

APPROVAL SHEET

Product Name : Metal Film Precision leaded Resistor
Part No. : TMC
Description : Size 0318~1550

Metal Film Precision leaded Resistor - TMC Series

Applications

- Telecom.
- Measuring and Calibration Equipment.
- Industrial Process Control Systems.
- Audio and Video.



Features

- High thermal conductivity and specific gravity roc
- Power Rating : 0.125W~3W.
- Precision tolerance tight to $\pm 0.05\%$.
- Superior electrical TCR performances narrowed to $\pm 5 \text{ ppm}/^{\circ}\text{C}$.
- Epoxy coating, precision metal film, Lead (Pb)-free and RoHS compliant.

Part Number Explanation

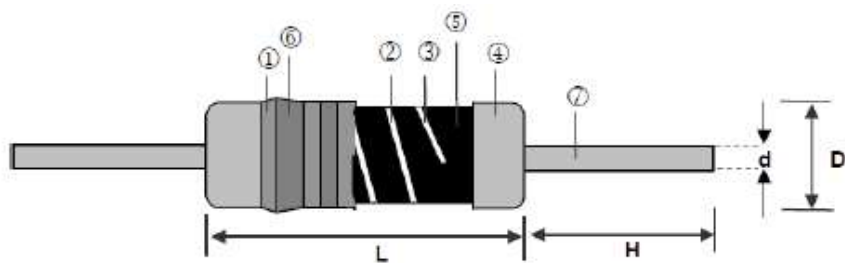
TMC	0623	B	V	1001	A	C	S
Product	Size (Inch)	Tolerance	Rated Power	Resistance	Packaging	TCR (PPM/ $^{\circ}\text{C}$)	Functional
Metal Film Precision leaded Resistor	0318 0623 0932 1145 1550	A : $\pm 0.05\%$ B : $\pm 0.1\%$ C : $\pm 0.25\%$ D : $\pm 0.5\%$ F : $\pm 1.0\%$	R : 3W S : 2W T : 1W U : 1/2W V : 1/4W F : 3/5W G : 2/5W W : 1/8W	R100=0.1 Ω 0010=1 Ω 1000=100 Ω 2201=2K2 Ω 1001=1K Ω 1004=1M Ω	A : Ammo B : Bulk T=Tape & Reel	S : ± 5 B : ± 10 N : ± 15 C : ± 25 D : ± 50 E : ± 100 O : Special	S= Standard

Standard Electrical Specifications

Type	Power Rating at 70°C	Max. RCWV	Max. Overload Voltage	Temperature Coefficient (TCR; ppm/°C)	Resistance Range				
					±0.05%	±0.1%	±0.25%	±0.5%	±1%
TMC0318	1/8W	200V	400V	±15	-	10Ω – 1MΩ		10Ω – 4.99MΩ	
				±25 ±50		10Ω – 1MΩ		10Ω – 10MΩ	
TMC0623	1/4W	250V	500V	±5 ±10	10Ω – 1MΩ				
				±15 ±25	10Ω – 1MΩ		10Ω – 10MΩ		
TMC0932	1/2W	350V	700V	±5 ±10	10Ω – 1MΩ				
				±15 ±25	10Ω – 1MΩ		10Ω – 10MΩ		
TMC1145	1W	400V	1000V	±15	-	10Ω – 1MΩ		10Ω – 4.99MΩ	
				±25 ±50		10Ω – 1MΩ		10Ω – 10MΩ	
TMC1550	2W	500V	1000V	±15	-	10Ω – 1MΩ		10Ω – 4.99MΩ	
				±25 ±50		10Ω – 1MΩ		10Ω – 10MΩ	

High Power Rating Electrical Specifications

Type	Power Rating at 70°C	Max. RCWV	Max. Overload Voltage	Temperature Coefficient (TCR; ppm/°C)	Resistance Range				
					±0.05%	±0.1%	±0.25%	±0.5%	±1%
TMC0318	1/4W	200V	400V	±15	-	10Ω – 1MΩ		10Ω – 4.99MΩ	
				±25 ±50		10Ω – 1MΩ		10Ω – 10MΩ	
	2/5W	250V	500V	±15	-	10Ω – 1MΩ		10Ω – 4.99MΩ	
				±25 ±50		10Ω – 1MΩ		10Ω – 10MΩ	
TMC0623	1/2W	300V	600V	±5 ±10	10Ω – 1MΩ				
				±15 ±25	10Ω – 1MΩ		10Ω – 10MΩ		
	3/5W	350V	700V	±15	-	10Ω – 1MΩ		10Ω – 4.99MΩ	
				±25		10Ω – 1MΩ		10Ω – 10MΩ	
TMC0932	1W	400V	800V	±5 ±10	10Ω – 1MΩ				
				±15 ±25	10Ω – 1MΩ		10Ω – 10MΩ		
TMC1145	2W	500V	1000V	±15	-	10Ω – 1MΩ		10Ω – 4.99MΩ	
				±25 ±50		10Ω – 1MΩ		10Ω – 10MΩ	
TMC1550	3W	500V	1000V	±15	-	10Ω – 1MΩ		10Ω – 4.99MΩ	
				±25 ±50		10Ω – 1MΩ		10Ω – 10MΩ	



- ① Insulation Coating (Epoxy resin)
- ② Trimming Line
- ③ Ceramic Core (Alumina ceramic)
- ④ Electrode Cap (Tinned iron cap)
- ⑤ Resistor Layer (Nickel alloy)
- ⑥ Marking (Epoxy)
- ⑦ Lead Wire (Tinned annealed copper wire)

