Data Sheet for Precision Resistors

Thermistor PTC resistor (metal foil) — Series TM

- Metal foil resistor with excellent long term stability
- Resistance range from 5Ω..1kΩ
- Resistance tolerances up to ±0.5% @0°C
- Temperature coefficients up to 6590ppm @0°..100°C
- Linear temperature characteristics
- Quick response time
- Customized TCR (on request)

Electrical Specification	TMA 1	TMA 2	TMB 1	TMB 2
Resistance range	5Ω..100Ω	5Ω..200Ω	5Ω..500Ω	5Ω..1kΩ
Resistance tolerance @ 0°C	±0.5%..±5%			
Power rating @ 70°C	0.125W	0.25W	0.125W	0.25W
Max. working voltage	250V	300V	250V	300V
TCR-rate	+4250ppm±1%/°C @0°..100°C		+6040ppm±1%/°C @0°..25°C +6220ppm±1%/°C @0°..50°C +6590ppm±1%/°C @0°..100°C	
Working temperature range (max.)	-25 °C up to +125 °C			

Mechanical Specification	
Resistance technology / material	Metal foil
Housing material	Epoxy dipped
Connections	Cooper tinned

Parameters	Test Conditions	Specification ΔR
Short time overload	2.5 x rated voltage, 5 sec.	±0.03%
Life span (biased)	70°C, rated power, 90 min. on 30 min off, 1000 h	±0.03%
High temperature / humidity	+65°C..-10°C, 90..98% RH rated voltage, 10 cycles, 240h	±0.02%
Temperature shock	-25°C (30 min.), +25°C (5 min.), +125°C (30 min), 5 cycles	±0.03%
High temperature exposure	+125°C, no load 1000 h	±0.1%
Solderability	235°C, 2 sec.	Coverage > 75%
Resistance to soldering heat	350°C, 3 sec.	±0.01%
Isolation resistance	100 VDC, 1 min.	>10.000MΩ
Dielectric strength	Atmo. Pres.: 300 VAC, 1 min.	±0.03%
Shock	50G, 11 ms, halfsine, X, Y, Z each 3 shocks	±0.03%
Vibration	20G, 10Hz zu 55Hz zu 10Hz, 1 min. each X, Y, Z 2h	±0.03%

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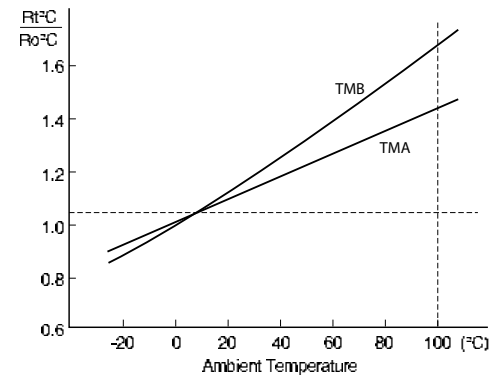
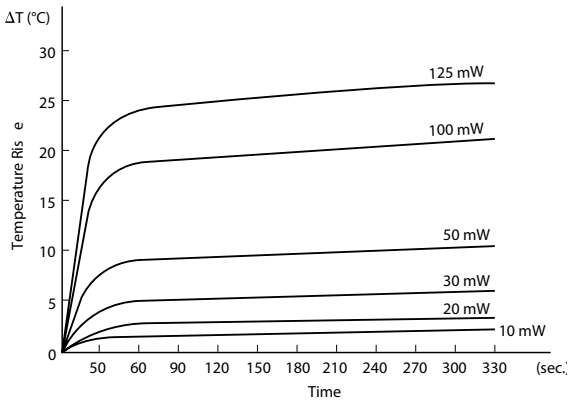
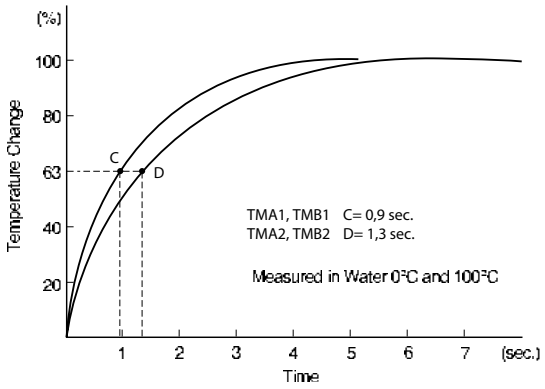
Temperature Characteristics of Resistance



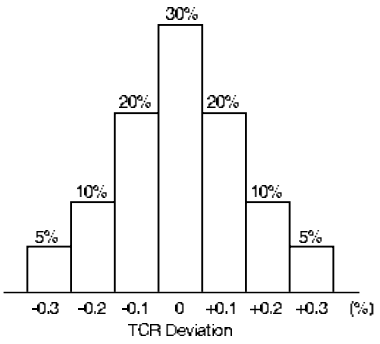
Temperature of Resistor Surface



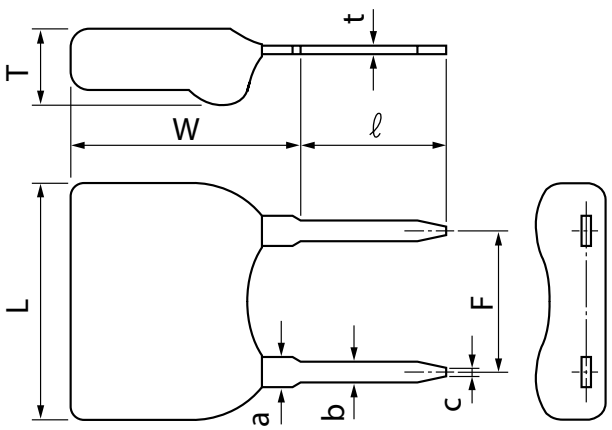
Response Time to Temperature Change



TCR Spread



Drawing



Type	TMA1 / TMB1	TMA2 / TMB2
L	5.6 ±0.5	
W	6.2 ±0.5	8.2 ±0.5
T	2.2 ±0.5	
F	2.54 ±0.25	
ℓ	5.0 ±1.0	
t	0.3 ±0.05	
a	1.0 ±0.05	
b	0.65 ±0.05	
c	0.4 ±0.05	

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Order code					
Description	Selection: **standard=black/bold**, possible *options=grey/italic*				
Series:	**TM**				
Type / size: **Housing length (w) 6,2 mm** **Housing length (w) 8,2 mm**		**A** **B**			
Resistance tolerance: **±0,5%** **±1%** **±2%** **±5%**			**W0,5%** **W1%** **W2%** **W5%**		
Resistance value - please choose and note: **TMA from 5Ω to ≤ 100Ω @ 0,125W** **TMA from 5Ω to ≤ 200Ω @ 0,25W** **TMB from 5Ω to ≤ 500Ω @ 0,125W** **TMB from 5Ω to ≤ 1kΩ @ 0,25W**				**xkxxx**	
Power rating: **0,125W** **0,25W**					**1** **2**

Order Example	Series	Type	Resistance tolerance	Resistance value	Power Rating
Choice	TM	Housing length 6,2 mm	±1%	10Ω	0,125W
Code	TM	A	WA1%	k010	1