N409	AF185	2N482	2S31
2N410	AF185	2N483	HJ56
2N411	AF185	2N485	2S30
2N412	AF185	2N416	2SA15
2N413	AF126	2N413	2SA208
2N413A	ASY26	OC45	2N218
2N414	AF126	2N218	2SA209
2N414A	AF126	OC45	2N218
2N414B	2N1307	ASY27	2N1305
2N414C	ASY32	2N1305	2SB101
2N415	AF126	2N274	2SA210
2N415A	OC45	2N374	2SA210
2N416	AF126	2N247	2SA210
2N417	AF126	2N247	2SA210

TYPE No.	POSSIBLE SUBSTITUTES		
2N418	2N1537	2N1100	2SB230
2N419	AC153	2N380	2SB248A
2N420	2N1535	ASZ18	2SB229
2N420A	2N1537	AS218	2N1533
2N422	2N651	AC126	2SB220
2N424	2N4069	BLY17	2N5006
2N424/1	BDX11	2N3442	
2N424A	2N3446	BDY20	2N3055
2N425	ASY126	2N1305	2SA212
2N426	AF126	2N1305	2SA208
2N427	AF127	2N579	2SA206
2N428	ASY27	2N1309	2SA208
2N432	BXY45	2N2193	2SC708
2N433	BXY45	2N2193	2SC708
2N438	OC612	ASY29	2N1304
2N438A	2N1302	2N1304	ASY29
2N439	OC612	ASY29	2N1304
2N439A	2N357	2N1306	ASY29
2N440	OC613	ASY29	2N1304
2N440A	2N358	2N1306	ASY29
2N441	ADZ11	2SB331	2N1100
2N441+	ADZ11	2N1031	2N677
2N442	ADZ11	ADZ12	2N1100
2N442+	ADZ11	2N1031	2N677
2N443	ADZ12	2N677B	2N1031A
2N444	2N1012	2N1059	2SD11
2N444A	2N377	AC176	2N2430
2N445	2N356	ASY29	2N1304
2N445A	2N377	ASY29	2N1304
2N446	2N357	ASY29	2N1304
2N446A	2N385	ASY29	2N1304
2N447	2N358	ASY29	2N1304
2N447A	2N388	ASY29	2N1305
2N447B	ASY74	2N1304	2SA255
2N448	ASY29	2N1304	
2N449	ASY74	2N1304	2SA255
2N450	AF127	2N1308	2SA206
2N451	BDX10	2N3055	2N3713
2N452	BDX10	2N3055	2N3713
2N453	BDX10	2N3055	2N3713
2N454	BDX10	2N3055	2N3713
2N456	2N456A	ASZ17	2SB84
2N456A	OC35	NKT404	ASZ16
2N456B	2N1553	ASZ16	2N1536
2N457	AD131	ASZ16	2N1536
2N457A	OC29	NKT402	CDT1311
2N457B	2N1553	ASZ16	2N1536
2N458	AUY28	2N561	2SB229
2N458A	CDT1312	ASZ16	2N1536
2N458B	2N1555	ASZ16	2N1536
2N459	2N378	2N459	ASZ15
2N459A	ASZ15	2N1533	AUY34
2N460	AC128	2N2431	2SB224
2N461	AC128	2N331	2SB220
2N462	AC153	AC128	OC308
2N463	2N1551	AD156	2SB107A
2N464	AC128	2N2431	2SB219
2N465	AC128	2N2431	2SB220
2N466	AC128	2N2431	2SB220
2N467	AC128	2N585	2SB89
2N468	AD161	2N4077	
2N470	2N2221	BFY50	2N2297
2N471	2N2221	BFY10	2N706
2N471A	BXY45	2N2193	2SC708
2N472	2N2221	BFY49	2N706

TYPE No. POSSIBLE SUBSTITUTES				TYPE No. POSSIBLE SUBSTITUTES			
2N472A	2N2221	BFY10	2N2297	2N523A	ASY32	2N1305	
2N473	2N2221	BFY11	2N2102	2N524	AC152	2N1305	2SB224
2N474	2N2221	BFY11	2N706	2N524A	ASY48	2N1176	NKT237
2N474A	2N2221	BFY69	2N706	2N525	AC152	2N1373	2SB225
2N475	2N2221	BFY11	2N2102	2N525A	ASY48	2N1176	NKT237
2N475A	2N2221	BFY50	2N2297	2N526	ASY80	2N1307	2SB226
2N476	2N2221	BCY65	2N706	2N527	AC152	2N1307	2SB227
2N477	2N2221	BCY11	2N2102	2N528	ASY48	2N1176	NKT237
2N478	2N2221	BCY65	2N2102	2N529	2N1303	ASZ72	2N1305
2N479	2N2221	BCY11	2N706	2N530	AC122	2N1303	2SB226A
2N479A	2N2221	BFY50	2N2297	2N531	2N1305	ASY27	2N1305
2N480	2N2221	BCY65	2N2102	2N532	2N1305	ASY27	2N1305
2N480A	2N2221	BFY50	2N2297	2N533	2N1305	ASY27	2N1305
2N481	AF185	2N413	2SA12	2N534	2N1189	2N525	AC125
2N482	AF126	2N373	2N2189	2N535	2N1192	2SB264	AC153
2N483	AFY15	2N2189	2SA12	2N535A	2N1192	AC126	2N2429
2N484	AF126	2N2190	2SA12	2N536	2N1193	AF181	2SB184
2N485	AF126	2N374	2SA15	2N537	AF239	AF254	2SA240
2N486	AF185	2SA15	ASY27	2N538	2N2140	ASZ18	2SB228
2N495	BCY28	2N354	2N2945	2N538A	2N2140	2N268A	2SB228
2N496	BC350	2N3703		2N539	2N2145	ADY26	2SB228
2N497	2N4238	2N3498	2N2102	2N539A	2N2145	2N637B	2SB228
2N497A	2N4238	BFY50	2N2297	2N540	2N1551	ASZ218	2SB228
2N498	2N4239	2N3498	BSW66	2N540A	2N1551	2N1136A	2SB228
2N498A	2N5681	BSW66	2N1893	2N541	2N2221	BCY59	BSY11
2N499	AF106	2N3328	2N371	2N542	2N2221	BFY50	2N2297
2N499A	2N3323	AF124	2N990	2N542A	2N2221	BFY50	2N2297
2N500	2N3323	2N2189	AF124	2N543	2N2221	BFY50	2N2297
2N501	AF106	2N960	2N2189	2N543A	2N2221	AF137	AF196
2N501A	2N960	AF124	2N990	2N544	AF124	2N990	
2N502	ASZ21	2N3283	2N2189	2N544/33	AF124	2N990	
2N502A	2N3284	AF124	2N990	2N545	2N4238	BSW66	2N1893
2N502B	AF124	2N990		2N546	2N4237	BFY50	2N2297
2N503	2N3284	ASZ21	2N2189	2N547	2N4238	2N3766	BSW66
2N504	2N3323	AF184	2SA235	2N548	2N4237	MJ3101	2N4898
2N505	ASY32	2N1305		2N549	2N4238	2N1893	2N2243A
2N506	AC151	AC122	2SB77	2N550	2N4237	2N1893	2N2243A
2N507	AC127	2N2430	AC176	2N551	2N1893	2N2243A	BSW66
2N508	AC126	2N2429	2SB77	2N552	2N1893	2N2243A	BFY50
2N508A	AC126	2N2429	2N1189	2N553	ASZ15	2N2144	2SB228
2N509	ASY48	2N1176	NKT237	2N554	TI301	2N301	AD149
2N511	2N1554	ADY26		2N555	AD149	2N257	2SB83
2N511A	2N1555	2N443		2N556	ASY75	2N1551	2N1302
2N511B	2N1556	2N174		2N557	ASY75	2N1304	2N556
2N512	2N1558	2N456A		2N558	ASY75	2N1306	ASY29
2N512A	2N1559			2N559	AF106	2N3323	2SA230
2N512B	2N1560	2N1099	2N1100	2N560	BFY44	2N3110	2N2218A
2N513	2N1163	2N456A		2N561	AD131	2N618	2SB249
2N513A	2N1165	CTP-1544		2N563	2N650	AC128	2SB219
2N513B	2N1167	CTP-1545		2N564	2N650	AC128	2SB224
2N514	2N1163	ADY26	2N1100	2N565	2N650	AC128	2SB101
2N514A	2N1165	CTP-1544		2N566	2N651	AC128	2N525
2N514B	2N1167	CTP-1545		2N567	2N651	AC128	2SB103
2N515	ASY26	2N1304	2N445	2N568	2N651	AC128	2SB103
2N516	ASY26	2N1304	2N445	2N569	2N1193	AC128	2SB103
2N517	ASY26	2N1306	2N445	2N570	2N1192	AC128	2SB77
2N518	2N404	2SA212	2N427	2N571	2N1193	AC128	2SB77
2N519	AC153	2N404	2SA208	2N572	2N1193	AC128	2SB77
2N519A	2N413	ACY17	2N1176	2N573	AC126	AC151	2SB459
2N520	ASY26	2N404	2SA208	2N574	2N1550	ADZ12	2N456A
2N520A	2N426	2N414	ASY27	2N575A	2N1551	OC28	2N174
2N521	2N579	2N1377	ASY27	2N575	2N1554	ADY36	2N1099
2N521A	2N416	2N427	2N1305	2N575A	2N1555	OC29	2N174
2N522	2N522A	2N1309	2SA210	2N522	2N522A	2N1309	2SA210
2N523	2N1305	2N1377	2SA210	2N522A	2N417	2N428	ASY27
				2N576A	ASY29	2N1304	

TYPE No.	POSSIBLE SUBSTITUTES		
2N578	2N404	2SA208	ASY27
2N579	AF127	2N404	2SA209
2N580	2N1307	2SA210	2N1309
2N581	2N1313	2N581	2SA211
2N582	2N1313	2N581	2SA217
2N583	AFY12	NKT125	2SA41
2N584	ASY32	2N36	2SB101
2N585	AC117	NKT126	2SB225
2N529	2N1303	ASY27	2N1305
2N587	2N385	2ST11	AC176
2N588	2N3324	ASZ21	2N3324
2N588A	AF124	2N990	
2N589	2N1532	ASZ21	2SB83
2N591	2N1192	AC126	2SB100
2N592	AD156	AD236	2SB368
2N593	AC156	AD236	2SB368
2N594	2N1008	ASY29	2N1304
2N595	ASY29	2N1302	
2N596	ASY29	2N1302	
2N597	2N3427	AC153	2N1305
2N598	2N3427	2N1997	2SA209
2N599	2N3428	2N1997	2SA210
2N600	2N3427	2N1997	2SA232
2N601	2N3428	2N1997	2SA231
2N602	AC152	2N643	2SB65
2N602A	AF124	2N990	
2N603	AC152	2N644	2SB65
2N603A	AF124	2N990	
2N604	AC152	2N2635	2SB65
2N605	AC156	AD236	2SB368
2N606	AC156	AD236	2SB368
2N607	AC156	AD236	2SB368
2N608	AC156	AD236	2SB368
2N609	2N1193	AC128	2SB89
2N610	2N1193	AC128	2SB222
2N611	2N1192	AC128	2SB222
2N612	2N1191	AC152	2SB224
2N613	2N1191	AC128	2SB224
2N614	AF185	2N373	2SA12
2N615	AF185	2N414	2SA12
2N616	AF185	2N416	2SA12
2N617	NKT142	2N1193	AC163
2N618	AD131	2N638B	2SB249
2N619	BC1350	2N3703	
2N620	2N2222A	BFV11	BC107
2N621	2N2222A	BC107	A157
2N622	2N2222A	BFY50	2N2297
2N623	AF124	2N645	2SA116
2N624	AC153	2N188	2SA234
2N625	AD161	2N4077	
2N627	2N441	2N1031	ASZ16
2N628	2N561	T13027	2N1536
2N629	ADZ12	2N561	T13027
2N630	2N1014	T13027	ASZ15
2N631	2N1194	AC128	2SB33
2N632	2N1193	AC128	2SB37
2N633	2N1192	AC128	2SB37
2N634	AF124	2N990	
2N634A	2N1304	2N1306	ASY29
2N635	2N1091	2N1304	ASY29
2N635A	ASY28	2N1302	2N1304
2N636	2N1091	2N1304	ASY29
2N636A	ASY28	2N1302	2N1304
2N637	MP277	AD131	2SB248A
2N637A	MP278	2N1537	2SB228

TYPE No.	POSSIBLE SUBSTITUTES		
2N637B	MP279	2N1538	2SB229
2N638	MP1338	AC153	2SB248A
2N638A	MP1338A	2N1532	2SB228
2N638B	MP1338B	2N561	2SB229
2N639	MP259	2N1530	2SB83
2N639A	MP260	OC28	2SB228
2N639B	MP261	OC28	2SB229
2N640	AF185	2SA114	2N642
2N641	AF185	2SA114	AF125
2N642	AF185	2SA114	AF136
2N643	2N2955	2N1309	2N2635
2N644	2N2955	2N1309	2N382
2N645	2N2955	2N1309	2N2635
2N646	AC152	2N2430	AC128
2N647	AC127	2N2430	2SD77
2N649	AC127	2N2430	2SD77
2N650	AC153	2N1997	2SB247
2N650A	ASY48	2N1176	NKT237
2N651	AC153	2N461	2SB247
2N651A	AC117	2N1997	2SB247
2N652	AC153	2N1997	2SB222
2N653	2N1997	2SB89	2N382
2N654	2N1997	2N383	2SB89
2N655	2N1997	2SB89	ACY17
2N656	2N4238	BSX45	2N4331
2N656A	2N4238	BFY50	2N2297
2N657	2N5681	2N3498	2N4239
2N657A	2N5681	BSW66	2N1893
2N658	AC153	2N2000	2SA208
2N659	AC153	2N578	2SA209
2N660	AC153	2N2000	2SA210
2N661	AD162	2N643	2SA210
2N662	AC153	2N2000	2SA209
2N663	2N2143	ASZ16	2N1536
2N665	ADY26	2N639B	2SB228
2N669	2N3428	2N242	2SB83
2N670	2N3428	AC117	2N1038
2N671	2N3428	2N1038	2SB80
2N672	2N3428	2N1038	2SB80
2N673	2N3428	2N1038	2SB80
2N674	2N3428	2N1038	2SB228
2N675	2N3428	2N3428	2SB80
2N677	MP439	2N1553	2N456A
2N677A	MP439A	2N1554	2N441
2N677B	MP439B	2N1555	2N174
2N677C	MP439C	2N1556	2N174
2N678	MP327	AD133	2N456A
2N678A	MP328	2N1558	2N1146A
2N678B	MP329	2N1559	2N173
2N678C	MP330	2N1560	2N1099
2N679	BFY56	2N1304	2N385
2N680	2N1191	AC153	2SD11
2N694	AF124	2N1990	
2N695	ASZ21	2N2635	AF106
2N696	ZT696	2N1711	2N696
2N696A	BXY45	2N2193	2SL708
2N697	ZT697	2N1711	2N697
2N697A	2N2218	O40D4	BFY50
2N698	2N3498	BFY11	2N1711
2N699	2N1893	BSW67	2N2243A
2N699A	2N3498	BSW66	2N1893
2N699B	2N3498	BSW66	2N1893
2N700	AF139	2N2415	2N5043
2N700A	AF239	AF254	2SA240
2N702	ZT708	BSY38	BSY26

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2N703	ZT708	BSY39	BSY27
2N705	AFY11	AFY19	2N964
2N705A	2N964	AF106	
2N706	ZT706	BSY38	BSY26
2N706A	ZT706A	BSY38	2N706
2N706B	EN706	BSX20	2N2369
2N706C	2N835	BSX20	2N2369
2N707	BSX26	EN3014	2N2483
2N707A	2N2483	BSW64	2N2222A
2N708	ZT708	2N753	EN914
2N708A	2N834	BSW64	2N2222A
2N709	ZT709	BSY18	2N2369A
2N709A	BSX27	BSX20	2N2369
2N710	2N964	ASZ21	2N838
2N711	AFY11	ASZ21	2N964
2N711A	ASZ21	ASY80	2N527
2N711B	ASZ21	ASY80	2N527
2N715	2N2221	ZT42	BFY10
2N716	2N2221	2N4875	BSW46
2N717	2N2221	ZT1613	2N1613
2N717A	BSX73	2N731	
2N718	BFY11	BFY26	2N1711
2N718A	ZY1613	2N1711	BFX69
2N719	2N3498	2N1893	2N2222
2N719A	2N3498	2N1893	2N3700
2N720	2N1893	2N2222	BSX47
2N720A	2N1893	2N3498	BSX47
2N721	BSX36	EN722	2N2837
2N721A	2N2905	BSW24	2N2907A
2N722	BSX36	EN722	2N2907
2N722A	2N2837	BSW24	2N2907A
2N725	AF106	2N731	
2N726	2N727	BC178	2N3250
2N727	BC178	2N3250	BC177
2N728	BSX49	2N2297	
2N729	BSX49	2N2297	
2N730	2N2218	2N2102	BSX45
2N731	2N2221A	2N2102	2N731
2N734	2N2221	BSX46	2N2102
2N734A	2N2218A	BSW64	2N2222A
2N735	BFY80	2N2221	2N1091
2N735A	2N2218A	BSW64	2N2222A
2N736	2N2222	BSX46	2N1091
2N736A	2N2222	BSW64	2N2222A
2N736B	2N2896	BSW64	2N2222A
2N738	2N2896	BSW64	2N2222A
2N738A	BSX49	2N2297	
2N739	2N2102	2N221A	BSW64
2N739A	2N2896	2N2222A	BSW64
2N740	BC141	2N2222A	2N2102
2N740A	BFY45	BSW64	2N2222A
2N741	AF202	2N2996	2N5043
2N741A	AF202	AF106	
2N742	2N2218	2N2217	
2N742A	2N2218	BSW64	2N2222A
2N743	BSY17	BSX90	2N835
2N743A	2N2369		
2N744	BSX91	EN744	BSY18
2N744A	2N2369		
2N745	BSX49	2N2297	
2N746	2N2221	BSW64	2N2222A
2N747	BFY56	2N2247	
2N748	BFY56	2N2247	
2N749	BFY56	2N2247	
2N751	BFY56	2N2247	

2N752	2N2221	BFY44	2N736
2N753	BSY39	BSY62	2N4275
2N754	2N2297	2N1613	BSY10
2N755	2N2218	2N1893	2N2243A
2N756	2N2218	2T706	BSY38
2N756A	BFY56	2N2247	
2N757	2N2218	BSY10	2N734
2N757A	BFY56	2N2247	
2N758	2N2218	2T708	2N753
2N758A	BFY56	2N2247	
2N759	2N2218	BSW66	2N2222A
2N759A	2N3019	BSW66	2N2222A
2N759B	2N3019	BSW66	2N2222A
2N760	2N2218	BFY76	BCY59
2N760A	2N3019	BCY65E	2N2483
2N760B	2N3019	BSW66	2N2222A
2N761	2N2218A	2N4875	BSW66
2N762	2N2218A	BSW66	2N2222A
2N768	2N961	AF124	2N990
2N769	2N961	AF124	2N990
2N718A	ZT1613	2N1711	BFX69
2N771	2N3014		
2N772	2N3014		
2N773	2N3014		
2N774	2N3014		
2N775	2N3014		
2N776	2N3014		
2N777	2N3014	2N734	
2N778	2N3014	2N734	
2N779	2N964		
2N779A	2N964	AF106	
2N779B	2N964	AF106	
2N780	2N2220	BF115	BC10
2N781	2N2635	BSW25	2N3546
2N782	2N2635	BSW25	2N3546
2N783	2N834	BSX28	2N4274
2N784	2N834	BSX28	2N4274
2N784A	2N834	BSX20	2N2369
2N785	AF124	2N990	
2N789	2N3946	2N332	BCY32
2N790	2N3946	2N333	BCY32
2N791	2N3946	2N334	BCY32
2N792	2N3946	2N335	BCY32
2N793	2N3946	2N336	BCY32
2N794	2N2635	AF124	2N990
2N739	2N2102	2N2221A	BSW64
2N796	2N2635	AF124	2N990
2N797	BSX20	2N2369	
2N799	AF101	AF127	2SA155
2N800	2N404	ASY27	2N1305
2N801	2N404	ASY27	2N1305
2N802	2N404	ASY27	2N1305
2N803	2N404	ASY27	2N1305
2N804	2N404	ASY27	2N1305
2N805	2N404	ASY27	2N1305
2N806	2N404	ASY27	2N1305
2N807	2N404	ASY27	2N1305
2N808	2N404	ASY27	2N1305
2N809	2N404	ASY27	2N1305
2N810	2N404	ASY27	2N1305
2N811	ASY32	2N1305	2SB219
2N812	2N404	ASY27	2N1305
2N813	2N404	ASY27	2N1305
2N814	2N404	ASY27	2N1305
2N815	ASY74	2N1302	AC153



TYPE No.		POSSIBLE SUBSTITUTES	
2N816	ASY74	2N1302	AC153
2N817	ASY74	2N1302	AC153
2N818	ASY74	2N1302	AC153
2N819	ASY74	2N1302	AC153
2N820	ASY74	2N1302	AC153
2N821	ASY74	2N1302	AC153
2N822	ASY74	2N1302	AC153
2N823	ASY74	2N1302	AC153
2N824	ASY32	2N1305	2SB219
2N825	2N404	ASY27	2N1305
2N826	2N404	ASY27	2N1305
2N827	BSW25	2N3714	2N2894A
2N828	BSW25	2N3714	2N2894A
2N828A	BSW25	2N3714	2N2894A
2N829	BSW25	2N3714	2N2894A
2N834	ZT708	2N753	2N708
2N834A	BSX28	2N4274	2N3014
2N835	ZT708	2N753	2N708
2N839	2N2222	BSY44	2N929
2N840	2N2221	2N929	2N930
2N841	2N2222	2N929	2N930
2N842	2N2221	2N4253	2N4252
2N843	2N2222	2N4252	2N4253
2N844	2N2896	2N1893	2N2243A
2N845	2N2896	2N1893	2N2243A
2N846	2N960	2N964	
2N846A	2N960	2N964	
2N846B	2N960	2N964	
2N847	2N835	BSX20	2N2369
2N848	2N834	BSX20	2N2349
2N849	2N835	BSX48	BSX19
2N850	2N834	BSX20	BSX48
2N851	2N835	BSX48	BSX19
2N852	2N834	BSX20	2N2369
2N858	2N2906	2N2945	BSW24
2N859	2N2906	2N2945	BSW24
2N860	2N2906	2N2945	BSW24
2N861	2N2906	2N2944	2N2945
2N862	2N2906	2N2944	2N2945
2N863	2N2906	2N2944	2N2945
2N864	2N2906	2N2904	2N2905
2N864A	2N2906	2N2904	2N2905
2N865	2N2906	2N2904	2N2905
2N865A	2N2906	2N2904	2N2905
2N866	2N2906	BSW54	2N2219A
2N867	2N2906	BSW24	2N2907A
2N869	ZT706A	2N726	BSX29
2N869A	BSW25	2N3714	2N2894A
2N870	ZT86	2N1893	BSX46
2N871	2N2895	2N1893	BSX46
2N902	2N2221	2N332	BSW64
2N903	2N2221	2N333	BSW64
2N904	2N2221	2N334	BSW64
2N905	2N2221	2N335	BSW64
2N906	2N2221	2N336	BSW64
2N907	2N2221	2N337	2N3015
2N908	2N2221	2N338	2N3015
2N909	2N2222	BFY26	2N2192
2N910	BFY65	2N2222	BSX46
2N911	BSX46	2N2222	BSX21
2N912	2N2895	BSX46	2N2222
2N913	BC350	2N3703	
1N914	BSX87	BSX20	2N2369
2N914A	2N2369	BSX20	2N2369
2N915	ASY74	2N1302	AC153

TYPE No.		POSSIBLE SUBSTITUTES	
2N915A	BSW64	2N2247	
2N916	ZT18	BFY18	2N916
2N916A	2N918	BSW64	2N2222A
2N917	2N918	BFX73	2N3563
2N917A	2N918	BFX73	
2N918	BFX73	EN918	2N3563
2N919	2N834	BSW64	2N2222A
2N920	2N834	BSW64	2N2222A
2N921	2N834	BSW64	2N2222A
2N922	2N834	BSW64	2N2222A
2N923	2N2906	BC177	2N3965
2N924	2N2906	BC177	2N3965
2N925	2N2906	BC177	2N3965
2N926	2N2906	BC177	2N3965
2N927	2N2906	BSX21	2N2604
2N928	2N2906	2N2604	2N2605
2N929	BFX92	2N3565	2N930
2N929A	BC319	2N930	
2N930	BC319	2S501	
2N930A	BC319	2S501	
2N930B	2N930A	BC109	2N930
2N934	2N965	2N2635	BSW25
2N935	2N2907A	2N2945	2N327A
2N936	2N2907A	2N328A	2N2945
2N937	2N2907A	2N329A	2N2945
2N938	2N2907A	2N2945	BSW24
2N939	2N2907A	2N2945	BSW24
2N940	2N834	BSX20	2N2369
2N941	2N2907A	2N2945	BSW24
2N942	2N2907A	2N2945	BSW24
2N943	2N2907A	2N2945	BSW24
2N944	2N2907A	2N2945	BSW24
2N945	2N2907A	2N2945	BSW24
2N946	2N2907A	2N2945	BSW24
2N947	2N834	ZT41	2N706
2N955	2N797	BSX20	2N2369
2N956	ZT1711	BFY11	BSX33
2N957	2N2501	ZT43	BFY17
2N958	2N835	2N706	BSX20
2N959	2N835	2N706	BSX20
2N960	2N964	BSW25	2N3546
2N961	2N964	BSW25	2N3546
2N962	2N964	BSW25	2N3546
2N963	2N964	BSW25	2N3546
2N964	ASY27	BSW25	2N3546
2N964A	2N964	BSW25	2N3546
2N965	2N964	BSW25	2N3546
2N966	2N964	BSW25	2N3546
2N967	2N964	BSW25	2N3546
2N968	2N964	BSW25	2N3546
2N969	2N964	BSW25	2N3546
2N970	2N964	BSW25	2N3546
2N971	2N964	BSW25	2N3546
2N972	2N964	BSW25	2N3546
2N973	2N964	BSW25	2N3546
2N974	2N964	BSW25	2N3546
2N975	2N964	BSW25	2N3546
2N976	2N964	2N961	BSW25
2N977	2N964	2N985	BSW25
2N978	BSX36	2N5142	2N2837
2N979	2N2635	BSW25	2N3546
2N980	2N2635	BSW25	2N3546
2N981	2N720A	BC107	A157
2N982	2N964	BSW25	2N3546
2N983	2N964	2N985	BSW25

