Thermistors

Mullard

PLATE TYPE.

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Mullard thermistors are temperature-dependent resistors with a negative temperature coefficeint. The resistance of a thermistor changes rapidly with variations of temperature as distinct from voltage dependent resistors whose resistance is related to voltage.

Variations of resistance can be caused by self-heating of the thermistor due to power dissipation, by a change in ambient temperature or by a combination of both these factors.

Mullard plate type thermistors are particularly suited for temperature compensation in transistorised circuits and in applications where an easy and convenient indication of temperature change or measurement is required.

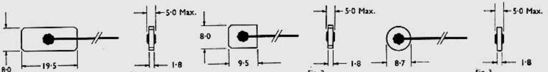


Fig. 1. Fig. 2. Fig. 3.

*All dimensions are in mm.

The connecting leads are of 25 s.w.g. tinned copper wire 45 mm long.

NOTES. The 'B' factor is used to determine the resistance at any arbitrary temperature using the formula:

$$\log_{10} R_1 = \log_{10} R_2 + \frac{B}{2{\cdot}303}\left(\frac{T_2 - T_1}{T_2 T_1}\right)$$

where R_1 is the resistance at an absolute temperature of T_1 and R_2 is the resistance at an absolute temperature of T_2.
Absolute temperature (°K) = 273 + temperature (°C)

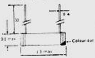
ABREVIATED DATA

Type Number	Resistance at 25°C (Ω)	'B' Factor (°K)	Max. Dissipation (p max.)	Resistance at p max. (Ω)	Current at p max. (A)	Diagram	Colour Code
VA1037	1·10 ± 0·22	2650 ± 5%	1·0	0·2	2·2	Fig. 1	—
VA1057	2·20 ± 0·44	2650 ± 5%	1·0	0·25	2·0	Fig. 2	—
VA1033	4·0 ± 0·8	2800 ± 5%	1·0	0·3	2·0	Fig. 3	Red
VA1053	8·0 ± 1·6	2800 ± 5%	1·0	0·65	1·25	Fig. 3	Violet
VA1034	50 ± 10	3300 ± 5%	1·0	3·0	0·6	Fig. 3	Yellow
VA1040	130 ± 25	4400 ± 5%	1·0	3·0	0·6	Fig. 3	White
VA1039	500 ± 100	5200 ± 5%	1·0	7·0	0·4	Fig. 3	Green
VA1038	1300 ± 260	5700 ± 5%	1·0	12	0·3	Fig. 3	Blue

ROD TYPE.

STANDARD RANGE—MAXIMUM DISSIPATION 0·6 WATT.

FIG. 1—STANDARD RANGE



Type Number	Resistance at 25°C (Ω)	'B' Factor	At Max. Dissipation: Resistance (Ω)	At Max. Dissipation: Current (mA)	Colour Code
VA1064	150 ± 30	1750 ± 5%	30	140	Brown
VA1065	470 ± 94	2400 ± 5%	60	100	Grey
VA1046	1500 ± 300	3150 ± 5%	85	85	Yellow
VA1047	2200 ± 440	3300 ± 10%	85	85	Red
VA1066	4700 ± 940	4000 ± 5%	120	70	Orange
VA1055	15k ± 3k	4250 ± 5%	240	50	Green
VA1056	47k ± 9·4k	5200 ± 5%	375	40	Blue
VA1067	150k ± 30k	5400 ± 5%	970	25	White

Resistance values given in the tables are for 25°C, but the resistance at other ambient temperatures may be calculated from this value and the "B" factor using the formula:

$$\log_{10} R_1 = \log_{10} R_2 + \frac{B}{2{\cdot}303}\left(\frac{T_2 - T_1}{T_2 T_1}\right)$$

where R_1 is the resistance at an absolute temperature of T_1

and R_2 is the resistance at an absolute temperature of T_2

Absolute temperature (°K) = 273 + temperature (°C)