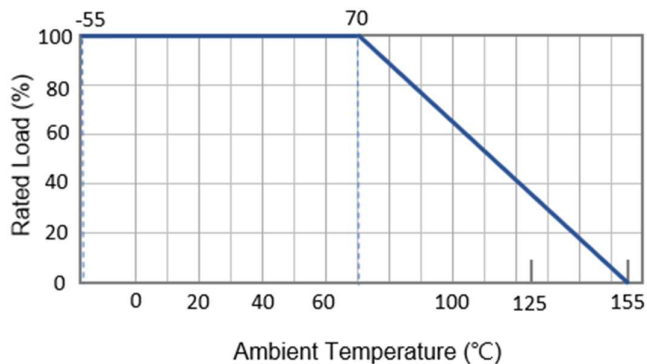
Dimensions

Unit : mm

Type	L	D	H	d	Weight(g) (1000pcs)
TMC0318	3.3±0.5	1.8±0.3	29±2.0	0.45±0.03	90
TMC0623	6.3±0.5	2.3±0.3	28±2.0	0.55±0.03	150
TMC0932	9.0±0.5	3.2±0.5	26±2.0	0.60±0.03	350
TMC1145	11.5±1.0	4.5±0.5	35±2.0	0.78±0.03	770
TMC1550	15.5±1.0	5.0±0.5	32±2.0	0.78±0.03	1040

Derating Curve

Operating Temperature Range: -55°C to +155°C



Environmental Characteristics

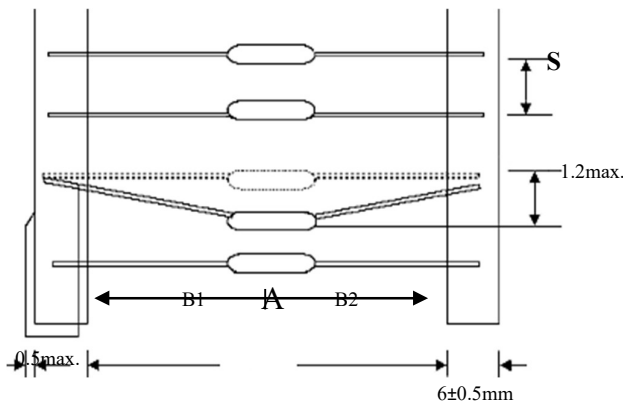
Test Item	Test Method	Requirements
Short Time Overload	RCWV*2.5 or Max. overload voltage for 5 seconds	$\pm 0.25\%$
Insulation Resistance	Apply 100VDC for 1 minute	$>1000M\Omega$
Endurance	$70\pm 2^{\circ}\text{C}$, Max. working voltage for 1,000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"	$\pm 0.2\%$
Damp Heat with Load	$40\pm 2^{\circ}\text{C}$, 90~95% R.H. Max. working voltage for 1,000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"	$\pm 0.3\%$
Solderability	$245\pm 5^{\circ}\text{C}$ for 3 seconds	90% min. Coverage
Dielectric Withstanding Voltage	Apply Max. Overload Voltage for 1 minute	By Type
Temperature Coefficient	Resistance value at room temperature and room Temperature+ 100°C	By Type
Pulse Overload	4 times RCWV for 10000 cycles with 1sec "ON" and 25 sec "OFF"	$\pm 0.75\%$
Resistance To Solvent	Trichroethane for 1 min. with ultrasonic	No deterioration of coatings and markings
Terminal Strength	Direct Load for 10 sec. In the direction off the terminal leads	Tensile: $\geq 2.5\text{kg}$
Shelf life	12 months at room temperature $25\pm 3^{\circ}\text{C}$, 80%RH Max.	$\Delta R = \pm 0.1\%$

- Reference Standards: MIL-STD-202, JIS-C 5201-1
- Storage Temperature: $25\pm 3^{\circ}\text{C}$; Humidity $< 80\%\text{RH}$

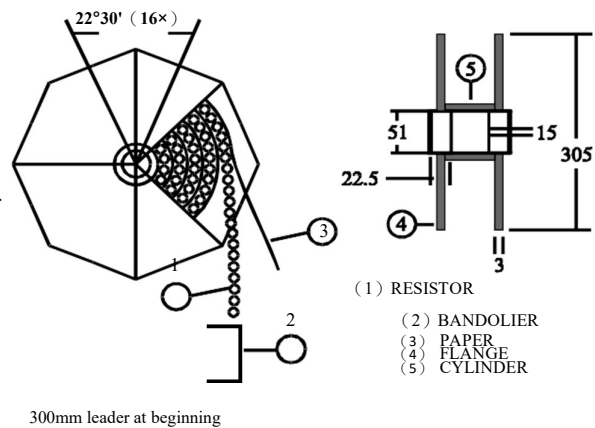
■ Taping/Packing Specifications

Standard Type (Reel & Ammo)

Packing Methods



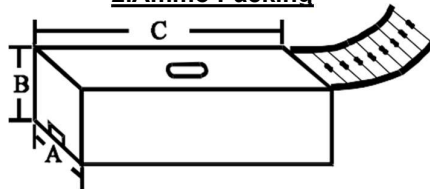
1. Reel Packing



Unit: mm

Packaging Type	Packing Methods			Reel Packing Methods	
	A	B1-B2 Max	S	Across Flange (A)	Qty
0318	52±1	1.2	5	72	5,000
0623	52±1	1.2	5	72	5,000
0932	52±1	1.2	5	72	2,500

2. Ammo Packing



Unit: mm

Packaging Type	Packing Methods			Ammo Packing Methods			
	A	B1-B2 Max	S	A	B	C	Qty
0318	26±1	1.0	5	80	75	264	5,000
0623	26±1	1.0	5	80	105	264	5,000
0932	52±1	1.2	5	80	46	264	1,000
1145	73±1	1.5	5	103	82	265	1,000
1550	73±1	1.5	10	103	96	265	1,000