TYPE No.	POSSIBLE SUBSTITUTES		
2N984	2N964	2N985	BSW25
2N985	2N964	BSW25	2N3546
2N986	2N2895	BPY65	LS600
2N987	AF106	AF124	2N2635
2N988	2N2221	2N706	BSW64
2N989	2N2221	2N706	BSW64
2N990	AF178	AF134	AF124
2N991	AF185	AF135	2N2635
2N992	AF185	AF136	2N2635
2N993	AF185	AF137	2N2635
2N994	BSW25	2N3714	2N2894A
2N995	ZT708	2N727	2N4389
2N995A	2N3250	BC179	2N4389
2N996	BSX29	2N3248	2N2906
2N997	2N720A	BFX67	
2N998	BFX66	2N997	
2N999	BFX67	2N997	
2N1000	ASY74	2N1304	
2N1003	ASY32	2N1305	2SB219
2N1004	ASY32	2N1305	2SB219
2N1005	2N2242	BC107	A157
2N1006	2N2242	BC107	A157
2N1007	ADY27	AD149	2N236A
2N1008	AD117	AC128	AC153
2N1008B	AC151	AC125	ACY24
2N1009	AC153	AC117	AC128
2N1010	AC127	2N1302	2SD75
2N1011	ASZ18	TI3027	ADY26
2N1012	ASY73	2N388A	2SD11
2N1013	2SB80	BDX14	2N3740
2N1014	AC153	2N1552	2SB248A
2N1015	2N3713	BLY17	GET2221
2N1015A	2N3713	BDY20	2N3055
2N1015B	2N5758	BDY50	2N3773
2N1015C	2N5760	BDX50	2N3773
2N1015D	MJ410	BU120	
2N1015E	MJ411	BU120	
2N1015F	MJ411	BU120	
2N1016	2N3713	BDY20	2N3055
2N1016A	2N3713	BDY20	2N3055
2N1016B	2N3713	BDX50	2N3773
2N1016C	2N5758	BDX50	2N3773
2N1016D	2N5760	BU120	
2N1016E	MJ3430	BU120	
2N1016F	MJ3430	BU120	
2N1017	ASY27	2N404	2SA210
2N1018	2N404	2N582	2SA210
2N1021	2N456A	2N1014	2N1533
2N1021A	2N1021	ASZ15	2N1533
2N1022	2N456A	2N1100	ASZ15
2N1022A	2N1022	ASZ15	2N1533
2N1023	2N3323	AF212	AF106
2N1024	2N3250	BC160	2N1132
2N1025	2N3250	BCY11	2N1132
2N1026	2N3250	BC160	2N2944
2N1027	2N3250	BC178	2N2945
2N1028	2N2944	BCY32	2N1475
2N1029	2N1553	TI3027	ASZ16
2N1029A	2N1554	TI3027	ASZ16
2N1029B	2N1555	TI3027	2N174
2N1029C	2N1556	2N456A	2N174
2N1030	2N1557	2N456A	2N1032
2N1030A	2N1558	2N456A	2N277
2N1030B	2N1559	2N173	
2N1030C	2N1560	2N1146C	

TYPE No.	POSSIBLE SUBSTITUTES		
2N1031	2N1553	AD133	ADZ11
2N1031A	2N1554	TI3027	
2N1031B	2N1555	TI3027	2N441
2N1031C	2N1556	2N456A	2N441
2N1032	2N1557	2N456A	2N277
2N1032A	2N456A	2N514B	
2N1032B	2N173		
2N1032C	2N1099		
2N1034	2N2944	2N2945	BCY32
2N1035	2N2944	2N2945	BCY32
2N1036	2N2944	2N2945	BCY32
2N1037	2N2944	2N2945	BCY32
2N1038	AD149	2N2138	2SB240
2N1039	ASZ17	2N2139	2SB181
2N1040	AD162	2N1038	2SB181
2N1041	ASZ15	2SB181	2N2141
2N1042	2N1042	2N2143	2SB80
2N1043	2N1042	AD131	2SB181
2N1044	2N1042	AD131	2SB181
2N1045	2N1042	2N2146	2N1014
2N1045-1	2N1038	2N2563	ASZ15
2N1045-2	2N1038	2N2567	ASZ15
2N1046	2N2832	2N1907	2N1167
2N1046A	2N2832	2N1907	AL100
2N1046B	2N2838	2N1907	2N2147
2N1047	2N3441	2N4232	2N5050
2N1047A	2N3441	2N4232	2N5050
2N1047B	2N3441	2N4232	2N5050
2N1048	2N3441	2N4232	2N5050
2N1048A	2N3441	2N4232	2N5050
2N1048B	2N3441	2N4232	2N5050
2N1049	2N4912	2N1613	BDY79
2N1049A	2N4912	BDY79	2N5050
2N1049B	2N4912	BDY79	2N5050
2N1049C	2N3441	2N4232	2N5050
2N1050	2N5759	BDY79	2N5050
2N1050A	2N5759	BDY79	2N5050
2N1050B	2N5759	BDY79	2N5050
2N1050C	2N3441	2N4232	2N5050
2N1051	2N2218	2N2217	2N2219
2N1052	2N2218	2N5058	BSW66
2N1053	BFY56	2N2247	
2N1054	2N2218	2N5059	BSW66
2N1055	2N2218	BSW66	2N1893
2N1056	2N2043	AC153	2SB224
2N1057	2N1924	AC153	2SB225
2N1058	ADY26	ASY74	ASY29
2N1059	AC127	2N2430	2SD11
2N1060	2N2501	2N2217	2N2219
2N1065	2N2188	2SA83	AF124
2N1066	2N3323	AF118	AFZ12
2N1067	2N4237	2N3766	2N1486
2N1068	2N4237	D40D1	2N3766
2N1069	2N5067	2N3766	2N4913
2N1070	2N5067	2N3766	2N4913
2N1072	2N3766	BDY78	
2N1073	2N2218	AU103	2N277
2N1074	2N2218	2N328A	
2N1075	2N2218	2N328A	
2N1076	2N2218	2N328A	2SB229
2N1077	2N2218		
2N1078	SFT232	CTP-1735	2SB107A
2N1079	2N5068	BDY23	2N3445
2N1080	2N4914	BDY23	2N3445
2N1081	BXY45	2N2247	

TYPE No. POSSIBLE SUBSTITUTES

TYPE No. POSSIBLE SUBSTITUTES

2N1082	BXY45	2N2247	
2N1085	BXY45	2N2247	
2N1086	2N1308	ASY29	2N1304
2N1086A	2N1308	ASY29	2N1304
2N1087	2N1308	ASY29	2N1304
2N1090	2N1304	2N1605	2SC90
2N1091	2N1304	2N1605	2SC91
2N1092	2N4237	BFY50	2N2297
2N1093	AF106	2N1305	2SA206
2N1094	2N1308	AF106	
2N1097	2N1414	AC128	2SB219
2N1098	2N1414	AC128	2SB219
2N1099	ADZ12	ADY26	2N1100
2N1100	AD132	CTP-1500	
2N1101	AC127	2N2430	2N647
2N1102	AC127	2N2430	2N647
2N1103	BXY45	2N2247	
2N1107	AF185	AF124	2N990
2N1108	AF185	2N1110	2SA159
2N1109	AF185	2N2188	2SA154
2N1110	AF185	2N1108	2SA156
2N1111	AF185	2N2188	2SA155
2N1111A	AF133	AF137	2SA240
2N1111B	AF133	AF137	2SA240
2N1114	2N440A	ASY29	2N1304
2N1115	2N1284	2SA209	ASY27
2N1115A	ASY32	2N1305	2SB219
2N1116	MM3005	BFY34	2N3252
2N1117	MM3005	2N2193	2N2243A
2N1118	2N3250	2N2604	2N2605
2N1118A	2N3250	2N2604	2N2605
2N1119	2N3546	2N2604	2N2605
2N1120	AD133	TI3027	TI3031
2N1121	2N1306	ASY29	2N1304
2N1122	2N961	AF126	2SA155
2N1122A	2N960	AF126	2SA155
2N1124	2N651	2N1377	2SB89
2N1125	2N651	2N2000	2SB89
2N1126	2N651	2SB80	ACY17
2N1127	2N3428	2SB80	ACY17
2N1128	2N1192	AC128	2SB222
2N1129	2N3427	AC153	2SB223
2N1130	2N1193	AC153	2SB222
2N1131	BFX74	EN1132	2N2904
2N1131A	2N2800	BFX30	2N2905A
2N1132	BFX74	EN1132	2N2904
2N1132A	BFX74A	EN1132	BFS95
2N1132B	2N4405	2N2905A	2SA537
2N1135	BSW25	2N3714	
2N1135A	BSW25	2N3714	
2N1136	AUY21	MP249	2SB248
2N1136A	2N1542	LT5111	ASZ15
2N1136B	AUY21	2N1543	MP249B
2N1137	AUY21	2N1544	2SB248
2N1137A	2N1547	MP438A	LT5111
2N1137B	2N1548	MP438B	ASZ15
2N1138	2N1545	MP280	2SB228
2N1138A	2N1547	MP281	ASZ15
2N1138B	2N1548	MP292	ASZ15
2N1139	2N742	2N835	BSW54
2N1140	2SC151		
2N1141	AF178	2N2495	AF106
2N1141A	AFY18	AF106	
2N1142	AF178	AFZ12	2N2495
2N1142A	AFY18	AF106	

2N1143	AF178	AFY12	2N2495
2N1143A	AFY18	AF106	
2N1144	2N321	AC128	2SB37
2N1145	2N1414	AC128	2SB37
2N1146	AD133	2N277	ADZ11
2N1146A	ADZ11	2N278	ADZ12
2N1146B	AUY22	2N173	ASZ16
2N1146C	ADZ12	2N456A	2N1099
2N1147	2N277	ASZ16	2N1536
2N1147A	2N278	ASZ16	2N1536
2N1147B	2N173	ASZ16	2N1536
2N1147C	2N1099	ASZ15	2N1533
2N1149	2N2221	2N2102	BSW54
2N1150	2N2221	2N2102	BSW54
2N1151	2N2221	2N2102	BSW54
2N1152	2N2221	2N2102	BSW54
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2N1154	2N2221	BC107	A157
2N1155	2N2221	BC107	A157
2N1156	2N2221	BC107	A157
2N1157	MP501	CTP1544	
2N1157A	MP502		
2N1158	2N1143	TI806	AF2395
2N1158A	2N1142	TI895	AF2395
2N1159	2N3616	AUY28	2N456A
2N1160	2N3616	AUY22	2SB228
2N1162	CTP1544		
2N1163	CTP3544	2N1162	
2N1164	CTP1545	2N1166	
2N1165	CTP3545	2N1166	
2N1166	CTP1553		
2N1167	CTP3553	2N1166	
2N1168	2N3614	ASZ18	2SB84
2N1169	ASY74	2N1304	
2N1170	ASY74	2N1304	
2N1171	2SA210	ASY27	2N1305
2N1172	2N2137	AD156	2SB240
2N1174	BCY28	BCZ11	2N404
2N1175	ASY26	ACY17	2N1176
2N1175A	ACY17	2N1176	
2N1176	2N1189	2N1038	2SB89
2N1177	2N2957	AF178	2SA118
2N1178	2N2955	AF178	2SA118
2N1179	2N2956	AF125	2SA118
2N1180	2N2956	AF185	2SA118
2N1182	2N2140	ASZ15	2N1533
2N1183	2N2140	AD136	2SB242
2N1183A	2N2140	AUY18	2SB80
2N1183B	2N2141	2SB81	2N1038
2N1184	2N2144	2SB80	2N1038
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2N1184B	2N2146	2N2565	2SB81
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2N1186	2N1375	2N1377	ACY17
2N1187	2N1376	2N1377	ACY17
2N1188	2N1376	2N1377	ACY17
2N1189	2N1377	ACY17	2N1188
2N1190	2N1377	ACY17	2N1188
2N1191	AC117	2N1305	2SB225
2N1192	AC152	2N461	2SB226
2N1193	AC153	2N404	2SB227
2N1194	ACY17	2N1176	
2N1195	AF178	2N2495	2N404
2N1196	BC177	2N3965	
2N1197	2N1613	BC177	2N3965

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2N1198	ASY29	2N1304	
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2N1201	2N4252	BF X73	2N918
2N1202	2N2145	2N456A	2SB229
2N1203	2N2146	2N456A	2N3146
2N1204	T1807		
2N1204A	T2417		
2N1205	BSW54	2N2219A	
2N1206	2N3020	2N5059	BSW54
2N1207	2N3500	2N5059	BSW54
2N1208	2N5477	BO Y11	2N3445
2N1209	2N5477	2N3445	2N1724
2N1210	2N4232	2N3713	2N1722
2N1211	2N4233	2N3445	2N1724
2N1212	2N5477	2N3445	2N1724
2N1217	2N1308	ASY29	2N1304
2N1218	AD161	2N4077	
2N1219	2N3250	BC160	BC Y12
2N1220	2N3250	BC160	BC Y12
2N1221	2N3250	2N2904	2N2905
2N1222	2N3250	2N2904	2N2905
2N1223	2N3250	2N2904	2N2905
2N1224	AF126	AF137	2SA80
2N1225	AF125	AF115	2SA235
2N1226	AF114	AF124	2SA82
2N1227	2N3611	T13027	AD149
2N1228	2N2904	BCY32	2N1475
2N1229	2N2904	BCY32	2N1475
2N1230	2N3250	BCY32	2N1475
2N1231	2N2904	BCY32	2N1475
2N1232	2N2905A	BCY32	2N1475
2N1233	2N2905A	BCY32	2N1475
2N1234	2N3495	BCY32	2N1475
2N1235	2N5759		
2N1238	BCY32	2N2944	
2N1239	BCY32	2N2944	
2N1240	BCY32	2N2944	
2N1241	BCY32	2N2944	
2N1242	BCY32	2N2944	
2N1243	BCY32	2N2944	
2N1244	BCY32	2N2944	
2N1247	2N2222	BC109	2N930
2N1248	2N2222	BC109	2N930
2N1249	BC109	2N930	
2N1250	2N4914	2N3713	BD Y20
2N1251	2N4914	AC127	2N1304
2N1252	2N2537	BS Y10	BS Y25
2N1252A	2N2537		
2N1253	2N2537	BS Y10	BS Y95A
2N1253A	2N2537		
2N1254	MM869B	2N722	2N2907
2N1255	MM869B	2N722	2N2907
2N1256	2N722	2N2907	
2N1257	2N722	2N2907	BF X29
2N1258	MM869B	2N722	2N2907
2N1259	2N722	2N2907	
2N1260	2N5479		
2N1261	2N1531	AC153	2SB252
2N1262	2N1531	AC153	2SB228
2N1263	2N3617	AC128	2SB253
2N1264	2N1191	AF178	2SA83
2N1265	2N1192	2N404	2SB77
2N1265/5	2N1192		

2N1266	2N1191	AF127	2SB77
2N1267	2N2481	2N4252	2N4253
2N1268	2N2481	2N4252	2N4253
2N1269	2N2481	2N4252	2N4253
2N1270	2N2481	2N4252	2N4253
2N1271	2N2481	2N4252	2N4253
2N1272	2N2481	2N4252	2N4253
2N1273	AC128	2N1191	2SB222
2N1274	AC128	2N1191	2SB222
2N1275	2N2501		
2N1276	2N2501		
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2N1278	2N2501		
2N1279	2N2501		
2N1280	2N1305	2SA208	
2N1281	2N1307	2SA209	
2N1282	2SA210	2N1307	
2N1284	2N1305	2SA208	
2N1287	AC153	AC128	2SB225
2N1291	2N1529	AC153	2SB248
2N1293	2N1531	AC153	2SB248A
2N1295	2N1532	AC153	2SB249
2N1297	2N1533	2N456A	2N3146
2N1298	2N1302		
2N1299	2N1306		
2N1300	2N346	2N990	
2N1301	2N346	2N990	
2N1302	ASY28	ASY73	2N1304
2N1303	2N1192	ASY26	2N425
2N1304	ASY28	ASY29	2N1302
2N1305	ASY26	NK T125	2N466
2N1306	ASY29	2N1304	
2N1307	ASY27	2N428	ASY55
2N1308	ASY29	2N1304	
2N1309	ASY27	2N1313	2N428
2N1310	MP2373-1		
2N1311	MP2373-3		
2N1313	MP2373-4	2N396	2SA209
2N1314	2N3611	AD149	2SB84
2N1315	2N3611	ASZ17	2SB84
2N1316	2SA210		
2N1317	2SA210		
2N1318	2SA210		
2N1319	MP2372-1		
2N1320	AC153	MP2372	AC128
2N1322	AC153	CTP1735	2SB248A
2N1324	AC153	CTP1729	2SB249
2N1326	2N1038	2SB230	
2N1328	AC153	2N1038	2SB248
2N1331	AC153	2N1038	2SB249
2N1333	CTP1730	ASZ15	2N1533
2N1334	2SD125		
2N1335	2N3019		
2N1336	2N3019		
2N1337	2N3019		
2N1338	2N2193	BSX46	BF Y13
2N1339	2N3019		
2N1340	2N3019	BF Y45	BSW66
2N1341	2N3019		
2N1342	2N3019	BF Y45	2N1341
2N1343	2N404	2N1431	
2N1344	2N404	2SA209	
2N1345	2N404	2SA210	2N1433
2N1346	2N404	2SA209	

TYPE No.		POSSIBLE SUBSTITUTES	
2N1347	2N404	2SA209	
2N1348	2N404	2SA209	
2N1349	2N404	2SA210	
2N1350	2N404	2SA209	
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2N1352	2N651	2N526	2SA209
2N1353	2N404	2SA208	
2N1354	2N404	2SA208	
2N1355	2N404	2SA209	
2N1356	2N404	2SA209	
2N1357	2N404	2SA210	
2N1358	AUY29	2N2929	2SB252
2N1359	AD149	OC318	2SB249
2N1360	TI3027	LT5102	2N1536
2N1362	AUY34	2N456	2N3146
2N1363	2N456A	2N3146	2N1533
2N1364	2N456A	2N3146	2N1533
2N1365	2N456A	2N3146	2N1533
2N1366	2N1302		
2N1367	2N1304		
2N1370	ASY26	2N1192	2SB77
2N1371	2N1192	2SB77	2N1377
2N1372	2N1191	2N1377	2SB89
2N1373	AC153	2N1191	2SB225
2N1374	2N1192	2N1377	2SB89
2N1375	AC153	2N1192	2SB226
2N1376	2N1192	2SB89	2N1377
2N1377	AC153	2N651	2SB227
2N1378	2N1193	2N1377	ACY17
2N1379	ASY26	2N1193	2N1379
2N1380	ASY26	2N1192	2SB89
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2N1382	2N1192	2N1377	2SB89
2N1383	2N1192	2N1377	2SB89
2N1384	2N2635		
2N1385	AF139	2N1385	AF186
2N1386	2N2222	BFY10	BFY17
2N1387	2N2222	BFY10	2S102
2N1388	2N2222	2N2218	
2N1389	2N2222	2N2218	
2N1390	2N2222	2N2218	
2N1395	2N2955	2N2188	2SA80
2N1396	2N3323	AF118	2SA87
2N1397	2N3323	AF118	2SA87
2N1400	2N346	AF134	AF124
2N1401	2N346	AF134	AF124
2N1402	2N346	AF134	AF124
2N1404	AF124	2N1303	2N1307
2N1406	2SA128		
2N1407	2SA78		
2N1408	2N2000	ACY17	2N1188
2N1409	2N2537		
2N1409A	2N2537		
2N1410	2N2537		
2N1410A	2N2537	BSX46	D40D1
2N1411	2N962	AF124	2N2188
2N1412	2N1100	CTP1500	ADZ12
2N1412A	AD104	2N1146A	2N1146B
2N1413	ASY48	2N1176	2SB89
2N1414	ASY48	2N1176	2SB89
2N1415	ASY48	2N1176	2SB89
2N1416	2N1193	AC153	2SB89
2N1419	2N1164		
2N1420	ZT1711	2N1711	BFY11
2N1420A	2N2219	2N3643	BSX46-10

TYPE No.		POSSIBLE SUBSTITUTES	
2N1425	AF153	2N990	
2N1426	AF153	AF136	AF124
2N1427	2N962	AF124	2N2635
2N1428	2N4405	2N2905A	2SA537
2N1429	2N869	BC238	2N2905
2N1431	AC127	2N2430	2N1302
2N1437	AC153	2N3146	2SB249
2N1438	AC153	AC128	2SB252A
2N1439	2N2907A	2N2945	2N2946
2N1440	2N2907A	2N2945	2N2946
2N1441	2N2907A	2N2945	2N2946
2N1442	2N2907A	2N2945	2N2946
2N1443	2N2907	2N2945	2N2946
2N1444	2N2410	2N3252	
2N1445	2N3500		
2N1446	2N1191	2N1373	2N1377
2N1447	2N1191	2N1373	
2N1448	2N1192	2N1373	
2N1449	2N1189	2N1375	2N527
2N1450	2N2955	2N1143	
2N1451	2N464	2N1375	2N1377
2N1452	2N1991	2N1375	2N1377
2N1465	2N456A	2N1346	
2N1466	2N456A	2N3146	
2N1469	2N2906	2N2944	2N2945
2N1471	2N1309	2SA209	
2N1472	2N834	2N2537	2N3015
2N1473	2N2000		
2N1474	2N2906A	BSY16	2N2944
2N1474A	2N2906A	BCY12	2N2945
2N1475	2N2906A	BCY11	2N2944
2N1476	2N4928	2N2944	2N2945
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2N1478	2N3427	2N1307	ACY17
2N1479	2N4237	ZT1479	BFX34
2N1480	2N4238	ZT1480	BFX34
2N1481	2N4237	ZT1481	BFX34
2N1482	2N4238	ZT1482	BFX34
2N1483	2N4231	ZT1483	2SD122
2N1484	2N4232	ZT1484	2SD123
2N1485	2N4231	ZT1485	2SD122
2N1486	2N4232	ZT1486	D44C8
2N1487	2N4913	ZT1487	BDY38
2N1488	2N4914	ZT1488	2SD125
2N1489	2N4913	ZT1489	2SD124
2N1490	2N4914	ZT1490	2SD125
2N1491	2N2218	BFY10	BFY17
2N1492	2N2192	BFY10	2S102
2N1493	2N3500	BSW54	2N2219A
2N1494	T1808	2N2382	
2N1494A	T2418	2N2382	
2N1495	T1472	2N2382	
2N1496	T1473	2N2382	
2N1499	2N960	2N964	
2N1499A	AF106	2N960	AF190
2N1499B	T2934		
2N1500	2N962	2N964	
2N1501	2N2144	AC153	2SB248B
2N1502	2N2143	AC153	2SB248
2N1505	2N2219A	BFY12	2N2217
2N1506	2N2219A	BFY12	2N2217
2N1506A	2N344		
2N1507	2N2219	2N2243A	BSX45
2N1511	2N4913	ZT1511	2N3713
2N1512	2N4914	ZT1512	2N3445

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

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2N1514	2N4914	ZT1514	2N5006
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2N1516	AF185	AF135	2SA234
2N1517	AF178	2N2495	AF134
2N1518	MP943	2N2153	
2N1519	MP943A	2N2154	
2N1520	2N2153	MP944	
2N1521	2N2154	MP944A	
2N1522	2N2153	MP945	
2N1523	2N2154	MP945A	
2N1524	2N3325	AF184	2N1924
2N1525	2N3325	AF181	AF200
2N1526	2N3325	AF185	TIS37
2N1527	2N3325	AF185	AF170
2N1528	2N2218	BSY34	BSW51
2N1529	NKT401	CDT-1319	AUY19
2N1529A	AUY19	ASZ16	2N1536
2N1530	AUY19	NKT401	CDT-1320
2N1530A	AUY19	ASZ16	2N1536
2N1531	AUY20	NKT401	CDT-1321
2N1531A	AUY20	ASZ15	2N1533
2N1532	AUY34	CDT-1322	ASZ15
2N1532A	AUY34	ASZ15	2N1535
2N1533	AUY34	ASZ15	2N1535
2N1534	AUY19	NKT404	CDT1320
2N1534A	AUY19	AD133	NKT403
2N1535	AUY19	ADZ11	CDT1320
2N1535A	AUY19	ASZ16	2N1536
2N1536	AUY20	ASZ18	CDT1321
2N1536A	AUY20	ASZ15	2N1533
2N1537	AUY34	CDT1322	ASZ15
2N1537A	AUY34	ASZ15	2N1533
2N1538	AUY34	ASZ15	2N1533
2N1539	AUY19	CDT1310	NKT402
2N1539A	AUY19	ASZ16	2N1536
2N1540	AUY19	ASZ16	NKT402
2N1540A	AUY19	ASZ16	2N1536
2N1541	AUY20	CDT1312	NKT403
2N1541A	AUY20	ASZ16	2N1536
2N1542	AUY34	CDT1313	ASZ15
2N1542A	AUY34	ASZ15	2N1533
2N1543	AUY34	ASZ15	2N1533
2N1544	AUY19	ASZ16	CDT1310
2N1544A	AUY19	ASZ16	2N1536
2N1545	AUY19	ASZ18	CDT1311
2N1545A	AUY19	ASZ16	2N1536
2N1546	AUY20	ASZ15	CDT1312
2N1546A	AUY20	ASZ16	2N1533
2N1547	AUY34	ASZ15	2N1533
2N1547A	AUY34	ASZ15	2N1533
2N1548	AUY34	ASZ15	2N1533
2N1549	AUY29	T13027	CTP1504
2N1549A	AUY29	2N1166	
2N1550	AUY29	T13028	CTP1504
2N1550A	AUY29	2N1166	
2N1551	ADZ12	CTP1503	2N1166
2N1552	2N1021A	CTP1500	2N1166
2N1552A	2N1021A	2N1166	
2N1553	AUY29	T13027	CTP1508
2N1553A	AUY29	T13027	2N1166
2N1554	AUY29	T13028	CTP1504
2N1554A	AUY29	2N1166	
2N1555	ADY26	ADZ12	CTP1503
2N1555A	CTP1553	AUY22	

2N1556	2N1021A	2N1100	2N1166
2N1556A	2N1021A	2N1166	
2N1557	AUY29	2N456A	2N514
2N1557A	AUY29	2N456A	2N514
2N1558	AUY29	2N514A	2N1146A
2N1558A	AUY29	2N514A	2N1166
2N1559	2N514B	2N1146B	2N1166
2N1559A	CTP1553	AUY22	
2N1560	2N1146C	2N1166	
2N1560A	CTP1553	AUY22	
2N1562	CTP1553	AUY22	
2N1564	2N1564	BSX46	2SC154
2N1565	2N2218	BSX46	2SC154
2N1566	2N2219	BSX46	2SC154
2N1566A	2N2219	BC141-10	BSW54
2N1572	2N3020	BF177	2SC857
2N1573	2N3020	BF178	2SC857
2N1574	2N3019	2SC857	BFY14C
2N1586	2N706A		
2N1587	2N2501		
2N1588	2N22221		
2N1589	2N835	2N2102	
2N1590	2N2501	2N2102	
2N1591	2N2221	2N2102	
2N1592	2N2222	2N2102	
2N1593	2N2222	2N2102	
2N1594	2N2102		
2N1605	2N1304	2N1605A	ASY29
2N1605A	2N1304	2N1605	ASY29
2N1609	2N2140	CTP729	
2N1610	2N2145	CTP1729	
2N1611	2N2138	CTP1735	
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2N1620	2N5458	2N3446	2N1724
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2N1631	2N3325	AF185	2N2635
2N1632	2N3325	AF185	2N2635
2N1633	AF126	AF136	2N641
2N1634	AF126	AF136	2N641
2N1635	AF125	AF1345	2N991
2N1636	AF125	AF135	2N991
2N1637	2N3325	AF185	2SA235
2N1638	2N3325	AF185	2SA235
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2N1643	2N2945	2N2944	
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2N1654	MM3006	2N2944	2N2945	2N1761	2N2144	AUY28	2SA341
2N1655	MM3007	2N2944	2N2945	2N1762	2N2145	2N2567	ASZ16
2N1656	MM3007	2N2944	2N2945	2N1768	2N4231	2N3713	2N1058
2N1657	MM3005			2N1769	2N4233	2N3713	2N1050
2N1666	2N3616	AUY22	2SB341	2N1785	2N3324	2N2996	
2N1667	2N3618	AUY21	2SB341	2N1786	2N3323	2N2996	
2N1668	2N3616	AUY21	2SB341	2N1787	2N3324	2N2996	
2N1669	2N3616	AUY22	2SB341	2N1788	2N3324	2N2996	
2N1672	2N1302			2N1789	2N3325	2N2996	
2N1676	2N2944	2N2945		2N1808	ASY29	2N1304	
2N1677	2N2944	2N2945		2N1809	2N5885		
2N1683	2N2635			2N1810	2N5629		
2N1690	2N4912	2N4912		2N1816	2N5302		
2N1691	2N5050			2N1817	2N5303		
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2N1708	ZT1708	BSX87	2N743	2N1853	2N5334	2N2635	
2N1708A	BSX87	2N743	BSX20	2N1854	2N2635		
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2N1711A	2N2219A	BFX68A	2N3643	2N1865	2N3325	2N2997	
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2N1721	2N3767			2N1892	2N1303		
2N1722	2N5427	2N3446		2N1893	2SC708	BSY45	
2N1723	2N5428	BLY17	2N3448	2N1893A	2N3498		
2N1724	BLY17	2N4347	2N1725	2N1899	2N4002		
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2N1726	2N3323	TI690		2N1906	2N2832	AL100	2N1907
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2N1730	2N1302	2N1730		2N1918	BC160	2N1132	2N2944
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2N1742	AF127	2N3288	2N2996	2N1921	BCZ12	2N2944	2N2945
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2N1748A	2N3323	2N2997		2N1944	2N2219A	2N1893	2N2243A
2N1749	2N3323	2N2996		2N1945	2N2219A	2N1893	2N2243A
2N1751	2N2832	2N2996	2N2287	2N1946	2N2219A	2N1893	2N2243A
2N1752	2N3325	2N2996		2N1953	2N2218		
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2N1971	2N2140		
2N1972	2N2219	BFX69	2N3643
2N1973	2N2219	BSX46	D40D8
2N1974	2N3498	ZT66	BSX46
2N1975	2N3498	ZT66	D40N1
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2N1981	AD104	2N1146	2N1146B
2N1982	AD104	2N1146	2N1146B
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2N1984	ZT1613	2N2297	2N2218
2N1985	2N2218	BFY10	2N1613
2N1986	2N2219	2N1893	BFX68
2N1987	2N2218	BFY10	2N1613
2N1988	2N2218A	2N1893	2N699
2N1989	2N2218A	2N1893	2N2243A
2N1990	BSX21	2N1990	2N699
2N1990R	BFY45	BC394	2N4390
2N1991	BFY64	2N5143	2N1132
2N1993	2N1302	2N1306	
2N1994	2N1306	2N1308	
2N1995	2N1306	2N1308	
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2N2004	2N5231	2N2944	2N2945
2N2005	2N5231	2N2944	2N2945
2N2006	2N2944	2N2945	
2N2007	2N2944	2N2945	
2N2008	2N3500	2N2990	BSW66
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2N2016	2N5882	ZT2016	2N3715
2N2017	2N2405	BFY50	2N2297
2N2018	2N5051	2N3738	2N3996
2N2019	2N5052	2N3738	2N3996
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2N2021	2N5051	2N3738	
2N2032	2N4232	2N3713	2N1209
2N2033	2N3020	2N3420	
2N2034	2N4238	2N3421	2N4238
2N2035	2N4232	2N4911	D44C7
2N2036	2N4232	2N4911	D44C8
2N2038	2N2218		
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2N2042	ACY17	2N1176	
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2N2063	AD149	2N3611	2N2836
2N2063A	AD138	AD149	T13027
2N2064	AD149	OC26	2N2836
2N2064A	AZ15	T13027	2SB472
2N2065	2N3615	NKT401	AD132
2N2065A	AZ15	T13027	2SB472
2N2066	SFT250	NKT403	2N3615
2N2066A	AZ15	T13027	2SB472
2N2067	2N1536	2N2553	
2N2068	2N1531	2N2555	
2N2075	AD104	2N1146A	2N1146B
2N2076	AD104	2N1146A	2N1146B
2N2077	AD104	2N1146A	2N1146B
2N2078	AD104	2N1146A	2N1146B
2N2079	AD104	2N1146A	2N1146B
2N2080	AD104	2N1146A	2N1146B
2N2081	AD104	2N1146A	2N1146B
2N2082	AD104	2N1146A	2N1146B
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2N2085	2N1304		
2N2086	2N3020	2N2243A	T2198
2N2087	2N3020	2N2243A	T2299
2N2089	AF124	2N2188	2N2495
2N2090	AF125	2N2190	2SA156
2N2091	AF137	2N2188	2SA240
2N2092	AF127	2N2189	2SA240
2N2093	AF133	AF127	2N642
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2N2110	2N5629	2N3846	
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2N2114	2N3846		
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2N2131	2N4002		
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2N2137	2N1038	2N2552	AUY19
2N2137A	AD130	2N1038	AD150
2N2138	AD149	2N1038	2N2552
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2N2139	AD131	2N1038	2N2554



**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

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2N2140A	AD132	AUY20	2N1038
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2N2141A	AD163	AUY34	2N2555
2N2142	AD130	AUY19	2N1536
2N2142A	AD130	AUY19	2N1536
2N2143	AD149	AUY19	2N1536
2N2143A	AD149	AUY19	2N1536
2N2144	AD131	AUY19	2N1536
2N2144A	AD131	AD149	AUY19
2N2145	AD132	AUY20	AZ18
2N2145A	AD132	AUY20	2N1533
2N2146	AUY28	2SB424	
2N2146A	AUY28	2SB424	
2N2147	2N2832	AD167	2N1907
2N2148	2N2832	AD166	2N2837
2N2150	2N5477		
2N2151	2N5477		
2N2162	2N2946	2N2945	
2N2163	2N2945	2N2944	
2N2164	2N2944	2N2945	
2N2165	2N2946	2N2945	
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2N2167	2N2944	2N2945	
2N2168	2N2997		
2N2169	2N2996		
2N2170	2N2996		
2N2171	2N1376	2N1377	
2N2172	2N1376	2N1377	
2N2175	2N2944	2N2945	
2N2176	2N2944	2N2945	
2N2177	2N2944	2N2945	
2N2178	2N2944	2N2945	
2N2185	2N2946	2N2944	2N2945
2N2186	2N2946	3N108	3N111
2N2187	2N2946	3N108	3N111
2N2188	2N3323		
2N2189	AF106	2SA78	
2N2190	2N3323		
2N2191	2N3323		
2N2192	BSX45	2N2219A	2N2243A
2N2192A	BFX68A	2N2243A	2N2219A
2N2192B	BFX68A	2N2192A	2N2243A
2N2193	BSX45	2N2218A	2SC708
2N2193A	2N2243A	2N2218A	2N3568
2N2193B	2N3568	BFY50	2N2297
2N2194	BSX45	2N2218A	2N3567
2N2194A	2N2218A	2N3567	BFY50
2N2194B	2N3567	BFY50	2N2297
2N2195	2N2218	2N3641	BFY70
2N2195A	2N2218	2N3641	BFY50
2N2195B	2N2218	2N3641	BFY50
2N2196	2N3766	D44C7	2N2197
2N2197	2N3766	BSX45	2N2197
2N2201	2N5681	2N4239	2N3738
2N2202	2N5681	2N4239	2N3738
2N2203	2N5681	2N3738	2N4239
2N2204	2N5681	2N3738	2N4239
2N2205	2N835	ZT2205	BSX87
2N2206	2N835	ZT2206	BSX87
2N2207	ZT2207	AF118	
2N2210	2N2075		
2N2216	2N3498		
2N2217	2N2218	BFY72	2N2219

2N2217A	BFX97	2N2219A	BSW54
2N2218	BFX96	2N3641	2SC479
2N2218A	BFY72	2N2219	2N3641
2N2219	BSX45	2N3641	BSY34
2N2219A	BFY72	BSW54	BCW78
2N2220	2N2222	BFY72	2N2221
2N2220A	BFX95	2N2297	
2N2221	BFX94	BSX45	2N2222
2N221A	BFY72	BSW63	2N4436
2N2222	BSX45	BSW62	2N2222A
2N2222A	BFY83	2N4437	BCW74
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2N2223pr	BFX71		
2N2223Apr	BFX72		
2N2224	2N2218	2N2219	
2N2226	2N6057		
2N2227	2N6057		
2N2230	BUY12	BUY56	
2N2236	2N2218	BSY34	2N2193
2N2237	2N2216	BSY58	2N2192
2N2239	2N4232	2N3766	D40D4
2N2242	BSX87	2N2501	2N2369
2N2243	2N3019	BSW65	2N2219
2N2243A	2N3019	BSW66	2N1893
2N2244	2N835	2N929	
2N2245	2N835	2N929	2N930
2N2246	2N835	2N929	2N930
2N2247	2N835	2N929	2N930
2N2248	2N835	2N929	2N930
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2N2254	2N834	2N929	2N930
2N2255	2N834	2N929	2N930
2N2256	BSX20	2N2369	
2N2257	BSX20	2N2369	
2N2258	2N964	2N972	ASZ21
2N2259	2N964	2N972	ASZ21
2N2266	2N2145		
2N2267	2N2145		
2N2268	2N2145		
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2N2271	AC153	AC128	2N404
2N2272	2N929	2N914	
2N2273	AF121	AFY12	AF106
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2N2275	2N2946	T2469	
2N2276	2N2944	T2453	
2N2277	2N2944	T2470	
2N2278	2N2945	T2454	
2N2279	2N2945		
2N2280	2N2944	T2455	
2N2281	2N2944	T2472	
2N2285	2N2287	2N2833	
2N2286	2N2287	2N2834	
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2N2290	2N2526	AL100	2N1906
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2N2308	2N4912			2N2399	2N3284	2N2997	
2N2309	2N2218	2N696	2N697	2N2400	2N964	2N711A	
2N2310	2N3020	2N698	2N2243A	2N2401	2N964	2N964	
2N2311	2N698	2N2243A		2N2402	2N2956	2N1893	BSW66
2N2312	2N3020	2N699	2N2243A	2N2405	2N3498	BFY11	2N1711
2N2313	2N1889	2N2243A		2N2410	ZT1711	BSY40	2N3250
2N2314	2N2221A	2N698	2N2243A	2N2411	BCY78		
2N2315	2N2221A	2N699	2N2243A	2N2412	BCY78	BSY41	2N3250
2N2316	2N3020	2N1893	2N2243A	2N2413	2N2221	ZT708	BFY19
2N2317	2N2193	2N1612		2N2414	2N2060		
2N2318	2N929	2N834	2N3014	2N2415	AF186		
2N2319	2N929	2N834	2N3014	2N2416	AF202		2SA240
2N2320	2N929	2N834	2N3014	2N2417	2N3980		
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2N2331	2N2432	BS6054	2N2219A	2N2417B	2N3980		
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2N2334	2N5230	2N2944	2N2945	2N2418B	2N3980		
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2N2336	2N5231	2N2944	2N2945	2N2419A	2N3980		
2N2337	2N5231	2N2944	2N2945	2N2419B	2N3980		
2N2338	2N5877	2N3713		2N2420	2N3980		
2N2339	2N4910	MJ3101	2N1049	2N2420A	2N3980		
2N2349	2N929			2N2420B	2N3980		
2N2350	2N2222A	2N2192	2N2243A	2N2421	2N3980		
2N2350A	2N2222A	2N2192	2N2243A	2N2421A	2N3980		
2N2351	2N2193	BSX33	2N2243A	2N2421B	2N3980		
2N2351A	2N2193	2N2243A	2N3568	2N2422	2N3980		
2N2352	2N2194	BSX33	2N2243A	2N2422A	2N3980		
2N2352A	2N2194	BSX33	2N2243A	2N2422B	2N3980		
2N2353	2N2221	BSX33	2N2243	2N2423	2N3616	2N456A	
2N2352A	2N2221	BSX33	2N2243A	2N2424	2N3250	2N2944	2N2945
2N2356	2N76	2N79		2N2425	2N3250A	2N2945	2N2946
2N2356A	3N74	3N79		2N2427	2N929	2N930	
2N2360	2N3283	AF139	2N2997	2N2428	2N652	AC151	2SB459
2N2361	2N3284	2N2997		2N2429	2N652	AC171	2N1377
2N2362	2N3284	T2580		2N2430	AC152	2N1304	AC128
2N2364	2N3020	2N2243A		2N2431	AC128	2N1377	2SB770A
2N2368	BSY63	BSX19	2SC698	2N2432	BCY59		
2N2369	2N4275	BSX93	DSC689	2N2433	2N2193		
2N2369A	BSS11	BSY48	2N2369	2N2435	2N3020		
2N2370	2N2944	2N2945		2N2436	2N3019	BC110	
2N2371	2N2944	2N2945		2N2437	2N3020	2N1893	2N2243A
2N2372	2N2944	2N2945		2N2438	2N3019	2N1893	2N2243A
2N2373	2N2944	2N2945		2N2439	2N3019	2N1893	2N2243A
2N2374	2N3427	2N404		2N2440	2N3019		
2N2375	2N1193	2N404		2N2443	2N3500	2N1893	2N2243A
2N2376	2N1193	2N404		2N2444	2N456A	2N3146	
2N2377	2N3250	2N2944	2N2945	2N2445	2N456A	2N3146	
2N2378	2N2944	2N2945		2N2447	2N1187	2N1309	
2N2380	2N2193	2N1893	2N2243A	2N2448	2N1187	2N1309	
2N2380A	2N2193	2N2217	2N2219	2N2449	2N652	2N1307	AC122
2N2381	2N2382			2N2450	2N652	AC151	2N652
2N2383	2N4914	2N5006		2N2451	2N2635		
2N2384	2N4914	2N5006		2N2452	BP Y65		
2N2386	2N5266			2N2453x2	BF Y81	2N2453	2N3680
2N2387	BC237A			2N2453x2	BF Y81	2N3680	
2N2388	BC237A			2N2474	2N2432		
2N2389	2N2193	BSX45		2N2475	2N835	ZT2475	BSX27
2N2390	2N3019			2N2476	ZT2476	BSX30	2N3252
2N2393	2N2905			2N2477	ZT2477	2N3252	BSX30
2N2394	2N2905			2N2478	2N2218	2N2538	BSW51

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2N2479	2N2218	2N3252	
2N2480	BF Y83	2N2060	
2N2480A	BF Y83	2N2639	2N2640
2N2481	BSX28	2N4275	2N2369
2N2483	MM2483	BFY26	2SC648
2N2484	MM2484	2SC648	BC107B
2N2487	2N2966		
2N2488	2N2966		
2N2489	2N2966		
2N2490	AD104	ADZ12	2N1146
2N2491	AD104	ADZ12	2N1146
2N2492	AD104	ADZ12	2N1146
2N2493	AD104	ADZ12	2N1146
2N2494	AF106	2N2996	2N2495
2N2495	AF106	2N2996	AF178
2N2496	2N2996		
2N2497	2N5267		
2N2498	2N5265		
2N2499	2N5265		
2N2500	2N5267		
2N2501	2N3014	BFY11	SE4001
2N2510	BFY77	2N930	2N3565
2N2511	BFY77	2N3444	2N2484
2N2512	AF118		
2N2520	2N929	2N930	
2N2521	2N929	2N930	
2N2522	2N929	2N930	
2N2523	2N929	2N930	
2N2524	2N930		
2N2526	AU103	AU105	ASZ15
2N2527	AU103	AU105	AL100
2N2528	AU103	AU105	AL100
2N2537	BSY34	BSX73	2N3015
2N2538	BSY34	2N2219	2N3015
2N2539	BSX49	2N2222A	2N3015
2N2540	BSX49	2N2222A	2N3015
2N2552	2N1038	2N2555	
2N2553	2N1038	2N2555	
2N2554	2N1038	2N2555	
2N2555	2N1038	2N2559	
2N2556	2N1038	2N2559	
2N2557	2N1038	2N2559	
2N2558	2N1038	2N2559	
2N2559	2N1038	2N2555	
2N2560	2N1038		
2N2561	2N1038		
2N2562	2N1038		
2N2563	2N1038		
2N2564	2N1038		
2N2565	2N1038		
2N2566	2N1038		
2N2567	2N1038		
2N2569	2N2432		
2N2570	2N2432	BSX20	BSY62
2N2580	BUY28		
2N2581	2N3847		
2N2582	2N3847		
2N2583	2N3847		
2N2586	BFY77		SE4020
2N2590	2N2604	2N2484	2N2605
2N2591	2N2604	2N2605	
2N2592	2N2604	2N2605	
2N2593	2N2604	2N2605	
2N2594	2N5336		
2N2595	2N3496	2N2604	2N2605

2N2596	2N3496	2N2604	2N2605
2N2597	2N3497	2N736	
2N2598	2N3497	2N2604	2N2605
2N2599	2N3497	2N2604	2N2605
2N2599A	2N3497	2N2604	2N2605
2N2600	2N3497	2N2604	2N2605
2N2600A	2N3497	2N2604	2N2605
2N2601	2N3498	2N2604	2N2605
2N2602	2N3498	2N2604	2N2605
2N2603	2N3499	2N2604	2N2605
2N2604	BC177	2N2605	BCY79
2N2605	2N3798	BF X37	2N4248
2N2605A	2N2605	2N4250A	BC179
2N2606	2N5471		
2N2607	2N5471		
2N2608	2N5265		
2N2609	2N5265		
2N2610	2N929	2N1149	
2N2611	2N3766		
2N2612	2N1559		
2N2613	2N1193	AC126	2N404
2N2614	2N1193	2N404	AC163
2N2615	BFY78		
2N2616	2N1559	BFY78	2N918
2N2617	2N3250	BCZ11	2N2945
2N2631	2N3553	ZT2631	
2N2632	2N5477	2N3487	2N3421
2N2633	2N5477	2N3488	2N3421
2N2634	2N5479	2N3489	2N3421
2N2639x2	BFY81		
2N2640x2	BFY81		
2N2641x2	BFY81	2N2639	
2N2642x2	BFY81		
2N2643x2	BFY81	2N2642	
2N2644x2	BFY81	2N2643	
2N2645	ZT1613	2N2297	BFY26
2N2646uj	TIS43		
2N2647uj	2N3980		
2N2648	2N1377	2N1379	
2N2651	2N2501	BSX39	2N3554
2N2652	BFY83	2N2060	2N2639
2N2652A	BFY83	2N2060	2N2639
2N2654	AF201	AF121	2N654
2N2656	2N2222		
2N2657	2N5336	BFX34	2N2151
2N2658	2N5336	BFX34	2N4239
2N2659	2N1038		
2N2660	2N1038		
2N2661	2N1038		
2N2662	2N1038		
2N2663	2N1038		
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2N2668	2N1038		
2N2669	2N1038		
2N2670	2N1038		
2N2671		2N2495	AF178
2N2672	AF185		
2N2692	2N929	BCY59	BCY70
2N2693	2N929	BCY59	BCY70
2N2694	2N929	BCY59	BCY108A
2N2695	BSX36	2N2907	EN722
2N2696	BSX36	BCY78	2N2906

TYPE No.	POSSIBLE SUBSTITUTES		
2N2697	2N5478	2N3998	
2N2698	2N5478	2N3998	
2N2706	AC151	2N404	2N2431
2N2707	AC153	2N2704	AC128
2N2708	ZT2708	2N918	BF X73
2N2710	BSX27	EN3014	TS691
2N2711	MPS2711	BC168A	TIS98
2N2712	MPS2712	BC168A	TIS98
2N2713	MPS2713	BC168A	TIS98
2N2714	MPS2714	BSX38	2N708
2N2715	MPS2715	BC238A	2SC458
2N2716	MPS2716	BC238A	2SC458
2N2717	ASZ21	2N2635	
2N2720	2N2060	2N2639	
2N2721	2N2060	2N2639	2N2640
2N2722	2N2916	2N2639	
2N2726	2N3440		
2N2729	BF X73	2N3563	
2N2730	MP506		
2N2731	MP505		
2N2732	MP504		
2N2733	MP506		
2N2734	MP505		
2N2735	MP504		
2N2736	MP506		
2N2737	MP505		
2N2738	MP504		
2N2739	2N5885		
2N2740	2N5629		
2N2741	2N5631		
2N2745	2N5885		
2N2746	2N5886		
2N2751	2N5685		
2N2752	2N5686		
2N2784	2N2369A	2N3010	2N2782
2N2787	2N2218		
2N2788	2N2218A		
2N2789	2N2219A		
2N2790	2N2218		
2N2791	2N2221A		
2N2792	2N2222A		
2N2795	2N2635		
2N2800	BFY64	2N1132	2N2904
2N2801	BFY64	2N3244	2N1132
2N2802	2N3350		
2N2803	2N3350		
2N2804	2N3350		
2N2805	2N3350		
2N2806	2N3350		
2N2807	2N3350		
2N2811	2N5477	2N3487	2N4301
2N2812	2N5478	2N3488	2N4301
2N2813	2N5477	2N3489	2N4301
2N2814	2N5478	2N3490	2N4301
2N2815	MJ7000	2N4002	
2N2816	MJ7000	2N3846	
2N2817	2N3846		
2N2818	2N3846		
2N2819	MJ7000	2N3846	
2N2820	MJ7000	2N3846	
2N2821	2N3846		
2N2822	2N3846		
2N2823	MJ7000	2N3846	
2N2824	MJ7000	2N3846	
2N2825	2N3846		

TYPE No.	POSSIBLE SUBSTITUTES		
2N2829	2N5477		
2N2831	2N2221		
2N2832	2N1907	2N1908	2N2287
2N2833	2N2285		
2N2834	2N2286		
2N2835	AD148	2N1038	2N2564
2N2836	2N3612	AD149	AD148
2N2837	BSX36	2N2904	2N2905
2N838	BSX36	2N2904	2N2905
2N2840	2N489	2N491A	
2N2841	2N5471		
2N2842	2N5471		
2N2843	2N5265		
2N2844	2N5265		
2N2845	2N2539	2N2537	BSW64
2N2846	BSX30	2N2537	2N3015
2N2847	2N2539	2N2537	
2N2848	BSX30	2N2538	2N2537
2N2849	2N2849	BSW64	2N2222A
2N2850	2N5336	2N3421	
2N2851	2N5336	2N3421	
2N2852	2N5335	2N3419	
2N2853	2N5336	2N3418	
2N2854	2N5337		
2N2855	2N5336	2N3420	
2N2856	2N5334	2N3418	ZT2856
2N2857	ZT2857	BF X62	ZT2857
2N2858	2N5335		
2N2859	2N5338		
2N2861	2N3798		
2N2862	2N3798		
2N2863	2N2219	BFY51	
2N2864	2N2219	BFY51	
2N2865	BSY62	BSY70	BF180
2N2866	2N5477		
2N2867	2N5478		
2N2868	2N3252	BFY56	2N4231
2N2869	MP2015	AD131	2SB471
2N2870	MP2016	ASZ18	2SB340
2N2875	2N6182	2N3418	
2N2876	2N3632		
2N2877	2N5477	2N3998	
2N2878	2N5478	2N3998	
2N2879	2N5477	2N3998	
2N2880	2N5478	2N3998	
2N2881	2N4235	2N3740	
2N2882	2N4236	2N3741	
2N2883	2N3553	2N3309	BFW17
2N2884	2N3553	BFW17	2N3309
2N2890	2N3507	BSW66	2N3421
2N2891	2N3507	BD140	2N3421
2N2892	2N5477	2N3998	
2N2893	2N5478		
2N2894	BSX29	2N3248	2N2894A
2N2894A	MM2894A	EN2894A	2N3546
2N2895	BFY56	2N3019	2N3712
2N2896	BFY56	2N3019	2N3712
2N2897	BSW54	2N2219A	
2N2903	BFY81	2N2917	2N2639
2N2903A	BFY81	2N2915	2639
2N2904	BSW23	2N2905	EN2905
2N2904A	BFY64	2N2905	2N3645
2N2905	BFY64	EN2905	BCW80
2N2905A	BFY64	2N2905	2N3645
2N2906	BSW24	BSW76	2N2907

POSSIBLE SUBSTITUTION GUIDE

TYPE No.	POSSIBLE SUBSTITUTES		
2N2906A	BSX36	2N2907	2N3645
2N2907	BSX36	BCW76	EN2907
2N2907A	BSX38	BC 161	2N2907
2N2909	2N2221A	2N2243A	2N2193A
2N2910	2N3409	2N3639	
2N2911	2N3766	2N3421	
2N2913	BFY81	2N2643	
2N2914	BFY81	2N2643	
2N2915	BFW39	2N2920	
2N2915A	BFY81	2N2920	
2N2916	BFW40	2N2920	
2N2916A	BFY81	2N2920	
2N2917	BFY81	2N2977	
2N2918	BFY81	2N2977	
2N2919	BFY81	2N2920	
2N2919A	BFY81	BFW39A	2N2920
2N2920	BFY81	2N2920	
2N2920A	BFW40A	2N2920	
2N2921	BC237	MPS56565	TIS98
2N2922	MPS6512	BC238	BC209
2N2923	MPS2923	BC168A	TIS98
2N2924	MPS2924	BC172	2N5135
2N2925	MPS2925	BC172	2N3566
2N2926	MPS2926	BC109	2N5135
2N2927	BFY64	2N3638	BFS95
2N2929	2N1141		
2N2930	2N3427		
2N2936	2N930A		
2N2937	2N930A	2N2639	
2N2938	2N2369A	ZT2938	BSX20
2N2939	2N2193		
2N2940	2N3019	BC160	2N1132
2N2941	2N3501		
2N2944	BC178	2N2945	
2N2944A	2N2945		
2N2945	BC178		
2N2946	2N3964		
2N2953	2N1194	AC153	2N2431
2N2955	2N2635	ASX21	
2N2956	2N2635	BSY18	2SC321
2N2957	2N2635	ASZ21	
2N2958	2N2217	2N2219	BSW54
2N2959	2N697	EN1711	BSW54
2N2960	2N2219A		
2N2961	2N2219A		
2N2966	2N3283	2N2997	
2N2968	2N3250	2N2944	2N2945
2N2969	2N3250	2N2944	2N2945
2N2970	2N3250	2N2944	2N2945
2N2971	2N3250	2N2944	2N2945
2N2972	BFY61	2N2977	
2N2973	BFY81	2N2977	
2N2974	BFW51	2N2979	
2N2975	BFW52	2N2977	
2N2976	BFY81	2N2977	
2N2977	BFY81		
2N2978	BFY81	2N2979	
2N2979	BFY81		
2N2980	2N2060A	BFY83	2N2060A
2N2981	2N2223	BFY83	2N2223
2N2982	2N2223A	BFY83	2N2223A
2N2983	2N5335		
2N2984	2N5682		
2N2985	2N5338		
2N2987	2N5335		

TYPE No.	POSSIBLE SUBSTITUTES		
2N2988	2N5681		
2N2989	2N5337		
2N2990	2N5339		
2N2991	2N5447		
2N2992	2N5479		
2N2993	2N5478		
2N2994	2N5480		
2N2996	2N3283		
2N2997	2N3279		
2N2998	2N3284		
2N2999	2N3283		
2N3009	BSX39	2N3511	2SC321
2N3010	BSX27	2N2369A	BSY21
2N3011	BSX28	EN3011	2N2369
2N3012	BSX29	MM2894	2N2894
2N3013	BSX26	2N3511	EN3013
2N3014	BSX26	BSX48	2N2537
2N3015	BSX30	2N2218	2N2537
2N3019	BFY56	2N2243A	SE6021
2N3020	BFY56	2N1893	2N2243A
2N3021	2N5384		
2N3022	2N5384		
2N3023	2N5384		
2N3024	2N5384		
2N3025	2N5384		
2N3026	2N5384		
2N3033	BF177		
2N3034	BF177		
2N3035	BF107A		
2N3036	BFY45	BFY80	2N3019
2N3037	2N3036	2N1893	
2N3038	2N1893		
2N3043	2N2916		
2N3044	2N2918		
2N3045	2N2914		
2N3046	2N2915		
2N3047	2N2917		
2N3048	2N2913		
2N3053	BSX45	2N2243A	2N3498
2N3054	2N3054A	BUY46	BDY13
2N3055	BDA10	BDY39	2N3713
2N3055U	BDX66	2N3055	
2N3055V	BDX61	2N2297	
2N3056	BSX33	2N2243	2N2243A
2N3056A	BSX33	2N2243A	EN870
2N3057A	BSX33	2N2243A	SE6023
2N3058	2N2944	2N2945	
2N3059	2N2944	2N2945	
2N3060	BSY16	2N2944	2N2945
2N3061	2N2944	2N2945	
2N3062	2N2944	2N2945	
2N3063	2N2944	2N2945	
2N3064	2N2944	2N2945	
2N3065	2N2944	2N2945	
2N3066	MFE2095		
2N3067	MFE2093		
2N3068	MFE2093		
2N3069	2N4220		
2N3070	2N4220		
2N3071	2N4220		
2N3072	BFY64	2N2904	2N2905
2N3073	BFY64	2N2906	2N2907
2N3074	AF106	AF109	2SA230
2N3075	AF200	AF121	2SA230
2N3076	MJ7000		

TYPE No.		POSSIBLE SUBSTITUTES		TYPE No.		POSSIBLE SUBSTITUTES	
2N3077	2N2484			2N3190	2N6184	2N3790	
2N3079	2N5241	2N3846		2N3191	2N4901		
2N3080	2N5241	2N3847		2N3192	2N4902	2N3789	
2N3081	2N2193			2N3193	2N4903	2N3790	
2N3082	3N76	3N79		2N3194	2N6226	2N3790	
2N3083	3N74	3N79		2N3195	2N3789		
2N3084	MFE2093			2N3197	2N3790		
2N3085	MFE2093			2N3198	2N3790		
2N3086	MFE2095			2N3199	2N6192		
2N3087	MFE2094			2N3200	2N6192	2N3740	2N5003
2N3088	MFE2093			2N3201	2N6192	2N3741	2N5003
2N3088A	MFE2094			2N3202	2N5333		
2N3089	MFE2093			2N3203	2N3740	2N5333	
2N3089A	MFE2094			2N3204	2N3741	2N5333	
2N3107	2N2243	2N2243A	SE6020	2N3205	2N6182	2N5333	
2N3108	BFW24	BSY46	2N3568	2N3206	2N6182	2N3740	2N5333
2N3109	BFW25	2N697	SE6021	2N3207	2N3741	2N5333	
2N3110	2N2193	BFY56	2N2243A	2N3208	2N3740		
2N3112	2N5471			2N3209	BSX29	MM2894	2N3576
2N3113	2N5471			2N3210	BSX48	2N4275	
2N3114	BFY57	2N3500	2N5183	2N3211	BSX48	2N4275	
2N3115	2N2221	2N2222	2N4436	2N3217	2N2944	2N945	
2N3116	2N2221	2N2222	2N4437	2N3218	2N2945	2N944	
2N3117	2N930A	BFY77	2N2484	2N3219	2N2945	2N944	
2N3119	2N3501			2N3220	2N5477	2N3767	
2N3120	BFY64	2N2800	EN1132	2N3221	2N5477	2N3767	2N5150
2N3121	BSX36	2N2837	2N2906	2N3222	2N5477	2N3766	2N5150
2N3122	2N2219A			2N3223	2N5479	2N3766	2N5150
2N3125	2N456A	2N3146		2N3224	2N3498	2N3498	2N2905
2N3126	2N456A	2N3146		2N3225	2N3498		
2N3127	AF202	2SA240		2N3226	2N5873	2N4913	D44C5
2N3133	BSV15	2N2904	2N2905	2N3227	2N2369A	2N3011	BSX20
2N3134	BFY64	2N2905	2N3644	2N3232	2N4347	BDY20	2N3055
2N3135	BSX36	EN722	2N2907A	2N3233	2N4347		
2N3136	BCY78	2N2907	2N3133	2N3234	2N5760		
2N3137	BSY58	2N2218	2N3014	2N3235	2N3715	BDY20	2N3055
2N3138	2N5477	2N3766	D44CT	2N3236	2N3716		
2N3140	2N5477			2N3238	2N3716		
2N3146	2N3616	2N456A		2N3239	2N5882	2N3716	
2N3147	2N3616	2N456A		2N3240	2N5631		
2N3153	2N2432			2N3241A	BC14	BC140	2N2222
2N3162	2N3411			2N3242A	BC140	2N2222	2N730
2N3167	2N4901	MJ2267	2N5007	2N3245	2N3244		
2N3168	2N4902	2N3789	2N5007	2N3246	2N930A	2N2484	
2N3169	2N4903	2N3790	2N5007	2N3247	2N930A	2N2484	
2N3170	2N6226	2N3790	2N5007	2N3248	2N2894	BSW25	2N3546
2N3171	MJ2267	2N5007		2N3249	2N2894	BSW25	2N3546
2N3172	2N3789			2N3250	BFX48	EN3250	2N2907A
2N3173	2N3790			2N3250A	2N4121	2N4121	BSW24
2N3174	2N3790			2N3251	BFX48	2N3250	2N4922
2N3175	2N6182	MJ2267	2N5007	2N3251A	2N3250	2N4922	BSW24
2N3176	2N6182	2N3789	2N5007	2N3252	BSY34	2N2218	2N3250
2N3177	2N6182	2N3790	2N5007	2N3253	BSX32	BSX59	BSX45
2N3178	2N6184	2N3790	2N5007	2N3261	BSS10	BSX20	2N2222A
2N3179	2N4901	MJ2267	2N5007	2N3263	2N4002		
2N3180	2N4902	2N3789	2N5007	2N3264	2N4002		
2N3181	2N4903	2N3790	2N3700	2N3265	2N4002		
2N3182	2N6226	2N3790		2N3266	2N4002		
2N3183	2N3789			2N3268	2N337		
2N3184	2N3789			2N3277	2N5471		
2N3185	2N2790			2N3278	2N5471		
2N3186	2N6226	2N3790		2N3279	2N2997	AF239	
2N3187	2N6182	MJ2267		2N3280	2N2997	AF239	
2N3188	2N6182	2N3789		2N3281	2N2996	AF239	
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**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2N3283	2N2996	AF239	
2N3284	2N2996	AF239	
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2N3286	2N2996	AF239	
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2N3288	2N2944	2N2945	
2N3289	2N918	BF200	
2N3290	BF162	BF366	
2N3291	2N918	BF200	
2N3292	2N918	BF200	
2N3293	2N918	BF200	
2N3294	2N918	BF200	
2N3295	2N2217	2N2219	
2N3299	BFY72	2N2218A	2N2537
2N3300	BFY72	2N2219A	2N3643
2N3301	BFX94	2N2219A	2N4436
2N3302	BFX95	2N2222A	2N4437
2N3303	BSX12	BSX59	2N3725
2N3304	BSX20	2N3546	2N2894
2N3307	BF173		2SC464
2N3308	BF173		2SC464
2N3309	2N3553	2N3309A	
2N3311	AD104	ADZ12	2N1146
2N3312	AD104	ADZ12	2N1146
2N3313	AD104	ADZ12	2N1146
2N3314	AD104	ADZ12	2N1146
2N3315	AD104	ADZ12	2N1146
2N3316	AD104	ADZ12	2N1146
2N3317	2N2944	2N2945	
2N3318	2N2944	2N2945	
2N3319	2N2944	2N2945	
2N3320	2N964		
2N3323	AF124	A121	
2N3324	2N3323	AN13	2SA230
2N3325	2N3323	AN13	2SA230
2N3326	2N2218A	2N3567	BSW54
2N3333	2N3287		
2N3337	2N3287	BFY79	2N2883
2N3338	2N3289	BFY79	2N2883
2N3339	2N3288	2N2883	
2N3341	2N2604	2N2605	
2N3342	2N2944	2N2945	
2N3343	2N2944	2N2945	
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2N3346	2N2944	2N2945	
2N3347	2N3350		
2N3348	2N3350		
2N3351	2N3350		
2N3352	2N3350		
2N3375	BLY22	BLY59	
2N3390	MPS6521	BC168	TIS98
2N3391	MPS6515	BC173	TIS98
2N3391A	MPS6520	BC1488	TIS98
2N3392	MPS3392	BC109	2SC458
2N3393	MPS3393	BC167	TIS98
2N3394	MPS3394	BC168A	2SC458
2N3395	BC168A	MPS3395	2SC458
2N3396	BC168	TIS98	2SC458
2N3397	BC168A	TIS98	2SC458
2N3398	BC168A	TIS98	2SC458
2N3399	AF139	2N2996	
2N3401	2N2944	2N2945	
2N3402	MPS6513	BC108	2SC458
2N3403	MPS6515	BC108	2SC458

2N3404	BC337	2N2449	MPSA05
2N3405	BFY50	2N2297	
2N3409	2N3639		
2N3410	2N3639		
2N3411	2N2639		
2N3414	MPS6513	BC338	2N5449
2N3415	MPS6515	BC338	2N5449
2N3416	MPS6515	BC141	BC182
2N3417	BC337	2N5449	SE6020
2N3418	2N5334	BSV64	2N4877
2N3419	2N5335	BSV64	2N4877
2N3420	2N5336	BSV64	2N4877
2N3421	2N5336	BSV64	2N4877
2N3423	BFY84	2N2639	
2N3424	BFY84	2N2639	
2N3425	2N3014		
2N3426	BSX12	2N3303	2N3426
2N3427	2N1377	ASY27	2N1305
2N3428	2N1377	ASY27	2N1305
2N3429	2N5877	2N3713	
2N3430	2N5632	2N3714	
2N3431	2N5634		
2N3439	MJ3201	2N5058	BUY60
2N3440	MJ3202	BUY60	2N3439
2N3341	BUY14	2N3442	2N3738
2N3342	BUY12	BDX11	MJ3010
2N3444	BFX17	BSX61	2N3444
2N3445	2N3715	BDY24	2N3448
2N3446	2N3714	BDY24	2N3448
2N3447	BDY61	2N3715	BDY24
2N3448	2N3716	BDY24	
2N3451	BSW25	2N3546	
2N3465	2N3466		
2N3466	2N3465		
2N3467	BC160	2N2905	BFS95
2N3468	2N3468	2N2905	2N3468
2N3469	2N5337	2N3420	
2N3470	2N6057		
2N3471	2N6059		
2N3474	2N6055		
2N3476	BUY12	BUY56	2N3442
2N3478	BF173	TA2606	
2N3485	BCW76	2N2907	2N2906A
2N3486A	BSX36	2N2907	2N2906
2N3486	BSX36	2N2907	2N2906
2N3486A	BSX36	2N2907	EN2907
2N3487	BDX10	2N3713	
2N3488	BDX10	2N3713	
2N3489	BDX10	2N3713	
2N3490	BDX10	2N3713	
2N3491	BDX10	2N3713	
2N3492	BDX10	2N3713	
2N3493	2N4252		
2N3494	2N2605	2N4928	
2N3495	2N2605	2N4928	
2N3496	2N2605	BSV68	2N3497
2N3497	2N2605	BSV68	2N3497
2N3498	2N697	2N698	BSW66
2N3499	2N5058	BSW66	2N1893
2N3500	2N2243A	BSW67	2N5682
2N3501	2N2243A	BSW67	2N5682
2N3502	2N2905	BC161	EN3502
2N3503	2N2905A	BC161	2N2905
2N3504	2N2907	BSX36	EN3504
2N3505	2N2907A	BSX36	2N2907

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2N3506	2N2989	BSX59	2N3725
2N3507	2N2989	BSX59	2N3725
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2N3509	BSX20	2N2145	
2N3510	BSX26	EN3009	2N2369
2N3511	BSX26	EN3009	2N2369
2N3512		2N2537	2N3015
2N3513	2N2480A	2N2639	2N2640
2N3516		2N2639	
2N3518	2N3046		
2N3520	2N3043		
2N3521	2N2643	2N3043	
2N3522	2N2643		
2N3524	2N2639	2N2640	
2N3527	2N2944	2N2945	
2N3543	BDY61		
2N3544	2N918		
2N3545	2N3798	BSW24	2N2907A
2N3546	BSX26	2N2894	2N3576
2N3547	2N3799	BC177	2N3965
2N3548	BC322	2N3965	MPS6519
2N3549	2N2604	2N2605	BC179
2N3550	2N2944	2N2945	BC179
2N3553	BFY99	BFW47	
2N3554	BSX60		
2N3563	TIS62	BFX73	2N918
2N3564	BFX62	2N918	
2N3565	MPS6514	BC238	2SC485
2N3566	MPS6514	2N5449	BC107
2N3567	MPS6530	D41D4	2N2297
2N3568	BC337	BFY50	2N2297
2N3569	MPS6531	2N6010	BFY50
2N3570	BFY90		
2N3571	BFY90		
2N3572	BFY90	BFX89	2N3570
2N3576	2N3251	BSW25	2N3546
2N3579	2N3799	2N2604	2N2605
2N3580	2N3799	2N2605	
2N3581	2N3799	2N2605	
2N3582	2N3799	2N2605	
2N3583	MJ2251		
2N3585	BDY94	2N3767	
2N3588	AF201	AF121	2SA239
2N3589	2N3738		
2N3590	2N6233		
2N3597	MJ7000	2N4002	2N3767
2N3598	MJ7000	2N3446	2N4002
2N3599	MJ7000	2N3447	2N4002
2N3600	2N918		
2N3605	MPS3646	BSY62	2N5772
2N3605A	BSY63	BSX20	2SC321
2N3606	MPS3646	BSY62	2N5772
2N3606A	BSY63	2N5772	2SC321
2N3607	MPS3646	BSY62	2N5772
2N3611	AUY21	TI3027	2N1536
2N3612	AUY21	ASZ16	2N1536
2N3613	AUY21	TI3027	2N1536
2N3614	AUY21	TI3027	TI3028
2N3615	AUY22	ASZ16	2N456A
2N3616	ASZ15	AUY22	2N456A
2N3617	AUY22	TI3030	ASZ16
2N3618	AUY22	2N456A	2N3146
2N3632	BLY60		
2N3638	2N5447	BFS95	2N4036
2N3638A	2N5447	BFX29	2N2905A

2N3639	TIS53	MPS3639	2N3546
2N3640	TIS54	MPS3640	2N3546
2N3641	MPS6530	2N5449	2N2219A
2N3642	MPS6530	BC337	2N5449
2N3643	MPS6531	2N5449	BSW54
2N3644	BC327	2N5449	BFX29
2N3645	2N4142	BFX29	2N2905A
2N3646	MPS3646	2N4422	BSX20
2N3647	BSX26	2N3303	2N3009
2N3648	BSX26	2N3303	2N3009
2N3659	2N5058		
2N3660	2N3719	D43C3	
2N3661	2N3720	D43C8	
2N3662	BF173	BF200	2N5770
2N3663	BF173	2N5770	2N5363
2N3664	BFX62	2N918	
2N3665	2N5335	BFY56	2N2432
2N3666	BFY56	BE6021	2N2432
2N3667	2N5881	2N3715	
2N3671	BFY64	2N2905	2N3644
2N3672	BSX36	2N2905	2N3638A
2N3673	BSX36	2N2905	2N3638A
2N3675	2N4238	2N4238	D42C7
2N3676	2N4239		
2N3677	2N2944	2N2945	
2N3678	2N3019	2N3568	BSW54
2N3681	2N3570		
2N3683	2N3570		
2N3688	2N3689	2N3690	
2N3689	2N3688	2N3690	
2N3690	2N3688	2N3689	
2N3691	MPS6512	TIS98	2N5825
2N3692	MPS6513	2N6004	BC237
2N3693	2N3694	BSW64	2N2222A
2N3694	2N3693	BSW64	2N2222A
2N3700	2N3019	BSX36	SE6021
2N3701	BSX36	SE6021	BSX47
2N3702	2N3250	BC257A	BC177
2N3703	2N3251	BC177	2SA565
2N3704	2N2222A	BC337	2N2222
2N3705	2N2222A	BC337	MPS3705
2N3706	2N930	BSX75	2N3566
2N3707	BC173	MPS3707	2SC458
2N3708	BC167A	EN4123	2SC458
2N3709	BC167A	EN4123	2SC458
2N3710	BC167A	BC207	2SC458
2N3711	BC167A	EN3904	2SC458
2N3712	BD115	BF337	2N4927
2N3713	BDY39	BDY23	2N3445
2N3714	BDY39	BDY23	2N3445
2N3715	BDY39	BDY23	2N3445
2N3716	BDY39	BDY23	2N3445
2N3719	BSX52	2N5333	BSS44
2N3720	BSX63	2N5333	BSS44
2N3721	MP3731	BC168A	BC182L
2N3722	BSX46	2N3015	BSW54
2N3723	BSX47	2N3015	BSW54
2N3724	MM3724	BSX32	2N3725
2N3724A	2N3725	BSX59	2N3725
2N3725	MM3725	BSX73	BSY34
2N3725A	BFX89	2N5179	2SC707
2N3726	BFX11		
2N3727	BFX11		
2N3730	AU107	AU11	
2N3731	AU106		



**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2N3732	AUY22	AUY28	MPS6530
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2N3734	BF X17	BSW54	2N2219A
2N3736	BSX32	BSX59	2N3725
2N3737	2N3725	BSX59	2N3725
2N3738	BU126	2N3739	
2N3740	BDX14		
2N3742	2N505B	BF227	2N4927
2N3744	2N5346	2N3996	
2N3745	2N5346	2N3996	
2N3746	2N5346	2N3996	
2N3747	2N5347	2N3996	
2N3748	2N5347	2N3996	
2N3749	2N5348	2N3996	
2N3750	2N5348	2N3996	
2N3751	2N5348	2N3996	
2N3752	2N5348	2N3996	
2N3762	2N3996	2N3763	
2N3764	2N2907	2N3486	2N3763
2N3765	2N2907	2N3486A	2N3763
2N3766	2N3766	BDY13	2N5050
2N3767	BDY13	BDY79	2N5050
2N3771	2N5301	BDX41	2N3772
2N3772	AU108	2N5302	BDX40
2N3773	BUY12	BDX50	BUY56
2N3774	2N4234	2N5147	
2N3775	2N4235	2N5147	
2N3776	2N4236	2N5147	
2N3777	2N5679	2N4236	2N4033
2N3778	2N4324	2N5147	
2N3779	2N4235	2N5147	
2N3780	2N4236	2N5147	
2N3781	2N5679	2N5147	2N4236
2N3782	2N4234	2N5147	
2N3783	2N5043	AF239S	2N3783
2N3784	2N5043	AF239S	2N3783
2N3785	AFS239S	2N3783	
2N3789	2N3790	BDX18	2N3792
2N3790	2N3789	BDX18	2N3792
2N3791	2N3789	BDX18	2N3792
2N3792	2N3789	BDX18	
2N3793	MPS6530	BC207	BC168
2N3794	MPS6531	BC167	BC208
2N3798	2N2605	BC179	2N3965
2N3798A	BC322	2N3965	
2N3799	2N2605	BC175	2N3965
2N3799A	BC322	2N3965	
2N3800	2N3350	2N3352	
2N3801	2N3350	2N3352	
2N3802	2N3347	2N3350	
2N3803	2N3350	2N3351	
2N3804	2N3350		
2N3804A	2N3350		
2N3805	2N3350		
2N3805A	2N3350		
2N3806	2N3350		
2N3807	2N3350		
2N3808	2N3350		
2N3809	2N3350		
2N3810	2N3350		
2N3810A	2N3350		
2N3811	2N3350		
2N3811A	2N3350		
2N3825	MPS3398	BC108	BC173
2N3826	MPS3826	2N4994	2N3903

2N3827	MPS3827	2N4995	2N3903
2N3828	MPS6565	BC109	BC207
2N3829	2N3250	2N3964	
2N3830	2N2193	BFX34	BSW66
2N3831	2N2193	BD131	
2N3832	BSY19		
2N3838	BC107	BC171	MPS6565
2N3839	BF X62	2N3570	2N3571
2N3840	2N2945	2N2946	
2N3841	2N2945	2N2946	
2N3842	2N2945	2N2946	
2N3843	MPS6512	2N4400	
2N3843A	MPS6512	2N4400	SE6001
2N3844	MPS6512	2N4400	SE6001
2N3844A	MPS6512	2N4400	2N5830
2N3845	MPS6512	BC109	2N4400
2N3845A	MPS6513	2N4400	SE6001
2N3850	2N3998		
2N3851	2N3998		
2N3852	2N3998		
2N3853	2N3998		
2N3854	MPS6512	2N2903	2N3691
2N3854A	MPS6512	MPS6393	
2N3855	MPS6512	BC238A	2N3903
2N3855A	MPS6512	MPS6393	2N3693
2N3856	MPS6513	BC108B	2N3904
2N3856A	MPS6513	MPS3694	2N3694
2N3858	MPS6512	MPS3693	2N3694
2N3858A	MPS6512	2N5830	2N3693
2N3859	MPS6513	2N3694	MPS3694
2N3859A	MPS6566	2N5830	2N3694
2N3860	MPS6514	2N3694	TIS98
2N3862	2N930		
2N3863	2N3715		
2N3864	2N5758	2N3716	
2N3865	2N3760		
2N3866	BF X55		
2N3867	2N5333		
2N3868	2N5333		
2N3876	2N6274		
2N3877	2N4410	BF178	TIS98
2N3877A	2N4410	TIS98	
2N3878	2N5428	BDY13C	BD124
2N3900	2N5088	MPS6515	TIS98
2N3900A	2N5088	MPS6520	
2N3901	2N5088	MPS6521	BC184L
2N3902	BU105	2N5157	
2N3903	BF195	EN3903	BC237A
2N3904	BC167A	EN3904	BF194
2N3905	BC307A	BCY70	2N3904
2N3906	BC307A	EN3906	BCY70
2N3907	2N2915	BF Y81	
2N3908	2N2916	BF Y81	
2N3910	2N2944		
2N3911	2N2944	2N2945	
2N3912	2N2944	2N2945	
2N3913	2N2944	2N2945	
2N3914	2N2944	2N2945	2N2906
2N3915	2N2944	2N2945	
2N3922	BF X62	BF Y88	
2N3923	BF X98	BF337	2N4927
2N3924	BFW46	BF Y99	2N3553
2N3925	2N3375		
2N3926	BL Y57		
2N3927	BL Y58		

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2N3930 BFX90 2N2605 2N3497  
 2N3931 BFX91 2N4889 2N4358  
 2N3932 BFX62 BF Y88  
 2N3945 2N5334 2N3568  
 2N3946 2N2217 2N2219 BCFY50  
 BC107

2N3947 2N2217 2N2219 A157  
 2N3959 2N4313 2N3960  
 2N3960 BFX62 2N4313 2N3960  
 2N3962 BFW20 BFX37 2N2605  
 2N3963 BFW21 2N2605 2N4249

2N3964 BFW22 BC Y67 2N2605  
 2N3965 BFW23 2N2605 2N4249  
 2N3973 2N4400 2N5449 2N3641  
 2N3974 2N4401 2N5449 2N3642  
 2N3975 2N4400 2N5449 2N3641

2N3976 2N4401 2N5449 2N3642  
 2N3977 2N2944 2N2945  
 2N3978 2N2944 2N2945  
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 2N3995 2N2929 2N1195

2N3996 2N5346  
 2N3997 2N5346  
 2N3998 2N5477  
 2N3999 2N5478  
 2N4000 2N3019

2N4001 2N3500 BSW66 2N4001  
 2N4002 MJ7000  
 2N4003 MJ7000  
 2N4008 2N2944 2N2945  
 2N4013 BSX32 BSX48 2N2222A

2N4014 BSX32 BSX49 2N2219  
 2N4015 BFX11 2N3350  
 2N4016 BFX11 2N3350  
 2N4017 BFX36 2N3350  
 2N4018 BFX36 2N3350

2N4019 BFX36  
 2N4020 BFX36 2N3350  
 2N4021 BFX36 2N3350  
 2N4022 BFX36 2N3350  
 2N4023 BFX36 2N3350

2N4024 BFX36 2N3350  
 2N4025 BFX36 2N3350  
 2N4026 BFX36 BC160 2N1132  
 2N4027 BFX40 2N2906 2N2907  
 2N4028 BFX39 2N2907 2N4355

2N4029 BFX40 2N2907 2N4356  
 2N4030 BFX38 2N2905 2N4354  
 2N4031 BFX40 2N2905 2N4356  
 2N4032 BFX38 2N2905 2N4042  
 2N4033 BFX40 2N4356 2N2905

2N4034 BFX48 2N3250 2N4121  
 2N4035 BFX48 2N3250 2N4922  
 2N4036 MM4036 BFR23 2N2905  
 2N4037 MM4037 BFR24 2N2905  
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2N4045 2N3680  
 2N4046 2N3052 2N2218 BFX17  
 2N4047 2N2193 BFX17 BSW54  
 2N4054 MJ400  
 2N4055 MJ400

2N4056 MJ400  
 2N4057 MJ400  
 2N4058 MPS6522 BC178 2N5086  
 2N4059 MPS6516 BC250 2N5087  
 2N4060 MPS6516 BC258A 2N5086

2N4061 MPS6517 BC258A 2N5086  
 2N4062 MP56518 BC308B 2N5087  
 2N4063 2N3439  
 2N4064 2N3440  
 2N4070 2N3448

2N4072 2N2863  
 2N4073 2N2863  
 2N4075 2N3764 2N3996  
 2N4076 BDY13 2N3996 2SC830  
 2N4077 AD161

2N4078 AD162 2N4078 2S8367  
 2N4082 2N4083  
 2N4104 2N2484  
 2N4106 MP2060 AC153 2SB370A  
 2N4115 2N3996

2N4116 BDY13 2N3996 2SC830  
 2N4117 2N4118 2N4119  
 2N4119 2N4139  
 2N4121 2N3905 BFX48 2N4423  
 2N4122 2N3906 BFX48 2N4423

2N4123 TIS99 EN4123 2N3905  
 2N4124 TIS98 EN4124 2N3905  
 2N4125 2N5447 EN25 2N3905  
 2N4126 2N4061 EN4126 2N3905  
 2N4134 BFX19

2N4135 BFX19  
 2N4137 BFX28 BFX34 2N4275  
 2N4138 BFX34 2N2432  
 2N4140 2N4400 BC338 2N5818  
 2N4141 2N4401 BC338 2N5818

2N4142 2N4402 BC328 2N5819  
 2N4143 2N4403 BC328 2N5819  
 2N4150 2N5537 2N3401  
 2N4207 2N4257 BSW25 2N3546  
 2N4208 2N4258 BSW25 2N3546

2N4209 2N4258 BSW25 2N3546  
 2N4210 MJ7000 2N4002  
 2N4211 MJ7000 2N4002  
 2N4220 2N4220A  
 2N4220A 2N4220

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 2N4222 2N4222A  
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 2N4227 2N4400 BC338 2N5818  
 2N4228 2N4402 BC328 2N5819

2N4231 BDY78 2N5050  
 2N4231A BU Y38 2N3054  
 2N4232 BDY79 2N5051  
 2N4232A BU Y38 2N3054  
 2N4233 BDY79 2N5051

2N4233A BDY72 2N3441  
 2N4234 2N4235 BSS44 2N3720  
 2N4235 2N5333 BSS44 2N3720  
 2N4236 2N5333 BSS44 2N3720  
 2N4237 BFX34 BFX34 2N2297

2N4238 BFX34 BFY50 2N2297  
 2N4239 BF X34 BSW44 2N1893  
 2N4241 AD149 TI3027 2SB471  
 2N4242 TI3027 TI3028  
 2N4243 TI3027 TI3028

TYPE No. POSSIBLE SUBSTITUTES				TYPE No. POSSIBLE SUBSTITUTES			
2N4244	TI3027	TI3028		2N4358	BF X90	2N2605	2N3494
2N4245	TI3027	TI3028		2N4359	BF X37	2N4248	2N2907A
2N4246	TI3027	TI3028		2N4360	2N4343		
2N4247	TI3027	TI3028		2N4387	2N3740		
2N4248	2N5086	2N4058	BC206	2N4388	2N3740		
2N4249	2N5086	2N4058	BC204	2N4389	BCY72	2N3546	
2N4250	2N5087	2N4059	BC206	2N4390	BFR25	2N5058	
2N4250A	BC206	2N4250		2N4393	BSU68		
2N4253	2N4252			2N4395	2N3715		
2N4254	MPS6547	2N4996		2N4396	2N3715		
2N4255	MPS6547	2N4997		2N4398	2N4398		
2N4256	2N3904	2N5772	2N4274	2N4399	2N4398		
2N4257	BCY72	2N3576		2N4400	2N5449	2N3642	BC387
2N4257A	BCY72	2N3576		2N4401	2N5449	2N3643	BC387
2N4258	BCY72	2N3576		2N4402	BC307	2N2904	EN2907
2N4258A	BCY72	2N3576		2N4403	BC307A	2N2904	EN2907
2N4259	2N4252			2N4404	BF R23	2N2905	
2N4260	2N4261			2N4405	BF R23	2N2905	
2N4261	2N4260			2N4407	BSS44	2N5333	
2N4264	BC238A	2N4275	BSX20	2N4409	2N5830	2N4410	
2N4265	BC238A	2N4274	BSX20	2N4410	2N5830	2N4410	
2N4266	BSX20	2N2369		2N4418	2N4264	2N5772	
2N4269	2N2243A			2N4419	2N4264	2N5772	
2N4271	2N5682			2N4420	MPS3646	2N5769	2N3646
2N4272	2N5682			2N4421	MPS3646	2N5769	2N3646
2N4274	BSX90	2N4419	BSX20	2N4422	MPS3646		
2N4275	2N4418	BSX20	2N2369	2N4423	MPS3640	2N4421	2N5771
2N4276	2N4277	2N4283		2N4424	MPS3711	2N4401	BC337
2N4277	2N4276	2N4279	2N4283	2N4425	BC337		
2N4278	2N4279	2N4283		2N4428	BF X55		
2N4279	2N4278	2N4277	2N4281	2N4436	2N5449	BSW64	2N2222A
2N4280	2N4281	2N4283		2N4437	2N5449	BSW64	2N2222A
2N4281	2N4283	2N4279	2N4280	2N4440	2N3632		
2N4282	2N4283			2N4449	2N4275	BSX20	2N2369
2N4283	2N4282	2N4281		2N4450	2N3568	BSW64	2N2222A
2N4286	MPS6515	BC167	2SC458	2N4451	2N4313	BSW25	2N3546
2N4287	MPS6566	BC277	2SC565	2N4452	2N3638	BSW24	2N2907A
2N4288	MPS6518	BC213	2SA565	2N4453	2N4313	BSW25	2N3546
2N4289	2N5086	BC177	2SA565	2N4862	BFR25	2N4390	
2N4290	MPS6533	BC179	2N5447	2N4872		BFY64	
2N4291	MPS6534	BC179	2N5447	2N4873		2SC639	
2N4292	MPS918	BF X59	2N1132	2N4874			
2N4293	MPS918	BC179	TIS62	2N4876	2N4875	2N4875	
2N4294	2N4264	2N4264	BSX20	2N4877			
2N4295	2N4264	BSX20	2N2369	2N4877	BF X34		
				2N4880	2N5401		
2N4296	2N3738			2N4890	BSV16	BF X29	2N3905A
2N4297	2N3738			2N4895	BF X34	BF X34	2N4877
2N4298	2N3739			2N4896	2N4337	BF X34	BSV64
2N4299	2N3739			2N4897	BF X34	BDV64	2N4877
2N4300	2N5336			2N4898	BDX14	2N3740	
2N4301	2N5477			2N4899	BDX14	2N3740	
2N4305	2N5337			2N4900	BDX16	2N3741	
2N4307	2N5337			2N4901	BDX18	2N3789	2N3792
2N4309	2N5337			2N4902	BDX18	2N3789	2N3792
2N4311	2N5337			2N4903	BDX18	2N3789	2N3792
2N4313	2N4423	BSW25	2N3546	2N4904	BDX18	2N3789	2N3792
2N4342	2N4343			2N4905	BDX18	2N3789	2N3792
2N4347	BDX12	BDY74	2N3442	2N4906	BDX18	2N3789	2N3792
2N4348	BDX51	2N3773		2N4907	2N4909		
2N4350	2N4349			2N4909	2N5745		
2N4351	2N4416	2N4416A	2N4381	2N4910	2N4911	BDY78	2N5050
2N4354	BF X39	BFS93	2N4037	2N4911	2N4912	BDY78	2N5050
2N4355	BF X38	BFS93	2N4037	2N4912	2N4911	BDY79	2N5050
2N4356	BF X41	BFS93	2N4037	2N4913	BDX50	2N3442	
2N4357	BF X90	2N2605	2N3494	2N4914	BDX50	2N3442	

TYPE No.	POSSIBLE SUBSTITUTES		
2N4915	BDX50	2N3442	
2N4916	BFX48	BSW24	2N2907A
2N4917	BFX48	BSW24	2N2907A
2N4918	BD132	TIP30	2N6124
2N4919	BD138	2N6125	TIP30
2N4920	BD140	TIP30A	2N6126
2N4921	BD131	TIP29	2N6121
2N4922	BD137	TIP29A	2N6122
2N4923	BD139	TIP29A	2N6123
2N4924	BFY56	2N1893	
2N4925	BFY56	2N1893	
2N4926	BF337	2N4927	
2N4927	BF337		
2N4932	2N5477		
2N4933	2N5477		
2N4934	2N4252		
2N4935	2N4252		
2N4936	2N5449		
2N4943	BSW66	2N1893	
2N4944	2N4252	BC338	2N5818
2N4945	BC337	BC301	2N5817
2N4946	2N5449	BC338	2N5818
2N4950	MJ700		
2N4951	BC337	2N3705	2N5450
2N4952	BC337	2N3704	2N5499
2N4953	BC337	2N4401	2N3643
2N4954	BC338	2N5449	2N4400
2N4960	SE6020	BSW54	2N2219A
2N4961	SE6021	BSW54	2N2219A
2N4962	SE6022	BSW64	2N2222A
2N4963	SE6023	BSW64	2N2222A
2N4964	2N4060	BC179	2N3965
2N4965	2N4058	BC179	2N3965
2N4966	TIS99	BC267	2N4966
2N4967	TIS99	BC209	2N4967
2N4968	TIS99	BC207	2N4966
2N4969	BC337	BC301	2N5817
2N4970	BC337	BC301	2N5817
2N4971	BC328	BC303	2N5818
2N4972	BC328	BC303	2N5818
2N4976	2N4875	TIS39	
2N4994	MPS3693	2N3903	
2N4995	2N3694	EN3904	
2N4996	2N5770	SE3002	SE3005
2N4997	2N5770	SE3002	
2N4998	2N5347		
2N4999	2N6186		
2N5000	2N5348		
2N5001	2N6187		
2N5002	2N5347		
2N5003	2N6186		
2N5004	2N5348		
2N5005	2N5348		
2N5022	2N2386		
2N5023	2N2386		
2N5027	2N5769	2N3646	
2N5028	2N5769	2N3646	
2N5029	2N5772	2N4275	2N2369
2N5030	2N5772	2N4274	BSX20
2N5031	BF169	2N3013	MT1061
2N5032	BF169	2N3013	MT1061
2N5033	2N5265	2N5266	E270
2N5034	2N5877	TIP33	
2N5035	2N5877	TIP33	
2N5036	2N5877	TIP33	2N3055

TYPE No.	POSSIBLE SUBSTITUTES		
2N5037	2N5877	BD131	TIP33A
2N5038			
2N5040	2N5041	BFS95	2N4036
2N5041	BFS45	BFS95	2N4036
2N5042	BFS93	2N4037	
2N5050	BDY79	2N4232	
2N5051	BDY79	2N4232	
2N5052	BU126	2N3739	
2N5053	2N918		
2N5054	2N918		
2N5055	2N3829	2N4313	BSW25
2N5056	2N3829	2N4313	BSW25
2N5057	2N3829	EN2894A	BSW25
2N5066	2N2432		
2N5067	BDY39	2N3716	
2N5068	BDY39	2N3716	
2N5069	BDY39	2N3716	
2N5083	2N3055		
2N5086	BC177	2N4058	2SA565
2N5087	BC179	2N4249	BC259A
2N5088	BC169C	SE4021	BC237B
2N5089	BC169C	BC239C	SE4021
2N5106	2N5399	2N4945	
2N5107	2N5399	2N4945	
2N5126	MPS6539	TIS98	
2N5127	MPS918	TIS98	2N4966
2N5128	2N5220	2N5451	BC338
2N5129	2N5220	2N5451	BC338
2N5130	MPS3563	2N5450	BF X 73
2N5131	2N5223	2N5451	BC207
2N5132	MPS6539	2N5451	
2N5133	MPS2714	2N5449	BC209
2N5134	2N5224	2N4422	BSX20
2N5135	2N5225		
2N5136	MPS3706	BSX33	2N731
2N5137	MPS6560	BC338	2N5818
2N5138	MPS6516	2N4061	2N4250
2N5139	MPS6516	BC308	2N3250
2N5140	MPS6518	2N3250	BSW25
2N5141	2N3829	BSW25	2N3546
2N5142	2N3829	BFS95	2N4030
2N5143	2N3829	BC328	2N5819
2N5144	BSW64	2N2297	
2N5145	BSX59	2N3725	
2N5147	2N6190	2N4031	
2N5148	2N5336	BSX63	BSW10
2N5149	2N6191	2N4033	
2N5150	2N5337	2N3019	
2N5151	2N6190	2N4031	
2N5152	2N5336	BSX63	BSW65
2N5153	2N6191	2N4033	
2N5154	2N5337	2N3019	
2N5155	AU112	2N5325	
2N5157	2SC937		
2N5163	E300		
2N5172	BC237A	2N4400	2N5135
2N5174	BFY45	2N1990	2SC857
2N5175	BFY45	2N1990	2SC857
2N5176	BFY45	2N1990	2SC857
2N5179	BF169	2N3013	MT1061
2N5184	BF178	BF257	
2N5189	BSX45	BSS13	2N3053
2N5190	TIP31	2N6121	SDF345
2N5191	TIP31A	2N6122	BD441
2N5192	TIP31A	2N6123	BD441

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2N6193	TIP32	2N6124	BD442
2N5194	TIP32A	2N6125	BD442
2N5195	TIP32A	2N6126	BD442
2N5201	BF169	2N3013	
2N5202	2N5427		
2N5208	2N3905	2N3906	2N4916
2N5209	BC237	SE4010	BC237A
2N5220	BC237C	BC237	SE4010
2N5219	BC238	EN4124	BC239
2N5220	BC338	2N5131	BC387
2N5221	BC338	2N5143	BC388
2N5222	BC254	2N5770	2N3563
2N5223	BC239B	EN4124	2N3903
2N5224	2N4274	BSX20	2N2369
2N5225	BC338	2N3666	BC387
2N5226	BC338	2N3638	2N3638A
2N5227	EN4126	BC350A	2N3905
2N5228	2N3639	BSW25	2N3542
2N5232	2N5961	2N3565	
2N5232A	BC167A		
2N5236	2N3564		
2N5237	2N5337		
2N5240	BDY97		
2N5241	BU105	2N5157	2SC937
2N5244	2N4922	BSW25	2N3546
2N5245	E304		
2N5246	E305		
2N5247	E304		
2N5248	E304		
2N5249	BC167C	2N5961	2N3565
2N5249A	SE4020		
2N5262	BFX34	BSS14	2N5266
2N5284	2N5346	BDY90	
2N5285	2N5347		
2N5286	2N6188		
2N5288	2N5349	BDY90	
2N5292	2N4313		
2N5293	2N4922	TIP31A	2N6123
2N5294	2N4922	TIP31A	2N6123
2N5295	2N5190	TIP31	2N6121
2N5296	2N5190	2N3054S	TIP31
2N5297	2N5190	TIP31A	2N6122
2N5298	2N5190	TIP31A	2N6122
2N5301	BDX40	AU108	2N3772
2N5302	2N5303	BDX40	2N3772
2N5303	BDX40	AU108	2N3772
2N5309	BC167A	2N5830	2SC458
2N5310	BC167A	2N5961	2SC458
2N5311	BC167B	2N5961	2SC458
2N5312	2N5386		
2N5313	2N5386		
2N5314	2N5386		
2N5316	2N5384		
2N5317	2N5384		
2N5318	2N5384		
2N5320	BSU94	BSS15	2N5320
2N5321	BSS16	BSV93	
2N5322	BSS17	2N4036	
2N5323	BSS18	2N4036	
2N5324	AU112	2N5325	
2N5325	AU112	2N5325	
2N5334	BFX34	BSS14	2N4877
2N5335	BFX34	BSS14	2N4877
2N5354	BC328	MPS3638	2N3638

2N5355	BC328	MPS3638A	2N3638A
2N5356	BC328	MPS3638	*2N3638
2N5357	2N5345	2N5357	
2N5365	BC327	2N4403	2N3638
2N5366	BC337	2N4403	EN2907
2N5367	BC327	2N4403	2N3644
2N5384	2N6186		
2N5385	2N6186		
2N5386	2N5380		
2N5389	2N5388		
2N5404	2N6190	2N5384	
2N5405	2N6192	2N5384	2N5405
2N5406	2N6191	2N5384	
2N5407	2N6193	2N5384	
2N5408	2N6186		
2N5409	2N6188		
2N5410	2N6187		
2N5411	2N6189		
2N5427	2N3441	2N3738	
2N5428	2N3441	2N3738	
2N5429	2N3441	2N3738	
2N5430	2N3441	2N3738	
2N5435		2N5436	
2N5436		2N5435	
2N5438		2N5435	
2N5439		2N5435	
2N5447	BC307	BC328	2N3638A
2N5448	BC307	MPS3638	2N3638
2N5449	2N4401	2N3566	BC327
2N5450	BC327	2N4400	SE6001
2N5451	BC327	2N4401	2N3566
2N5455	BCY72	2N3546	
2N5456	BCY72	2N3546	
2N5457	W5457		
2N5458	W5458		
2N5459	W5459		
2N5460	E270		
2N5461	E271		
2N5462	E271		
2N5463	E270		
2N5489	MJ7201		
2N5490	BD609	BDX10	2N6100
2N5491	BDX73	BDX72	2N6101
2N5492	BD609	BDX70	2N6100
2N5493	BDX73	BDX72	2N6101
2N5494	BD609	BDX70	2N6100
2N5495	BDX73	BDX72	2N6101
2N5496	BD609	BDX70	2N6100
2N5497	BDX73	BDX72	2N6101
2N5527	BR100A		
2N5528	BR100C		
2N5529	BR100E		
2N5530	BR100F		
2N5531	BR101A		
2N5532	BR101C		
2N5533	BR101E		
2N5534	BR101F		
2N5535	BR200A		
2N5536	BR200B		
2N5537	BR201A		
2N5538	BR201B		
2N5555	E114		
2N5559	2N5633		
2N5581	2N2297		
2N5582	2N2297		

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2N5629	BUY12	BDY91	
2N5630	BUY12	BDY91	
2N5631	BUY12	BDY91	
2N5632	BUY12	BDY91	
2N5633	BUY12	BDY91	
2N5634	BUY12	BDY91	
2N5655	BD157	BD215	
2N5656	BD157	BD215	
2N5657	BD157	BD215	
2N5668	E305		
2N5669	E304		
2N5670	E304		
2N5681	BD172	2N3712	
2N5682	BD172	2N3712	
2N5716	E201		
2N5717	E202		
2N5718	E203		
2N5758	BUY12	2N3773	BDX50
2N5759	BUY12	2N3773	BDX50
2N5760	BUY12	2N3773	BDX50
2N5814	BC140	2N2218A	2N3036
2N5815	BC327	2N5819	
2N5816	BC140	2N2218A	2N3036
2N5817	BC327	2N5819	
2N5818	BC140	2N2218A	2N3036
2N5819	BC327	2N5819	
2N5825	BC140	2N2218A	2N3036
2N5827	BC209	MPS6521	
2N5829	2N4260	2N4261	
2N5837	2N5380	2N5386	
2N5845			
2N5845A			
2N5851	2N5852		
2N5852	2N5851		
2N5855	2N2905	MPSU52	
2N5856	2N1613	BSX46	
2N5857	MPSU52	2N4037	
2N5858	BFY56	2N1893	
2N5860	2N5861		
2N5861	2N5860		
2N5864	2N2905	BFR23	
2N5865	2N2905	BFR23	
2N5867	BDX18	2N3789	
2N5868	BDX18	2N3789	
2N5869	BDY91	2N4915	2N3442
2N5870	BDY91	2N4915	2N3442
2N5871	BDX18	2N3789	
2N5872	BDX18	2N3789	
2N5873	BDY91	2N4915	2N3442
2N5874	BDY91	2N4915	2N3442
2N5875	BDX18	2N3789	
2N5876	BDX18	2N3789	
2N5877	BDY91	2N4915	2N3442
2N5878	BDY91	2N4915	2N3442
2N5881	BDX10	2N3055	
2N5882	BDX10	2N3055	
2N5910	BCY72	2N3964	
2N5949	E304		
2N5950	E304		
2N5951	E304		
2N5952	E304		
2N5953	E304		
2N5961	BC107	MPS6566	
2N5962	BC208	2N5136	
2N5963	BC208	2N5136	

2N5974	BD276	BD590	2N6126
2N5975	BD276	BD590	2N6126
2N5976	BD276	BD590	2N6126
2N5977	BDX72	BD609	2N6101
2N5978	BDX72	BD609	2N6101
2N5979	BDX72	BD609	2N6101
2N5980	BD600	2N6134	
2N5981	BD600	2N6134	
2N5982	BD600	2N6134	
2N5983	BDX74	2N6102	MJE1660
2N5984	BDX74	2N6102	MJE1660
2N5985	BDX74	2N6102	MJE1660
2N5986	BD600	2N6134	
2N5987	BD600	2N6134	
2N5988	BD600	2N6134	
2N5989	BDX74	2N6102	MJE1660
2N5990	BDX74	2N6102	MJE1660
2N5991	BDX74	2N6102	MJE1660
2N6003	BC179	MSP6517	
2N6008	BC109	MPS6519	
2N6015	BC177	2N3703	
2N6049	BDY78	2N5050	
2N6054	2N6065	2N2907	
2N6065	2N6064	2N2907	
2N6066	2N6064	2N2907	
2N6067	2N6064	2N2907	
2N6098	BDX70	2N6099	
2N6099	BDX71	2N6100	
2N6100	BDX72	2N6101	
2N6101	BDX73	2N6101	
2N6102	BDX74	2N6102	
2N6103	BDX75	2N6103	
2N6107	BDX78	2N6134	
2N6111	BDX78	2N6134	
2N6121	BD275	2N6123	
2N6122	BD275	2N6123	
2N6123	BD275		
2N6124	BD275	2N6123	
2N6125	BD276	2N6126	
2N6126	BD276		
2N6129	BDX73	2N6101	
2N6130	BDX73	2N6101	
2N6131	BDX73	2N6101	
2N6132	BDX78	2N6134	
2N6133	BDX78	2N6134	
2N6134	BDX78	2N6134	
2N6175	BD215	BD158	2N6177
2N6176	BD215	BD158	2N6177
2N6177	BD215	BD158	
2N6288	BDX73	2N6101	
2NJ50	AF185		
2NJ51	AF185		
2S001	AF178	2N2495	2N332
2S002	ZT22	BFY10	2S102
2S003	ZT22	BFY10	2S102
2S004	ZT23	BFY11	2S103
2S005	ZT24	2S104	2N338
2S012	D44CB	ZT1511	2N389
2S012A	ZT1512		
2S013	2N424		
2S013A	ZT1511		
2S014	D40D7	ZT22	BFY10
2S017	ZT1479	2N497	
2S018	ZT1480	2N498	
2S019	D40D7	ZT1481	ZT270
2S020	ZT1482	ZT92	2N657
2S22	AC128	2N2431	

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2S30	AF 185		
2S31	AF 185	2N410	2N412
2S32	AC128	2N611	2N2431
2S33	AC128	2N2431	2N610
2S34	AC128	2N2431	2N568
2S35	AF 185	2N111	AF137
2S36	AF 185	ASY26	2N112
2S37	AC128	AC132	2N2431
2S38	AC128	2N2431	2N270
2S39	AC128	2N2431	2N115
2S40	AC128	2N2431	ASY27
2S41	AD149	AF134	2N269
2S43	AC128	2N2431	2N640
2S44	AC153	AC128	2S8770
2S45	AF 185	2N409	2N410
2S46	AF 185	AF 128	
2S49	AF 185	AF 137	2N410
2S52	AF 185	2N411	2N412
2S53	AF 185	2N409	2N410
2S54	AC126	2N408	2N410
2S56	AC128	AC153	2N408
2S60A	AF 185	2N412	
2S91	AC117	2N1377	
2S92A	AF 185	2N411	
2S93A	AF 185	2N412	
2S95A	BSX48	2N2369	2S857
2S101	ZT41	2S101	2N726
2S102	ZT42	BFY 10	2S102
2S103	ZT43	BFY 11	2S103
2S104	ZT44	2S104	2N2222A
2S109	AF 185	2N370	AF 136
2S110	AF 185	2N371	2N372
2S112	AF 185	AF 136	2N372
2S131	ZT2205	BSX 20	2N2369
2S141	AF 125	AF 136	AF 130
2S301	BCY32		
2S302	BCY33	BCZ10	
2S303	BCY34	BCZ11	
2S304	BCZ10		
2S321	OC203	2S321	
2S322	OC200	2S322	BCZ10
2S323	OC201	2S323	BCZ11
2S324	OC202	2S324	
2S501	BC109	2N930	
2S502	BC107	MM2484	2S648
2S503	BC107B	MM2484	2S648
2S512	BSX93	2N4275	2N2369
2S701	ZT202		
2S702	ZT203		
2S703	ZT204		
2S731	ZT402		
2S732	ZT403		
2S733	ZT404		
2SA12	OC44	NKT142	2N2614
2SA13	AF127	2N4043	2SA240
2SA14	AF185	AF 132	AF 137
2SA15	AF126	2N641	2SA240
2SA16	AF127	2N4034	2SA240
2SA17	AF185	2N412	2N486
2SA17	OC44	NKT142	2N2614
2SA18	AF185	2N412	2N579

2SA19	AF185	AF 124	2N990
2SA20	AF185	AF 124	2N990
2SA21	AF185	AF 124	2N990
2SA26	ASY32	2N1305	2SB101
2SA28	OC44	NKT142	2N2614
2SA29	AF 124	2N3323	2SA433
2SA30	AF 126	2N641	2SA240
2SA31	AF 127	2N4034	2SA240
2SA32	OC44	NKT142	2N2614
2SA33	OC44	NKT142	2N2614
2SA35	AF 126	2N4034	2SA240
2SA36	AF 185	2N411	2N412
2SA37	AF 126	2N4034	2SA240
2SA38	AF 126	2N4034	2SA240
2SA39	AF 127	2N646	2SA240
2SA40	AF 185	OC44N	2N2614
2SA41	AF 127	2N4034	2SA240
2SA42	AF 131	AF 134	AF 137
2SA43	AF 125	2N1110	2SA156
2SA49	AF 185	2N416	2N483
2SA50	AF 185	2N610	2S32
2SA51	AF 127	2N4034	2SA240
2SA52	AF 185	2N641	2SA240
2SA53	AF 127	2N642	2SA240
2SA54	AF 106	3SA230	
2SA56	AF 106	2SA230	
2SA57	AF 124	2N4035	2SA235
2SA58	AF 124	2N346	2SA235
2SA59	AF 185	2N370	2N624
2SA60	AF 124	2N346	2SA235
2SA64	OC44	NKT142	2N2614
2SA65	ASY27	2N36	2N302
2SA66	ASY27	2N36	2SA65
2SA67	ASY27	2N36	2SA65
2SA69	AF 178	2N2495	2N990
2SA70	AF 118	2N2495	2SA76
2SA71	AF 124	2N2495	2SA235
2SA72	AF 127	2N4035	2SA240
2SA73	AF 127	2N4035	2SA240
2SA74	AF 124	AF 131	AF 185
2SA75	AF 127	2N4035	2SA235
2SA76	AF 126	2N641	2SA240
2SA77	AF 124	2N641	2SA240
2SA78	ASY 75	AF 124	2N990
2SA79	ASY32	2N1305	2SB101
2SA80	AF 124	2N641	2SA240
2SA81	AF 185	2N1634	2N1638
2SA82	AF 185	2N373	AF 136
2SA83	AF 185	2N1634	2N1638
2SA84	AF 185	1634	2N1638
2SA85	AF 124	2N544	AF 136
2SA86	AF 125	2N641	2SA240
2SA89	AF 131	AF 136	2N481
2SA90	AF 131	AF 136	2N499
2SA92	AF 125	2SA156	2N345
2SA93	AF 126	2N641	2SA240
2SA101	AF 127	2N4034	2SA240
2SA102	AF 124	2N4034	2SA240
2SA103	AF 124	2N642	2SA240
2SA104	AF 127	2N642	2SA240
2SA105	AF 178	2N2435	2N299
2SA106	AF 185	AF 124	2N990
2SA107	AF 185	AF 124	2N990
2SA108	AF 125	2N1110	2SA156

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2SA109	AF127	2N4034	2SA240
2SA110	AF126	2N373	2SA240
2SA111	AF125	2N1110	2SA156
2SA112	AF124	2N346	2SA235
2SA113	AF185	OC44N	2N2614
2SA114	AF185	OC44N	2N990
2SA115	AF185	AF124	2N990
2SA116	AF124	2N4035	2SA235
2SA117	AF124	2N2495	2SA235
2SA118	AF178	2N4035	2SA235
2SA121	AF125	2N1110	2SA156
2SA122	AF178	2N1180	2T201
2SA123	AF125	2N1110	2SA156
2SA124	AF124	2N4035	2SA235
2SA125	AF124	2N2495	2SA235
2SA126	AF106		2SA230
2SA127	OC44	NK T142	2N2614
2SA128	AF185	ASY27	2N1305
2SA129	AF185	ASY27	2N1305
2SA130	AF185		
2SA131	AF185		
2SA132	AF185		
2SA133	AF185		
2SA134	AF178		
2SA135	AF178	2N2495	2N2495
2SA136	AF185	2SA52	AFY15
2SA137	AF185	OC44N	2N2614
2SA138	AF185	OC44N	2N2614
2SA139	AF185	OC44N	2N2614
2SA141	ASY26	2N218	2SA55
2SA142	ASY27	2N799	2N135
2SA142A	OC44	NK T142	2N2614
2SA143	AF126	AF185	2N137
2SA144	AF124	2N4035	2SA235
2SA145	AF185	AF130	2N2614
2SA151	AF185		
2SA152	AF185	AF132	AF136
2SA153	AF178	AF134	2N2495
2SA154	AF185	AF132	AF137
2SA155	AF185	AF136	2N384
2SA156	AF185	AF136	2N384
2SA157	AF178	AF134	2N2495
2SA159	AF178	AF134	2N2495
2SA160	AF185	AF124	2N990
2SA161	AF106	2N2495	2SA230
2SA167	AF127	2N410	AF133
2SA168	AF185	AF132	2N135
2SA168A	AF185	AF127	2N397
2SA169	OC44	NK T142	2N2614
2SA170	OC44	NK T142	2N2614
2SA171	OC44	NK T142	2N2614
2SA172	ASY32	2N1305	2SB101
2SA173	ASY32	2N1305	2SB101
2SA174	ASY32	2N1305	2SB101
2SA175	AF178	AF134	2N384
2SA180	AF185	AF131	AF136
2SA181	AF185	AF137	2N427
2SA182	AF185	AF173	2N254
2SA183	AF185	AFY15	2SA52
2SA188	AF185	OC44N	2N2615
2SA189	OC44	NK T142	2N2614
2SA201	AF121	AF185	AF126
2SA202	AF121	AF185	2SA52
2SA203	AF185	AF126	2SA52
2SA204	ASY 32	2N1305	2SB101

2SA205	ASY32	2N1305	2SB101
2SA206	AF185	2N252	2N1305
2SA207	ASY32	2N1305	MA1703
2SA208	ASY26	2N799	2SA155
2SA208H	ASY32	2N1305	MA1703
2SA209	ASY26	2N799	2SA155
2SA209H	ASY32	2N1305	MA1703
2SA210	ASY26	2N799	2SA155
2SA210H	ASY27	2N1193	MA1703
2SA211	ASY26	2N799	2SA155
2SA212	ASY26	2N799	2SA155
2SA212H	ASY32	2N1305	MA1703
2SA213	AF178	2N2495	AF134
2SA214	AF178	2N2495	AF135
2SA215	AF185	AF135	AF137
2SA216	AF178	AF127	2N2495
2SA217	ASY32	2N1305	MA1703
2SA217H	ASY32	2N1305	MA1703
2SA218	AF185	AF126	AF134
2SA219	AF185	AF126	2N990
2SA220	AF185	AF134	AF136
2SA221	AF185	AF126	AF134
2SA222	AF185	AF134	AF136
2SA223	AF185	AF126	AF134
2SA224	AF195	AF134	AF135
2SA225	AF124	2N3323	
2SA226	AF185	AF134	AF135
2SA227	AF178	AF126	2N2495
2SA228	AF118	2N3323	
2SA229	AF139	2N2495	M9031
2SA230	AF139	AF186	M9031
2SA231	AF185	AF126	2N136
2SA234	AF106	AF185	AF190
2SA235	AF105	2N2495	2SA230
2SA236	AF127	AF185	2N990
2SA237	AF185	AF124	2N990
2SA238	AF186	AF2395	
2SA239	AF106	AF190	2SA230
2SA240	AF106	2N2495	2SA230
2SA241	AF118	2N2495	2SA76
2SA242	AF239	AF249	MM5000
2SA243	AF239	AF249	MM5000
2SA244	AF239S	AF239	MM5000
2SA245	AF239S	AF239	MM5000
2SA246	AF106	AF124	2N990
2SA247	AF106	2N3323	
2SA248	ASY32	2N1305	MA1703
2SA250	AF124	2N3323	
2SA251	AF124	2N3323	
2SA252	AF124	2N3323	
2SA254	AF185	AF186	2N1058
2SA255	AC162	2N37	2SA459
2SA256	AF185	2N370	AF135
2SA257	D43C5	AF185	AF134
2SA258	D43C5	AF185	AF134
2SA259	AF185	2N247	2N274
2SA260	AF124	2N3323	
2SA261	AF106	2N3323	
2SA262	AF106	2N3323	
2SA263	AF106	2N3323	
2SA264	AF239	AF249	MM5000
2SA265	AF239S	AF239	MM5000
2SA266	AF124	2N4035	2SA235
2SA267	AF125	2N1110	2SA156
2SA268	AF126	2N641	2SA240



TYPE No.	POSSIBLE SUBSTITUTES		
2SA269	AF127	2N4034	2SA240
2SA270	AF125	2N1110	2SA156
2SA271	AF127	2N4034	2SA240
2SA272	AF127	2N642	2SA240
2SA273	AF126	2N641	2SA240
2SA274	AF127	2N4034	2SA240
2SA275	AF125	2N1110	2SA156
2SA276	AF106	2N3323	
2SA277	ASY32	2N1305	MA1703
2SA278	ASY32	2N1305	MA1703
2SA279	AF346	2N3323	
2SA280	AF346	2N3323	
2SA281	AF346	2N3323	
2SA282	2SA311	ASY27	2N1305
2SA283	2SA312	ASY27	2N1305
2SA284	2SA538	ASY27	2N1305
2SA285	AF185	AF132	AF134
2SA286	AF346	2N3323	
2SA287	AF346	2N3323	
2SA288	AF239		2SA433
2SA289	AF239		2SA433
2SA290	AF239		2SA433
2SA291	AF124	2N3323	
2SA292	AF106		
2SA293	AF126	AF137	2SA240
2SA294	AF106		
2SA295	AF124	2N3323	
2SA296	OC44	2N2614	
2SA297	OC44	2N2614	
2SA298	AF124	2N3323	
2SA304	AF185		
2SA305	AF185	2SA313	2N1305
2SA306	AF124	2N3323	
2SA307	AF124	2N3323	
2SA309	AF249		2SA433
2SA310	AF249S		2SA433
2SA311	AF185	AUY10	2N1305
2SA312	AF185	ASY27	2N1305
2SA313	AF185	AF125	AF134
2SA314	AF185	AF125	AF134
2SA315	AF125	2N1110	2SA156
2SA316	AF185	AF135	2SA316
2SA321	AF127	2N4034	2SA240
2SA322	AF185	AF124	2N990
2SA323	AF124	2N1110	AF135
2SA324	AF125	AF135	2SA156
2SA325	ASY32	2N1305	MA1703
2SA326	ASY32	2N1305	MA1703
2SA327	AF124	2N3323	2SA230
2SA339	AF124	2N3323	2SA230
2SA340	AF124	2N1110	2SA156
2SA341	AF124	2N4035	2SA235
2SA342	AF124	2N2495	2SA235
2SA343	AN13	2N3323	2SA230
2SA344	AF124	2N3323	2SA230
2SA350	AF126	2N641	2SA240
2SA350H	AF124	2N3323	2SA230
2SA352	AF126	2N641	2SA240
2SA353	AF124	2N641	2SA240
2SA353A	AF118	2N3323	2SA230
2SA354	AF124	2N3323	2SA230
2SA354H	AF118	2N3323	2SA230
2SA355	AF124	2N3323	2SA230
2SA355A	AF118	2N3323	2SA230
2SA356	AF124	2N3323	2SA230

TYPE No.	POSSIBLE SUBSTITUTES		
2SA357	AF124	2N3323	2SA230
2SA358	AF118	2N3323	2SA230
2SA359	AF106	2N3323	2SA230
2SA373	AF239	MM5000	
2SA377	AF106	AF190	2SA230
2SA378	AF239	MM5000	
2SA379	AF239S	MM5000	
2SA385	OC44	NKT142	2N2614
2SA400	AF185	AF124	2N990
2SA401	AF106	2N3323	
2SA403	AF106	2N3323	
2SA404	AF106	2N3323	
2SA406	ASY32	2N1305	MA1703
2SA407	ASY32	2N1305	MA1703
2SA408	AF124	2N3323	
2SA409	AF124	2N3323	
2SA410	ASZ21	2N3323	
2SA411	ASZ21	2N3323	
2SA412	AF124	2N3323	
2SA413	AF239	AF254	
2SA414	ASY32	2N1305	MA1703
2SA415	ASY32	2N1305	MA1703
2SA416	ACZ10	2N4033	
2SA417	AF239	AF254	2SA240
2SA419	AF239	AF254	2SA240
2SA420	AF139	2N2244	N9031
2SA421	AF239	AF254	2SA240
2SA422	AF139	2N2244	N9031
2SA427	AF124	2N3323	
2SA428	AF124	2N3323	
2SA434	AF239	AF254	2SA240
2SA435	AF239	AF254	2SA240
2SA436	AF239	AF254	2SA240
2SA437	AF239	AF254	2SA240
2SA438	AF239	AF254	2SA240
2SA446	ASZ21		
2SA447	AF202		
2SA450H	ASZ20	BCY70	
2SA451H	ASZ20	BCY70	
2SA452H	ASZ20	BCY70	
2SA453	AF239S		
2SA454	AF139	2N2244	N9031
2SA455	AF139	2N2244	N9031
2SA456	AF139	2N2244	N9031
2SA457	AF124	2N3323	
2SA458	ASY32	2N1305	MA1703
2SA467	MPSL51	2N3644	
2SA468	AF124	2N3323	
2SA470	AF124	AF124	2N3323
2SA471	AF127	2N642	2SA240
2SA472	AF124	2N3323	
2SA473	BD276	2N6126	
2SA474	2SA472	AF124	2N990
2SA475	AF346	2N3323	
2SA476	AF346	2N3323	
2SA478	ASY32	2N1305	MA1703
2SA479	ASY32	2N1305	MA1703
2SA480	BC347	BD517	
2SA482	MPSU52	2N4036	
2SA495	2SA4959	BC214L	2N4058
2SA496	BD140	2N4920	2SA230
2SA497	2N4940	BFS93	2N4037
2SA498	2SA497	BFS93	2N4037
2SA499	2N4940	BC177	2N3965
2SA500	2N4940	BC177	2N3965

**TYPE No. POSSIBLE SUBSTITUTES**

2SA503	2SA504	BFS93	2N4037
2SA504	BCW92K	BFS95	2N4036
2SA506	AF106	2N3323	
2SA507	AF106	2N3323	
2SA508	AF106	2N3323	
2SA510	BFS90A	BSV68	2N3497
2SA511	2SA510	BSV68	2N3497
2SA512	2SA511	BFS93	2N4037
2SA513	2SA512	BFS95	2N4036
2SA517	AF346	2N3323	
2SA518	AF346	2N3323	
2SA522	BC380	2N3703	2SA565
2SA522A	BC380	2N3703	2SA565
2SA525	AF106	2N3323	
2SA527	D43C5	BFS95	2N4036
2SA528	D43C5	BFS95	2N4036
2SA537	BFX29	2N4405	2SA537
2SA537A	BFX29	2N4405	2SA537
2SA538	40359	OC44	2N2614
2SA539	BC307	2N4061	MPS6517
2SA544	MPSU52	2N4036	
2SA545	MPSL51	2N3644	
2SA546A	BFS93	2N4037	
2SA547	D43C8		
2SA550	BC179	2N3965	
2SA550A	BC177	2N3965	
2SA552	BSW24	2N2907A	
2SA560	BFS93	2N4037	
2SA561	2SA569	BC212L	2N4061
2SA562	BCW37	2N3644	
2SA564	BC307	2N4061	MPS6517
2SA564A	BC307	2N4061	MPS6517
2SA565	D41D7	BFX29	2N2905A
2SA567	BC179	2N3965	
2SA568	MPSL51	2N3644	
2SA569	MPSL51	2N3644	
2SA570	MPSL51	2N3644	
2SA571	D41D4	BFX29	2N2905A
2SA594	BFX29	2N4405	
2SA597	D41D4	BFS95	2N4036
2SA603	BSW24	2N2907A	
2SA604	BSV68	2N3497	
2SA605	BSV68	2N3497	
2SA623	BD276	2N6126	
2SA624	BD276	2N6126	
2SA628	BC307	2N4061	MPS6517
2SA628A	BC307	2N4061	MPS6517
2SA629	BC307	2N4058	MPS6517
2SA645	BD276	2N6126	BD590
2SA646	BD276	2N6126	BD590
2SA647	BD276	2N6126	BD590
2SB16A	AC177	2N1377	MA1703
2SB17A	AC177	2N1377	MA1703
2SB18A	AC177	2N1536	MA1703
2SB20	AD150	2N1536	MA1703
2SB21	AD150	2N1536	MA1703
2SB22	AC152	2N238	2SB156
2SB23	AC165	2N2429	2SB67
2SB25	AZ18	2SB25	AUY22
2SB26	AD148	2N2836	2SB151
2SB27	AD148	2N2836	2N376
2SB28	AD148	AD150	2N351
2SB29	AD148	2N2836	2N351
2SB30	AD148	2N255	2N2836
2SB31	AD148	2N2836	2N256
2SB32	AC151	2N2429	2SB459

**TYPE No. POSSIBLE SUBSTITUTES**

2SB33	AC151	2N2431	2SB459
2SB34	AC151	2N2431	2N1381
2SB37	AC151	2N2431	2SB459
2SB38	AC151	2N2431	2SB459
2SB39	AC151	2N238	2SB459
2SB40	AC151	2N238	2SB459
2SB41	AC131	2N2836	2SB471
2SB42	AD132	2N2065	2SB472
2SB43	AC151	2N238	2SB459
2SB44	AC128	2N2431	2N406
2SB46	AC126	2N2429	2N217
2SB47	AC126	2N2429	AC132
2SB48	AC126	2N2429	2T312
2SB49	AC126	2N2429	2N2431
2SB50	AC126	2N1605	2T315
2SB51	AC128	2N2431	2T322
2SB52	AC128	2N2431	2T324
2SB53	AC128	2N2431	2T383
2SB54	AC128	2N408	2SB43
2SB55	AC151	2N2431	2SB459
2SB56	AC128	2N2431	2N680
2SB56A	AC151	AC128	2N2706
2SB57	AC151	AC126	2N2431
2SB859	AC126	2N2429	AC151
2SB860	AC126	2N2429	2N406
2SB860A	AC151	AC126	2N2429
2SB61	AC151	2N2429	2N680
2SB62	AD139	ASZ16	2N2835
2SB63	AD149	2N2836	2N2835
2SB65	AD151	2N36	2N1394
2SB66	AC126	2N2429	2N2431
2SB66H	AC165	2N2429	2SB67
2SB67	AC153	2N467	2SB222
2SB67A	NK T227	2N1176B	
2SB68	AC122	ASY48	2SB460
2SB69	AUY29	ASZ16	2N1167
2SB73	AC126	AC122	2SB459
2SB74	AC126	2N2429	2N105
2SB75	AC126	2N2429	2N34
2SB75A	AC151	AC122	2SB459
2SB76	AC126	2N2429	2N408
2SB77	AC128	2N2431	2N41
2SB77A	NK T227	2N1176B	
2SB78	AC128	2N2431	2N43
2SB80	AD149	2N2836	AD139
2SB81	AD148	2N2835	2N2564
2SB82	AD148	2N2835	2N2564
2SB83	AD149	2N2836	2N1295
2SB84	AC149	AD150	2N1536
2SB86	AD148	CTP1104	2N1291
2SB87	AD131	OC28	2N387
2SB89	AC128	2N2431	2N1381
2SB89A	AC151	2N2431	
2SB90	AC126	AC170	2N2429
2SB91	AC128	AC132	2N2431
2SB94	AC128	2N2431	2SB459
2SB97	AC126	2N2429	AC125
2SB98	ASY26	2N2431	2SB55
2SB99	AC128	2N2431	2N633
2SB100	ASY26	2N2429	2SA155
2SB101	ASY26	2N2431	2SA155
2SB102	AC128	2N2431	2N188
2SB103	AC128	2N2431	2N190
2SB104	AC128	2N2431	2N188A
2SB105	AD149	2N836	2N241

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2SB106	AD148	OC30	2N352
2SB107	AD148	OC30	2N353
2SB107A	AD166	2N456	2SB471
2SB108	AD149	2N2836	2N2835
2SB109	AD149	2N2836	
2SB110	AC151	2N2429	2N46
2SB111	AC126	2N2429	2N77
2SB112	AC151	2N2429	2N96
2SB113	AC151	2N2429	2N96
2SB114	AC128	2N2431	2N36
2SB115	AC128	2N2431	2N37
2SB116	AC128	2N2431	2N38
2SB117	AC128	2N2431	2N38A
2SB120	AC151	2N2429	2N951
2SB121	AC125	2N398	OC77N
2SB122	ASZ15	AUY28	AUY22
2SB123	ASZ15	2N1533	2SB424
2SB124	ASZ15	AUY22	2N1100
2SB125	ASZ16	AUY21	
2SB126	AD150	2N1536	2SB425
2SB127	ADZ11	2N561	2SB151
2SB128	ASZ18	AUY22	AUY28
2SB128A	ASZ15	2N1533	2SB424
2SB129	AD150	2N1536	2SB425
2SB130	AD148	OC30	2N155
2SB131	AD149	2N2836	ASZ16
2SB131A	AD150	2N1536	2SB425
2SB132	ASZ15	2N1533	2SB424
2SB134	AC126	2N2429	2N82
2SB135	AC126	2N138	2N2429
2SB136	AC128	2N2431	AC122
2SB137	AD149	2N2836	ASZ16
2SB138	AD150	2N1536	2SB425
2SB140	AD149	2N2836	2T3011
3SB141	ASZ15	2N301A	2T3021
2SB142	AD149	2N2836	2T3030
2SB143	AD149	2N669	2T3032
2SB144	AD149	2N2836	2T3032
2SB145	AD149	AD150	2N2836
2SB146	AD149	2N2836	AD150
2SB147	ASZ15	2N1533	2SB424
2SB148	ASZ16	AUY21	ASZ18
2SB149	AD150	2N1536	2SB425
2SB150	2N398	OC77N	2N1176B
2SB151	AUY22	AD138	2N561
2SB152	AD131	OD605	2N157A
2SB153	AC126	AC162	2N2429
2SB154	AC128	AC132	2N408
2SB155	AC128	2N249	2SB370A
2SB156	AC128	2N2431	2N1307
2SB156A	AC121	2N2431	2SB156A
2SB157	AC126	OC59	2N2429
2SB158	AC126	OC59	2N2429
2SB159	AC126	OC60	2N2429
2SB160	AC126	OC60	2N2429
2SB161	AC128	2N2431	2N367
2SB162	AC128	2N2431	2N319
2SB163	AC128	2N241	2N320
2SB164	AC128	2N2431	2N321
2SB165	AC128	AC153	2N323
2SB166	AC128	2N2431	AC153
2SB167	AC152	AC122	AC128
2SB168	AC126	AC122	2N2429
2SB169	AC128	AC122	2N2431
2SB170	AC151	AC122	2N76

2SB171	AC151	AC122	2N81
2SB172	AC128	2N2431	2N505
2SB173	AC126	2N2429	AC125
2SB174	AC128	AC153	2N223
2SB175	AC151	2N2431	2N132
2SB176	AC128	2N2431	2S222
2SB177	ACY77	AC128	2N2706
2SB178	AC152	2N2431	2SB222
2SB178A	ASY80	AC128	2N2706
2SB180	AD148	2N2836	2N301
2SB180A	2N2146	2N1184B	2SB81
2SB181	AD148	AD149	2N307
2SB183	AC126	2N2429	2N132A
2SB184	AC128	2N2431	2N63
2SB185	AC126	2N107	AC128
2SB186	AC126	2N2429	2S32
2SB187	AC126	2N2429	2S32
2SB188	AC128	2N2431	2S32
2SB189	AC128	2N2431	2S32
2SB199	AC128	2N2431	2N138B
2SB200	AC128	2N2431	2SB222
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2SB202	AC128	2N2431	2SB222
2SB203	ASZ15	2N1533	2SB424
2SB204	AD150	2N1536	2SB425
2SB205	ASZ15	2N1533	2SB424
2SB206	ASZ15	2N1533	2SB424
2SB207	ASZ15	2N1533	2SB424
2SB207A	ASZ15	2N1533	2SB424
2SB208	AC124	AC128	AC152
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2SB211	ASZ15	2N1533	2SB424
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2SB213A	ASZ15	2N1533	2SB424
2SB214	ASZ15	2N1533	2SB424
2SB215	AD163	ASZ15	2SB341
2SB216	AD131	AD149	2SB471
2SB217	AD150	2N456	2SB4026
2SB218	AC122	2N61	2N524
2SB219	AC128	2N2431	2N41
2SB220	AC128	2N2431	2N43
2SB221	AC128	2N2431	N524
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2SB224	AC131	2N284	2N524
2SB225	AC117	2N43	2N525
2SB226	AC124	AC153	2N526
2SB227	AC124	2N223	2N527
2SB228	ASZ15	2N1533	2SB424
2SB229	ASZ15	2N1533	2SB424
2SB230	ASZ15	2N1533	2SB424
2SB231	AU105	AU103	2N1906
2SB235	AFZ11	ADZ12	2N1100
2SB240	AD148	OC30	2N68
2SB240A	AD148	OC30	2N141
2SB241	AC135	2N1184	2SB80
2SB241A	AC135	2N1184	2SB80
2SB242	AUY18	AD148	2N1183
2SB242A	AUY18	2N141	CTP1104
2SB243	AC135	2N1184	2SB80
2SB243A	AC135	2N1184	2SB80
2SB244	AC135	2N1184	2SB80

TYPE No.		POSSIBLE SUBSTITUTES		TYPE No.		POSSIBLE SUBSTITUTES	
2SB245	AC135	2N1184	2SB80	2SB336	AC125	2N406	
2SB247	AD133	AD138	ADZ11	2SB337	AD150	2N1536	2SB425
2SB248	AC124	AC153	2N1502	2SB338	AD150	2N1536	2SB425
2SB248A	AD133	AD138	2N457	2SB339	ASZ16	2N1536	2SB425
2SB249	AC128	ASZ18	2N457	2SB340	ASZ15	2N1533	2SB426
2SB250	AD133	ADZ11	2N176	2SB341	ASZ15	2N1533	2SB426
2SB250A	AC117	AC153	2N1245	2SB342	AL103	2N2147	
2SB251	AD133	ADZ11	2N1246	2SB343	AL103	2N2147	
2SB252	AD133	ADZ11	2N1533	2SB345	AC126	AC122	2N2429
2SB252A	AD148	ASZ18	2N1437	2SB346	AC126	AC131	2N2429
2SB253	AC128	ASZ18	2N1263	2SB347	AC126	2N2429	2N406
2SB253A	ASZ15	2N1533	2SB424	2SB348	AC126	2N2429	2N406
2SB254	AC128	AC125	2N2431	2SB349	AC125	2N406	
2SB255	AC128	2N2431	AD162	2SB350	AC128	2N406	
2SB256	AD162	2N2835		2SB351	AD104	2N1100	
2SB257	2SA305	AC107N		2SB352	AD104	2N1100	
2SB258	AD132	2N1100		2SB353	AD104	2N1100	
2SB259	AD132	2N1100		2SB354	AD104	2N1100	
2SB260	AD132	2N1100		2SB361	AD166	2N2832	
2SB261	AC126	2N2429	2N405	2SB362	AD166	2N2832	
2SB262	AC126	AC153	2N407	2SB364	AC128	2N2431	2SB365
2SB263	AC128	2N2431	2N270	2SB364	AC128	AC131	2SB370A
2SB264	AC126	2N2429	2N133	2SB365	AC128	2N2431	
2SB265	ASY26	AC128	2N2706	2SB367	AC262	2N2835	2SB367
2SB271	AC117	2N1377	MA1703	2SB368	AC262	2N2835	2SB367
2SB272	AC117	2N1377	MA1703	2SB370	AC128	2N2706	
2SB273	AC117	2N1377	MA1703	2SB371	AC125	AC122	AC151
2SB274	ASZ15	2N1533	2SB424	2SB372	AC117	2N1189	2SB415
2SB275	AD166	2N2148		2SB373	AC117	2N1189	2SB415
2SB276	AU103	AL103	2N2147	2SB374	AC117	2N1189	2SB415
2SB282	ASZ150	2N1536	2SB425	2SB375	AD166	2N2832	
2SB283	ASZ15	2N1533	2SB425	2SB376	AC128	2N2431	
2SB284	AD150	2N1536	2SB425	2SB377	AC117	2N1189	
2SB285	ASZ15	2N1533	2SB426	2SB378	AC121	AC128	2SB156A
2SB290	ASY26	2N799	2SA155	2SB379	AC121	2N2431	2SB156A
2SB291	ASY26	AC131	2SA155	2SB380	AC117	2N1189	
2SB292	ASY26	2N799	2SA155	2SB381	AC151	AC126	2SB459
2SB292A	AC117	2N1176	NKT237	2SB382	AC117	2N1189	
2SB293	AC128	2N1377	2SB770	2SB383	AC124	AC153	2N1176
2SB294	AC128	2N1377	2SB770	2SB386	AC128	2N2431	
2SB295	ASZ15	2N1533		2SB389	AC107		
2SB302	AF124	AF134	2SA235	2SB390	AB166	2N2832	
2SB303	AC163	AC125	2SB73	2SB391	AUY21	ASZ18	2S339
2SB304	AC117	2N1176	NKT237	2SB392	AC117	2N1189	2SB415
2SB304A	AC117	2N1176	NKT237	2SB393	AC117	2N1189	2SB415
2SB306	2SB425	ACY17	2N1176	2SB394	AC117	2N1189	2SB415
2SB309	AD166	2N2148		2SB395	AC117	2N1189	2SB415
2SB310	AD166	2N2148		2SB396	AC117	2N1189	2SB415
2SB311	AD166	2N2148		2SB400	AC121	AC160	2N406
2SB318	AD166	2N2148		2SB401	AC117	2N1189	2SB415
2SB319	AD166	2N2148		2SB402	AC117	2N1189	2SB415
2SB320	AD166	2N2148		2SB403	AC117	2N1189	2SB415
2SB322	AC107N			2SB407	ASZ16	2N1533	
2SB324	AC120	2N2706		2SB410	AD166	2N2832	
2SB325	AC117	2N1176	NKT237	2SB411	AD166	2N2832	
2SB326	AC117	2N1176	NKT237	2SB413	AD262	2N2835	2SB367
2SB327	AC117	2N1176	NKT237	2SB414	AD262	2N2835	2SB267
2SB328	NK T274	AC128	2N2706	2SB415	AC128	2N2431	
2SB329	NK T274	AC128	2N2706	2SB416	AC125	2N2429	2SB415
2SB330	AC117	2N1176	NKT237	2SB417	AC125	2N2429	2SB415
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2SB332	AD104	2N1100		2SB419	AD148	AD152	
2SB333	AD104	2N1100		2SB425	2SB426		
2SB334	AD104	2N1100		2SB426	2SB425	ASZ16	2N1536
2SB335	AC125	2N406		2SB427	AC117	2N1189	2SB415

TYPE No. POSSIBLE SUBSTITUTES

2SB428	AC117	2N1189	2SB415
2SB430	AD212	2N1100	
2SB431	AC128	2N2431	
2SB432	AU101	2N2832	
2SB433	AD212	2N1100	
2SB434	2SB435	BD590	2N6126
2SB435	2SB434	BD590	2N6126
2SB439	AC169	2N2907	2SB459
2SB440	AC163	AC128	2N506
2SB443A	AC121	AC107N	
2SB443B	AC121	AC107N	
2SB444A	AC121	AC107N	
2SB444B	AC121	AC107N	
2SB445	AD262	2N2835	
2SB446	AD262	2N2835	
2SB447	AU106		
2SB448	AD262	2N2835	
2SB449	ASZ16	2N1536	
2SB457	AC128	2N2431	
2SB457A	AC128	2N2431	
2SB458	AD262	2N2835	
2SB458A	AD262	2N2835	
2SB459	AC125	2N2429	2SB415
2SB460	AC125	2N2429	2SB415
2SB461	ACY17	2N1189	2N2000
2SB462	2SB463		
2SB463	2SB462	AD162	2N2835
2SB464	AD166	2N2148	
2SB465	AD166	2N2148	
2SB466	AD148	2N2835	
2SB467	AD148	2N2835	
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2SB468A	AU106	2N5325	
2SB470A	AC126	2N322	2SB44
2SB471	ASZ18	2N1536	
2SB472	ASZ18	2N1536	
2SB472A	ASZ15	2N1533	
2SB473	AD162	2SB367	2N2835
2SB474	ASZ18	2N1536	
2SB475	AC121	AC128	2N2706
2SB476	ACY17	2N1189	2N2000
2SB482	2SB486	OC44N	2N2614
2SB486	2SB482	OC44N	2N2614
2SB487	AD148	2N2835	2N2564
2SB488	AD148	2N2835	2N2564
2SB492	ACY17	2N1189	2N2000
2SB493	AD160	2N1148B	2SB81
2SB494	AC117	2N1377	2SB770
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2SB495A	AC117	2N1377	2SB770
2SB496	AC117	2N1377	2SB770
2SB497	AC150	2N3323	
2SB504	BFS93	2N2905	
2SB505	BFS93	2N2905	
2SB506	AD166	2N2148	
2SB507	BD276	2N6123	
2SB508	BD276	2N6123	2SB507
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2SB510	BFY10	2N1492	
2SB511	BD591	2N6126	
2SB512	BD592	2N6123	
2SB512A	BD592	2N6123	
2SB513	BD592	2N6123	2SB512
2SB514	BD591	2N6126	
2SB515			2SB514

TYPE No. POSSIBLE SUBSTITUTES

2SB518	BDX18	2N5868	
2SB519	BDX18	2N5868	2SB518
2SB520	BDX18	2N5868	2SB518
2SB523	2N5333	2N3867	
2SB524	2N5333	2N3867	2SB523
2SB525	2N5333	2N3868	2SB523
2SB526	2N5344	2N3868	2SB525
2SB527	2N5345	2N5322	2SB526
2SB528	2N5346	2N5323	2SB527
2SB530	2N5436		
2SB531	2N5435		2SB530
2SB536		RCA30A	2SA745
2SB537		RCA30B	2SB546
2SB538		RCA30C	2SB547
2SB539	2N6248	2N4907	
2SB540	2N6229	2N5742	
2SB541	2N5742		2SA758
2SB546	2N6475		2SB536
2SB547	2N6476		2SB537
2SB550	BD238	2N6467	STD3512
2SC11	ASY29	ASY73	2N1304
2SC12	BFY56	2N2297	2N1613
2SC13	ASY29	2N1304	2N1306
2SC14	ASY23	2N1304	2N1306
2SC15	2N1753	2N1754	2N2219A
2SC16	BC107	2N3566	
2SC16A	BC107	2N3566	
2SC17	BC107	2N3566	
2SC17A	BC107	2N3566	
2SC18	BC107	2N3566	
2SC19	BFX50	2N5264	
2SC20	BFX50	2N5264	
2SC21	BDY39	BDX10	2N3055
2SC22	D42C8	2N2782	
2SC23	D42C8	2N2782	
2SC24	D42C8	2N2782	
2SC27	BFX50	2N2297	
2SC28	BSW66	2N3498	
2SC29	BFX50	2N2297	
2SC30	BFY46	2N1711	
2SC31	BC140	2N2218A	BFY50
2SC32	BFX55	BFY13	BFY50
2SC32A	BFX55	BFY50	2N2297
2SC33	BFX55	BSW54	2N2219A
2SC34	AC181	2N1304	
2SC35	AC181	2N1304	
2SC36	AC181	2N1304	
2SC37	BFY46	2N1711	
2SC38	BFY46	2N1711	
2SC39	BC107	2N3566	
2SC39A	BC107	2N3566	
2SC40	BSW64	2N2221A	
2SC41	BU110	BU123	
2SC42	BUY26	2N5264	
2SC43	BU110	2N1490	2N3445
2SC44	BU110	BOY23	2N3445
2SC45	BFY55	BFY50	2N2297
2SC46	BFX50	2N2193	
2SC47	BFX50	2N2193	
2SC48	BSW66	2N3498	
2SC49	BSW66	2N3498	
2SC50	BU110	AC176	2N2430
2SC51	D40D1	BFY50	2N2297
2SC52	BFY46	2N2219A	
2SC53	BFX55	BSW54	2N2219A

TYPE No. POSSIBLE SUBSTITUTES				TYPE No. POSSIBLE SUBSTITUTES			
2SC54	BSX49	2N4436		2SC136	BSX49	2N4436	D40D1
2SC55	BSX49	2N4436		2SC137	BSX49	2N4436	D40D1
2SC56	BC237	2N3710	MPS6565	2SC138	BSY34	2N3641	
2SC57		2N2784		2SC138A	BSY34	2N3641	
2SC58A	BFY65	2N3649		2SC139	BSY34	2N3641	
2SC59	D40D7	BSW66	2N1893	2SC149	BFY56	2N3712	2SC154
2SC60	ASY28	2N1304		2SC150	BSX46	2N2193	D40D4
2SC61	D40D1	BFY50	2N2297	2SC151	BSX46	2N2193	D40D4
2SC62	BSX49	2N4436		2SC152	BSX54	2N3641	
2SC64	BSX45	2N4231	2N3252	2SC154	BFY80	2N1990	2SC154
2SC65	BFY65	2N3649		2SC170	BC108	2N3391	2SC458
2SC66	BFY65	2N3649		2SC178	ASY28	AC153	2N1304
2SC67	BSX49	2N4436		2SC179	AC181	2N2430	2SC180
2SC68	BSX49	2N4436		2SC180	AC181	2N2430	2SC181
2SC69	D40D8	BSW66	2N1893	2SC181	AC181	2N2430	
2SC70	2SC499	BFY65	2N1990	2SC182	ASY28	AC153	2N1304
2SC73	2N168A	2N1086		2SC183	BF115		
2SC74	BFX55	BFY50	2N2297	2SC184	BF115		
2SC75	2N169	2N293	2T75R	2SC186	BC107	2N3568	2SC458
2SC76	2N169	2N293	2T75R	2SC187	BC107	2N3568	2SC458
2SC77	2N169	2N293	2T75R	2SC188	BSX46	2N2193	2SC708
2SC78	ASY14	2N1109	2N1121	2SC189	BSX46	2N2193	2SC708
2SC79	BF173	2SC464	2N2222A	2SC190	BSX46	2N2193	2SC708
2SC80	BFX73	2N918	EN918	2SC191	2N1074	2N1075	BC107
2SC87	BSY34	2N4436	2SC154	2SC192	2N1074	2N1075	BC107
2SC88	BFY56	2N3712	2SC154	2SC193	2N336	2N337	BC107
2SC89	ASY14	ASY29	2N1304	2SC194	2N1074	2N1075	BC107
2SC90	2N1304	ASY29	2N1304	2SC195	2N1278	2N1279	BC107
2SC91	2N1306	ASY29	2N1304	2SC196	2N1278	2N1279	BC107
2SC92	D44C8	2N2782		2SC197	2N1277	2N1278	BC107
2SC93	D44C8	2N2782		2SC199	BSY34	2N2218	2SC458
2SC94	D44C7	2N2782		2SC200	BFX55	BSW54	2N2219A
2SC97	D40D1	BC140	2N3036	2SC201	BFX55	BSW54	2N2219A
2SC98	BSX49	2N4436		2SC202	BFX55	BSW54	2N2219A
2SC99	BSX49	2N4436		2SC203	BFX49	2N2222	
2SC100	BFX73	2N918		2SC204	BSX49	2N2222	
2SC101A	D44C8	BUY38	2N3054	2SC205	BSX49	2N2222	
2SC103	BDY91	BC107	A157	2SC206	BF184	BF234	2SC460
2SC104	BC347	2N3568	2SC458	2SC210	BSY34	BSX73	2SC479
2SC105	BC169	BC173	MPS6521	2SC211	BSY34	2N2218	2SC479
2SC106	D42C7	2SA472	2SA474	2SC212	BSX45	2N4231	2N3252
2SC107	D42C7	2SB216	2N2782	2SC213	D40D1	2N2782	
2SC108	2SC400	BFY50	2N2297	2SC214	D40D1	2N2782	
2SC109	2SC393	BFY50	2N2297	2SC215	D40D1	2N2782	
2SC112	BSY46	2N2193		2SC216	BSX46	2N2193	2SC708
2SC113	BSX46	2N2193		2SC217	BSX46	2N2193	2SC708
2SC116	BSX46	2N2193		2SC218	BSW66	2N3712	
2SC117	ASY28			2SC220	BSX46	2N2193	2SC708
2SC118	ASY29	2SC117		2SC221	BSX46	2N2193	2SC708
2SC119	ASY29	2SC117		2SC222	BFY56	2N3108	
2SC120	BC140	2N2218A	2SC708	2SC223	D40D1	2N2782	
2SC121	BSY46	2N3036	2SC708	2SC224	D40D1	2N2782	
2SC122	BSY46	2N3036	2SC708	2SC225	D40D1	2N2782	
2SC123	BSY46	2N3036	2SC708	2SC226	BSX46	2N2193	
2SC124	BSY46	2N3036	2SC708	2SC227	BSX46	2N2193	
2SC127	BSY46	2N3036	2SC708	2SC228	BFY56	2N3108	
2SC128	ASY28	2N1302		2SC229	2N2782		
2SC129	ASY29	2N1304		2SC230	BSX349	2N2222A	
2SC130	D40D7	2N2782		2SC231	BSX46	2N2193	
2SC131	BSX49	2N4436	D40D1	2SC232	BSX46	2N2193	
2SC132	BSX49	2N4436	D40D1	2SC233	BSX63	BSW66	2N1893
2SC133	BSX49	2N4436	D40D1	2SC237	BSX49	2N2222	
2SC134	BSX49	2N4436	D40D1	2SC238	BSW54	2N2219	
2SC135	BSX49	2N4436	D40D1	2SC239	BSX49	2N2222	
				2SC247	BFY65	2N1990	

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2SC248 BC107 2N3568 2SC458  
 2SC249 BSX46 2N2193  
 2SC250 BFY12 BF X73 2N918  
 2SC251 BFX73 2N918 EN918  
 2SC251A BFX73 2N918 EN918

2SC252 BFX73 2N918 EN918  
 2SC253 BFX73 2N918 EN918  
 2SC281 BC107A BC182A 2N2921  
 2SC282 BC108 2N3391 2SC458  
 2SC283 BCY65 2N2484 2SC648

2SC284 BSX49 2N2222A A157  
 2SC285 BSW54 2N2219  
 2SC291 D42C5 BSX63 2N1893  
 2SC292 D42C7 BSV64 2N4877  
 2SC293 BFX34 2N4877

2SC297 D42C7 BUY38 2N3054  
 2SC298 D42C8 BDY78 2N5050  
 2SC299 BDY79 2N3054 2N3441  
 2SC300 BSX48 2N2222A BSW64  
 2SC301 BSX48 2N2222A BSW64

2SC302 BSX49 BSW64 2N2222A  
 2SC306 D40D2 BF Y50 2N2297  
 2SC307 D40D2 BF Y50 2N2297  
 2SC308 BSX46 2N2193 2SC708  
 2SC309 BFY56 2N3108

2SC310 D44R BSW66 2N1893  
 2SC313 BC108A 2N3391 2SC458  
 2SC316 BC109 MPS6521 2SC458  
 2SC318 BC107A 2N2921 2SC458  
 2SC319 BSX48 2N2221 BSW54

2SC320 BSW54 2N2219  
 2SC350 BC107B BC182B 2N3568  
 2SC351 BFX73 2N918 EN918  
 2SC352 BSW54 2N2219  
 2SC354 D42C5 BF Y50 2N2297

2SC356 BSW64 2N2222A  
 2SC360 BC107 2N3568  
 2SC361 BC237 2N3710 MPS6565  
 2SC362 BC237 2N3710 MPS6565  
 2SC363 BC239 2N2219 2N2539  
 2SC366 BSY77 2SC499 2N3704

2SC367 2N930  
 2SC368 BC107B 2N3568 BC182B  
 2SC369 BC168 BC183 2SC371  
 2SC370 BC168A MPS6520 2SC458  
 2SC371 BC168A MPS6520 2SC458

2SC372 BC168A MPS6520 2SC458  
 2SC373 BC168A MPS6520 2SC458  
 2SC374 BC168C BC172C BC183C  
 2SC377 BC167A MPS6566 2SC458  
 2SC378 BC167A MPS6566 2SC458

2SC379 BC169 MPS6521 BC184B  
 2SC380 BC167 MPS5566 2SC458  
 2SC381 BC168 MPS5520 2SC458  
 2SC382 BF173 BF224 2SC464  
 2SC382G BF232 BF X73 2N918

2SC382R BF232 BFX73 2N918  
 2SC383 BFX73 2N918  
 2SC384 BF232 BF224 2SC464  
 2SC385 BF232 BF173 2SC464  
 2SC386 BF173 BF224 2SC464

2SC387 BFX59 2SC707 2N918  
 2SC388 BF173 BF224 2SC464  
 2SC389 BF173 BF224 2SC464  
 2SC394 BC167 MPS6566 2SC458  
 2SC395 2SC391

2SC395A BSX48 2N2369  
 2SC396 BSW64 BF X55 2N2222A  
 2SC397 BF185 BF X73 2N918  
 2SC398 BF185 BF125 2SC535  
 2SC399 BF185 BF125 2SC535

2SC400 BC107 2N3568 2SC281  
 2SC401 BC167B MPS6566 2SC458  
 2SC402 BC167B MPS6566 2SC458  
 2SC403 BC171A MPS6566 2SC458  
 2SC404 MPS6566 2SC458 BC167A

2SC405 ASY74 2N1304 2SA255  
 2SC406 ASY74 2N1304 2SA255  
 2SC423 BSW34 2N2219A  
 2SC425 BSW34 2N2219A  
 2SC429 BF173 BF224 2SC464

2SC440 BSW34 2N2219A  
 2SC441 BSW34 2N2219A  
 2SC442 BSW34 2N2219A  
 2SC443 BFX33 BF Y67 2N2217  
 2SC444 BSW34 2N2219A

2SC445 BSW34 2N2219A  
 2SC454 BC148 2N3568 MPS6520  
 2SC456 BSY58 2N218 2SC479  
 2SC458 BC148 2N3568 2SC281  
 2SC460 BC148 2N3568 2SC281

2SC461 BC148 MPS6520 2SC281  
 2SC464 BF173 BF174 BF184  
 2SC465 BF173 BF224 2SC464  
 2SC466 BF173 BF224 2SC464  
 2SC470 BF178 BF140D 2SC856

2SC475 BC179 BC206 MPS6516  
 2SC476 BC179 BC206 2SC475  
 2SC477 BC107 2N3568 2SC281  
 2SC478 BC107 2N2921 2SC458  
 2SC481 2SD237 2SC502 2N2219A

2SC482 2SC485 BF Y50 2N2297  
 2SC484 2SD110 BSW66 2N1893  
 2SC485 2SC489 BSW66 2N1893  
 2SC486 2SC490 2SC498 2N1893  
 2SC487 2SC791 2N3738

2SC488 BU126 2N3739  
 2SC489 2SC485 BDY72 2N3441  
 2SC490 D44C5 2SC486 2N3054  
 2SC491 D44C1 2SC482 2N3054  
 2SC492 BDY25 2N3442

2SC493 2SC497 BDY25  
 2SC494 2SC498 BDY23 2N3445  
 2SC495 BD139 2N4923 TIP29B  
 2SC496 BD139 2N4923 TIP29B  
 2SC497 2SC493 BSW66 2N1893

2SC498 2SC486 BF Y50 2N2297  
 2SC499 2SC500 BF179C  
 2SC500 2SC499 BF179C  
 2SC501 2SC504 BSW54 2N2219A  
 2SC502 2SC481 BSW54 2N2219A

2SC503 2SC504 BF Y50 2N2297  
 2SC504 2SC501 2SC503 2N2297  
 2SC505 BF259 BF338 2SC154C  
 2SC506 BF259 BF338 2SC154C  
 2SC507 BF381 BF381

2SC508 2SC50 BDY79 2N3738  
 2SC509 BF X95 2N3704 2N2222  
 2SC510 2SC13 BSW66 2N1893  
 2SC511 2SC12 BSW66 2N1893  
 2SC512 2SC513 BSW66 2N1893

**TYPE No. POSSIBLE SUBSTITUTES**

**TYPE No. POSSIBLE SUBSTITUTES**

2SC513	2SC512	2SC510	BFY50
2SC514	BF258	BF338	
2SC515	D44R4	2SC485	2N3739
2SC515A	BU126	2N3739	
2SC516	D40D7	BSW66	2N1893
2SC516A	D44R1	BSW66	2N1893
2SC517	D42C7	BDY78	2N5050
2SC518	BDY25	2N437	
2SC518A	BDY25	2N437	
2SC519	BDY25	2N437	
2SC519A	2SC101	BDY25	
2SC520	BDY24	2N3448	
2SC520A	2SC101	BDY25	
2SC521	BDY24	2N3448	
2SC521A	2SC101	BDY23	2N3445
2SC522	2SC525	BDY79	2N5050
2SC523	2SC525	BDY79	2N5050
2SC524	D40C7	2SC525	2N5050
2SC525	D40D4	2SC522	2N5050
2SC526	BF258	BF380	
2SC535	BF232	BF184	BF234
2SC536	BC517	2N3903	
2SC537	BC517	2N3903	
2SC538	BC108	BC108B	BC108A
2SC539	BC319	2N930	MSP6521
2SC541	D40D4	BSW54	2N2219A
2SC542	D40D4		
2SC543	D44C5		
2SC547	D40D4	2SC597	2N2219A
2SC548	D40D1	2SC909	2N2219A
2SC549	D40D4	2SC547	2SC550
2SC550	D44C7	2SC549	
2SC551	D44C1	2SC555	
2SC552	D44C5	2SC555	
2SC553	D40D1	2SC555	
2SC554	D40D1	BSW54	2N2219A
2SC555	2SC551	2SC552	2SC553
2SC556	2N497A		
2SC558	2SC508	BU120	
2SC559	BSW34	2N2219A	
2SC560	BFY56	2N3108	
2SC561	BC108	2N3391	2SC458
2SC562	BF173	BF224	2SC464
2SC563	BF173	BF224	2SC464
2SC567	BFY90	2N3103	MT1061
2SC568	BFY90	2N3103	MT1061
2SC571	D40D1	BSX59	2N3725
2SC572	D42C1	BSX59	2N3725
2SC573	D44C3	BSX59	2N3725
2SC582	D40N3	2N3739	
2SC585	D44C5		
2SC586	BDY25	2N437	2N3442
2SC587	BC319	2N930	MPS6532
2SC588	BSW34	2N2219A	
2SC589	BF258	BF388	
2SC590	BFY56	2N3019	
2SC591	D44C7	2N2782	
2SC592	D42C8		
2SC594	BSY34	2N2219	2SC479
2SC595	BSX48	2N2221	2SC495
2SC596	BSY34	2N2219	2SC479
2SC597	D40D4	BSW54	2N2219A
2SC598	D40D4		
2SC599	D44C5		
2SC600	D44C5		

2SC601	BFX59	2SC707	2N2369
2SC602	BFX73	2N918	EN918
2SC605	BF173	BF224	2SC464
2SC611	BFX59	2SC707	2N2857
2SC612	BFY90	2N3013	2SC280
2SC620	BC337	2N2222A	
2SC621	BSX48	2N2369	2SC857
2SC622	BC1088	2N3391	2SC707
2SC627	BF259	BF258	
2SC631	BC1078	BC182B	2N3904
2SC631	BC257	2N4401	
2SC632	BC108C	BC183C	2N3904
2SC632	BC347C	2N3903	
2SC633	BC107A	BC182A	2N3904
2SC633	BC257	2N5449	MPSA43
2SC634	BC107A	BC182A	2SC633
2SC634	BC347A	2N3903	
2SC635	D40D4		
2SC636	D44C5		
2SC637	D40D1		
2SC638	D44C1		
2SC639	BSX48	2N2369	2SC857
2SC640	BC108C	BC183C	
2SC642	2SC487		
2SC644	BC1678	MPS6566	BC171B
2SC645	BC237	2N3710	MP6565
2SC646	D44C8	BDY23	2N445
2SC647	BDY25	2N437	2N3442
2SC649	BC107A	2N2921	2SC458
2SC650	BC107B	BC182B	2N930
2SC655	BC347B	2N3904	
2SC656	BFX73	2N918	EN918
2SC657	BF173	BF224	2SC464
2SC658	BF173	BF224	2SC464
2SC659	BF173	BF224	2SC464
2SC663	BFX73	2N918	EN918
2SC664	BDY92	2N3448	2N4914
2SC665	BDY25	2N437	2N3442
2SC679	BD158	BD216	
2SC680	BDY79	2N3441	2N3767
2SC680A	BDY79	2N3441	2N3767
2SC682	BF173	BF224	2SC464
2SC683	BF173	BF224	2SC464
2SC684	BFX62	BF366	
2SC685	D40N3	BU120	
2SC685A	D40N3	2N3739	
2SC686	D40N2	BF259	
2SC687	BDY25		
2SC688	D44C5		
2SC689G	BC107A		
2SC690	D44C4		
2SC691	D42C4		
2SC692	D42C5		
2SC696A	BFX34	2N5262	
2SC697A	BDY79	2N3441	
2SC700	D40D4	BSW54	2N2219A
2SC702	D42C1		
2SC703	D44C1		
2SC704	D44C1		
2SC705	BFX73	2N918	EN918
2SC707	BFX73	2N918	EN918
2SC708	BSW54	2N2219	2N3641
2SC708A	BSW54	2N2219	2N3641
2SC709	BC167	2SC458	MPS6566
2SC710	BC167	2SC458	MPS6566



TYPE No. POSSIBLE SUBSTITUTES				TYPE No. POSSIBLE SUBSTITUTES			
2SC711	BC167	2SC458	MPS6566	2SC833		2SC867	40850
2SC711A	BC167	2SC458	MPS6566	2SC838	BC149	2SC458	MPS6520
2SC712	BC168	BC173	2SC712A	2SC839	BC167	MPS6566	2SC458
2SC712A	BC168A	BC173	2SC712	2SC840	D44C8	BDY78	
2SC713	BC167	2SC458	MPS6566	2SC844	BSW53	2N2218A	
2SC714	BC337	2N2222	2N2222A	2SC845	BSW54	2N2219A	
2SC717	BFY86	2N3013		2SC847	BFY44	2N3110	2N2193
2SC727	BFY45	2N1893	2SC857	2SC848	BFY44	2N3110	2N2193
2SC730	D40D4	BSW54	2N2219A	2SC849	BFY44	2N3110	2N2193
2SC732	2SC733	BC184L	2N3707	2SC850	BFY44	2N3110	2N2193
2SC733	2SC732	BC182L	2N3710	2SC851	BDY13	2N3713	D44C8
2SC734	BC107B	2N3508	BC182B	2SC854	BSX59	2N3303	2SC479
2SC735	2SC649	BCW36	2N3704	2SC855	BSX59	2N3303	2SC479
2SC736	BDY23	2N3445		2SC856	BF178	BSX21	2N1990R
2SC737	D44C5			2SC864	BF167	MPS6566	2SC458
2SC738	BFX73	2N918		2SC867	D44R2		
2SC739	BFX73	2N918		2SC868	BFY45	2N1893	2SC857
2SC741	BSY34	2N2219A	2SC479	2SC869	BFY45	2N1893	2SC857
2SC752	2SC505	BSX20	2N2369	2SC870	BC239	BC209	MPS6520
2SC756	D42C6	BSW66	2N1893	2SC871	BC239	BC209	MPS6520
2SC761	BF155	MPSH33	2N4134	2SC890	D40D1		
2SC762	BF366	BF263		2SC891	D42C1		
2SC763	BFX73	2N918	EN918	2SC892	D44C1		
2SC764	BSX48	2N2369	2SC857	2SC893	D42C8	BDY78	
2SC766	BUY46	2N3045	D44C8	2SC894	BC108	BC182A	
2SC767	BUY46	2N3045	D44C8	2SC895		2SC1316	2SC867
2SC769	BUY46	2N3045	D44C8	2SC897	BDY90		
2SC770	BUY46	2N3045	D44C8	2SC898	BDY14	2N3441	2N3767
2SC773	BC167	BCW36	2N3704	2SC899	BC149	2N3707	MPS6520
2SC774	D40D4	BSW54	2N2219A	2SC901	BDY98	BU120	2SC410
2SC775	BSW53	2N2218A		2SC901A	BDY96	BU116	2SC411
2SC776	BSW54	2N2219		2SC908	BSW53	2N2219A	
2SC777	D40D7	BDY78		2SC909	D40D4		
2SC778	BDY13	2N3054		2SC911	D42C4		
2SC780	BSK21	BC394		2SC912	BC108A	BC182A	A157
2SC781	D40D4	BSW54	2N2219A	2SC913	BSX48	2N2369	2SC857
2SC782	2SC783	2N3739		2SC916	D42C8	2N2782	
2SC784	2SC785	BF200		2SC917	BF177	BFX73	2N918
2SC785	2SC784	BF185		2SC926	BFY45	2N1893	2SC857
2SC786	BF395	SE5056	2SC535	2SC935	BDY96	BU116	2SC411
2SC787	BF366	SE3005	2N2857	2SC939	BDY23	2N3445	
2SC788	D44R1	BF259		2SC940	BDY96	BU116	2SC411
2SC789	BD275	2N6123		2SC941	BC168	MPS6520	BC183A
2SC791	2SC642	BDY78		2SC943	BC107	BC182A	2N2222A
2SC792	BDY98	BU116		2SC944	BFY26	2N2483	TIS96
2SC793	2SC556	BU123		2SC947	BFX62	BF366	
2SC795	D40N1	BDY79	2N5050	2SC948	BFX62	BF366	
2SC796	BSX45	2N3725		2SC957	BFX62	BF366	
2SC797	BSX45	2N3725		2SC959	BSW53	2N2219A	
2SC798	BSX46	2N2193	D40D4	2SC979	BSW64	2N2222A	
2SC802	D40D4	BFY50	2N2297	2SC980	BFY26	2N2483	TIS96
2SC803	D40D4	BFY50	2N2297	2SC983	BFY45	2N1893	2SC857
2SC804	BF169	2N3013		2SC990	D42C2		
2SC805	BF169	2N3013		2SC991	BSW53	2N2219A	
2SC815	BCW36	2N3704		2SC992	BSW53	2N2219A	
2SC816	D40D1	BFY50	2N2219A	2SC994	BSW53	2N2219A	
2SC818	BFY56	2N3108		2SC995	BF258	BF382	MPSA42
2SC821	D40D1	BSW54	2N2219A	2SC996	BD158	2N3738	TRS3006
2SC822	D40D1	BSW54	2N2219A	2SC997	BF367	BF167	2SC682
2SC825	BD158	2N3738	TRS3006	2SC998	BSW53	2N2219A	
2SC826	BFY56	2N3108					
2SC827	BFY56	2N3108		2SC1000	BC239	BC209	MPS6520
2SC828	BC167	2N3710		2SC1006	BC319	2N930	MPS6521
2SC829	BC167	BC171	MPS6566	2SC1010	BC110	BC174	2SC856
2SC830	D44C6	BDY78		2SC1012A	BF258	BR338	
2SC831	D45C2			2SC1024	BUY38	2N3054A	

TYPE No. POSSIBLE SUBSTITUTES				TYPE No. POSSIBLE SUBSTITUTES			
2SC1025	BDY72	2N2633	2N3441	2SD111	2SD113	2SD110	
2SC1033	BFY45	2N1893	2SC857	2SD113	2SD111		
2SC1033A	BF258	BF338		2SD114	2SD113		
2SC1047	BFX62	2N2857	2N918	2SD118	BU110		
2SC1056	BF258	BF338		2SD119	BU110		
2SC1061	BD275	2N6123		2SD120	D40D7		
2SC1162	BD169	2SC154C	2SC627	2SD121	D44C7		
2SC1173	BD275	2N6123		2SD124	BD130	2N3055	MJD3055
2SC1212	BD169	2SC154C	2SC627	2SD125	BD130	2N3055	MJD3055
2SC1212A	BD169	2SC154C	2SC627	2SD126H	BU110		
2SD28	D44C6			2SD130	D40N1		
2SD29	D44C8			2SD136	D40N3		
2SD30	AC127	2N2430	2SD96	2SD137	D42C2		
2SD31	AC127	2N2430	2SD96	2SD141	D42C2	BUY43	
2SD32	AC127	2N2430	2SD96	2SD142	D44C2	BUY43	
2SD33	AC127	2N2430	2SD96	2SD143	BUY46		
2SD34	AC127	2N2430	2SD96	2SD144	BD109	2N3054	2SC830
2SD35	AC127	2N2430	2SD96	2SD146	D44C8	BD109	2N3054
2SD36	AC127	2N2430	2SD96	2SD147	BDY13		
2SD37	AC127	2N2430	2SD96	2SD150	D44C5		
2SD38	AC127	2N2430	2SD96	2SD151	BD130	AM291	2N3055
2SD43	AC127	2N2430		2SD152	D42C8	BU110	
2SD43A	AC127	2N2430	2SD96	2SD154	D44C8	BDY13	
2SD44	AC127	2N2430	2SD96	2SD156	D40N1		
2SD45	BU110			2SD157	D40N3		
2SD46	BD130	2N3055	AM291	2SD158	D44R1		
2SD47	BD130	2N3059	2SD46	2SD159	D44R3		
2SD48	D44C8	BUY46		2SD172	BD130	AM291	2N3055
2SD49	D44C8	BUY46		2SD173	BD130	AM291	2N3055
2SD50	D44C8	BD130	AM291	2SD174	D44C6	BUY46	
2SD51	BD130	AM291	2N3055	2SD175	D44C8	BD130	2N3055
2SD53	BD130	AM291	2N3055	2SD176	BD130	AM291	2N3055
2SD54	BD130	AM291	2N3055	2SD178	2SD178A		
2SD56	BU110			2SD178A	2SD178		
2SD57	D44C3	BUY43		2SD180	BD130	AM291	2N3055
2SD58	D44C5	BUY43		2SD182	D40D3	BUY43	
2SD59	BD130	AM291	2N3055	2SD183	D40D7	BUY46	
2SD60	BD130	AM291	2N3055	2SD184	D44C5	BUY46	
2SD61	AC127	ASY38	2SD96	2SD185	D44C8		
2SD62	AC127	2N2430	2SD96	2SD185	AC127	AC179	2N2430
2SD63	AC127	2N2430	2SD96	2SD187	AC127	AC179	2N2430
2SD64	AC127	2N2430	2SD96	2SD189	BU110		
2SD65	AC127	2N2430	2SD96	2SD195	AC127	AC179	2N2430
2SD66	AC127	2N2430	2SD96	2SD196	BUY55		
2SD70	BD109	2N3054	BD124	2SD197	BUY55		
2SD71	BUY46			2SD198	BU111		
2SD73	BD130	AM291	2N3055	2SD226	D44C5	BUY43	
2SD74	BU110			2SD226A	D44C7	BUY46	
2SD75	AC127	2N2430	AC186	2SD234	BUY46	BD589	2N6123
2SD77	AC127	ASY29	2N2430	2SD235	BUY43	BD589	2N6123
2SD78	D42C8	AC127	2N2430	2T64	AC127	2N2430	2SC64
2SD79	D44C8	BUY46		2T65	AC127	2N2430	2SD65
2SD80	BD130	AM291	2N3055	2T66	AC127	2N2430	2SD66
2SD81	BD130	AM291	2N3055	2T67	AC127	2N2430	2N647
2SD82	BD130	AM291	2N3055	2T69	AC127	2N2430	2SD63
2SD83	BD130	AM291	2N3055	2T71	ASY73	2N169	2SC75
2SD84	BU110			2T72	ASY73	2N169	2SC75
2SD90	D44C5			2T73	2N168	2N1058	2SC73
2SD91	D44C8			2T75	2N169	2SC75	
2SD92	D40D4			2T76	ASY75	2N169	2SC76
2SD96	AC187K	AC175K		2T77	2N169	2SC77	
2SD102	BU110			2T78	ASY73	2N1109	2N1121
2SD104	AC127	AC179	2N2430	2T85	AC127	2N2430	2SD63
2SD105	AC127	2N2430	2SD96	2T201	AF178	2N384	2SA122
2SD110	2SD111			2T203	AF178	2N370	2SA124

TYPE No.	POSSIBLE SUBSTITUTES		
2T204	AF178	2N2495	2N384
2T205	AF124	2N384	2SA125
2T205A	AF178	2N2495	
2T311	AC128	2N2431	2SB51
2T312	AC128	2N2431	2SB51
2T313	AC128	2N2431	2SB52
2T314	AC128	2N2431	2SB52
2T315	AC128	2N2431	2SB50
2T321	AC128	2N2431	2SB51
2T322	AC128	2N2431	2SB51
2T323	AC128	2N2431	2SB52
2T324	AC128	2N2431	2SB52
2T383	AC131	2N526	2SB53
2T681	AC127	2N2430	2SD61
2T682	ASY73	2SD62	
2T3011	ASZ16	2N301	2SB14
2T3031	AD149	2N2836	2SB143
2T3032	AD149	2N2836	2SB144
2T3033	AD149	2N301	2SB144
2T3041	AD149	2N2836	2SB145
2T3042	AD149	2N2836	2SB146
2T3043	AD149	2N3836	2SB146
3N71	3N77	3N79	
3N72	3N78	3N79	
3N73	3N79		
3N74	3N79		
3N75	3N79		
3N76	3N79		
3N77	3N71	3N79	3N87
3N78	3N72	3N79	3N88
3N79	3N71	3N72	3N73
3N87	3N77	3N79	
3N88	3N78	3N79	
3N90	3N110	3N111	
3N91	3N110	3N111	
3N92	3N111		
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3N94	3N111	3N108	
3N95	3N109	3N111	
3N100	3N108	3N111	
3N101	3N108	3N111	
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3N106	3N108	3N111	
3N107	3N108	3N111	
3N108	3N111	3N106	3N104
3N109	3N111		
3N110	3N90	3N111	3N114
3N111	3N90	3N91	3N92
3N112	3N108	3N111	
3N114	3N110	3N111	
3N115	3N110	3N111	
3N116	3N111		
3N117	3N110	3N111	
3N118	3N110	3N111	
3N119	3N111		
3N120	3N111		
3N121	3N111		
3N123	3N111		
3N127	3N79		
3N128	3N142		
3N129	3N108	3N111	
3N130	3N108	3N111	

TYPE No.	POSSIBLE SUBSTITUTES		
3N131	3N108	3N111	
3N132	3N108	3N111	
3N133	3N108	3N111	
3N134	3N108	3N111	
3N135	3N108	3N111	
3N136	3N108	3N111	
3N138	3N139	3N153	
3N139	3N138		
3N140	3N141	3N159	
3N141	3N140		
3N142	40486		
3N143	3N148	3N152	
3N148	3N143		
3N152	3N143		
3N153	3N138		
3N154	4067A		
3N159	3N140		
3N160	3N161		
3N161	3N160		
4JD1A	AC128	2N2431	
44T1	AF185		
40022	40050	ASZ16	2N1536
40050	40022	40051	ASZ16
40051	40050	BDX13	2N3715
40080	40081		
40081	40080	40082	
40082	40081		
40084	2N2897	BSX33	2N731
40217	BC107	A157	
40218	BC107		
40219	BC107		
40220	BSW64	2N222A	
40221	BSX20	2N2369	
40222	BSX20	2N2369	
40231	40232	BC107	
40232	40231	BC107	
40233	2N718A	40234	
40234	40233	BC107	
40235	40472	40236	
40236	40235	BF182	
40237	40474	BF183	
40238	40239	40240	
40239	40238	40240	
40240	40238	40239	
40242	40478	BF200	
40243	40478	BF185	
40244	40480	BF185	
40245	40481	40246	
40246	40481	40245	
40250	BUY38	2N3054	
40251	2N3771	BDY20	2N3055
40253	AC128	2N2706	
40254	40051	4022	2N1536
40255	BF258		
40256	BF257		
40261	40487	AF124	2N991
40262	40488	AF124	2N991
40263	40490	40395	2N406
40264	BF337	2N4927	
40269	ACY17	2N1188	
40279	2N3375		
40280	2N4427		
40282	2N3632	40292	
40283	BSW64	2N2222A	
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40291	40290		

**TYPE No. POSSIBLE SUBSTITUTES**

40292	40282		
40294	BFY90	2N2857	
40295	2N2708	BFY90	2N2857
40296	2N3839	BFY90	2N2857
40305	2N3553		
40306	2N3375		
40307	2N3532		
40309	40311	40315	
40310	40314	40324	2N3054
40311	40314	BFY50	2N2297
40312	40316	BUY38	2N3054
40313	40318		
40314	40310	40311	40315
40315	40314	BFY50	2N2297
40316	40312	40324	BUY38
40317	40320	40327	BFY50
40318	40312	40322	BDY72
40319	40362	40326	BFS95
40320	40317	BFY50	2N2297
40321	40327	BUY60	2N3439
40322	40318	2N6235	
40323	40309	BFY80	2N2297
40324	40310	40316	BUY28
40325	2N3715	BDY20	2N3055
40326	40320	BFY50	2N2297
40327	40321	40317	BUY60
40328	2N4240	2N6235	
40340	40341		
40341	40340		
40346	40412	40346V1	BUY60
40346V1	40346		
40346V2	40312		
40347	40348	40347V1	40347V2
40347V1	40347		
40347V2	40347		
40348	40347	40349	40348V1
40348V1	40348		
40348V2	40348		
40349	40348	40348V1	40348V2
40349V1	40348		
40349V2	40348		
40354	40355	BF257	
40355	40354		
40359	40263		
40360	40361	BSW66	2N4001
40361	40360	BFY50	2N2297
40362	40319	BFS95	2N4036
40363	2N3715	BDY20	2N3055
40366	2N2405	40367	BSW66
40367	40367	BFY50	2N2297
40368	2N1486		
40369	2N4914		
40372	2N3054		
40373	2N3441		
40374	2N3583		
40375	2N3879		
40385	2N4063	BUY60	2N3439
40389	40392	2N3053	2N3053
40390	2N3440	BUY60	2N3439
40391	40394	2N4037	BFS95
40392	40389	2N2197	
40394	2N4037	BFS95	2N4036
40395	40263		
40397	40453	BSX33	2N731
40398	40454	BSX33	2N731

**TYPE No. POSSIBLE SUBSTITUTES**

40399	40455	BSX33	2N731
40400	40456	BSX33	3N731
40405	40519	BSX33	2N731
40407	40408	BFX50	2N2297
40408	40407	BSW66	2N4001
40409	2N5053	BSW66	2N4001
40410	2N4036	BFR23	2N4929
40411	2N3715	BDX40	2N3772
40412	40412V1	40412V2	BUY60
40412V1	40412		
40412V2	40412		
40421	2N2147	AL103	2N1906
40439	2N3739	AU106	2N5155
40440	2N3739	AU106	2N5155
40446	40582		
40450	2N3241A		
40451	2N3242A		
40452	2N4074		
40453	2N3242A		
40454	2N3242A		
40455	40398	40399	
40456	40400		
40458	40459	BSX33	2N731
40459	40458	BSX33	2N731
40462	40421	ASZ16	2N1536
40472	40473		
40473	40472		
40474	40237	40480	
40475	40476	40477	
40476	40475	40477	
40477	40476	40475	
40478	40479		
40479	40478		
40480	40474		
40481	40482		
40482	40481		
40487	40488	40261	40489
40488	40461	40487	
40489	40487		
40490	40395	2N2953	
40513	2N5035	40514	
40514	40513		
40517	40518	2N3839	40296
40518	40517	2N3839	40296
40519	40405		
40537	2N5322	40362	BFS95
40538	2N5322	BFS95	
40539	40635	BFY50	
40542	40543		
40543	40542	40392	
40544	40392		
40577	2N3118		
40578	2N3866		
40581	40582		
40582	40581		
40608	2N5018		
40611	40616	BFY50	2N2297
40612	40623	ASZ16	2N1536
40613	2N6121	2N6293	
40618	2N6121	2N6293	

TYPE No.	POSSIBLE SUBSTITUTES
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TYPE No.	POSSIBLE SUBSTITUTES
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40621	2N6122	2N6293	
40622	2N6122	2N6293	
40623	40626	ASZ16	2N1536
40624	2N6122	BDX72	2N6160
40625	40628		
40626	40051	ASZ16	2N1536
40627	2N6122	BDX72	2N6100
40628	40625		
40629	2N6121	2N6293	
40630	2N6122	2N6293	
40631	2N6121	2N6293	
40632	2N6121	BDX72	2N6100
40633	40543		
40634	2N4314	2N4036	BFR23
40635	2N3053	BSW66	2N4001
40636	40363	BDY20	2N3055

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