

Data Sheet for Precision Resistors

SMD Resistor (wirewound)

Series MSI



- SMD - Wirewound Resistor
- Power up to 4Watt
- Resistance values from 0,005Ω..50kΩ
- Resistance tolerance up to ±0.05%
- TCR up to ±20ppm/°C
- Tape on Reel or Bulk Packaging
- Increased working temperature range -55°C..+275°C
- Non-inductive windings (option)
- Flame resistant UL94 V-0

Electrical Specification	MSI			
	1	2	4	5
Resistance range	0.01Ω..400Ω	0.005Ω..3kΩ	0.01Ω..15kΩ	0.01Ω..50kΩ
Resistance tolerance	±0,05%..±5%			
Power rating @ 70°C (0W @ +275°C)	0.5W	1W	2W	4W
Max. working voltage in V	$\sqrt{P \cdot R}$			
TCR-rate	±20ppm/°C @ R > 10Ω, ±50ppm/°C @ R = 1Ω..10Ω			
Working temperature range (max.)	-55 °C up to +275 °C			

Mechanical Specification	
Resistance technology / material	SMD / Wire alloy
Housing material	Epoxy - Moulded
Connections	Axial tin plated copper

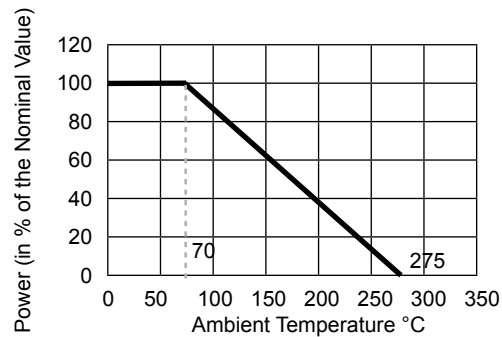
Parameters	Test Conditions (MIL-STD 202)	Specification
Dielectric	See norm	±0.5% +0.05Ω
Load Life	See norm	±1% +0.05Ω
Storage	See norm	±0.5% +0.05Ω
Moisture Resistance	See norm	±1% +0.05Ω
Thermal Shock	See norm	±0.5% +0.05Ω
5 x Overload (5s)	See norm	±0.5% +0.05Ω
Shock	See norm	±0.5% + 0.05Ω
Solder heat Resistance 260°C, 10sec.	See norm	±0.5% + 0.05Ω
Insulation Resistance		>1000 MΩ
Dielectric Strength		1000 VAC

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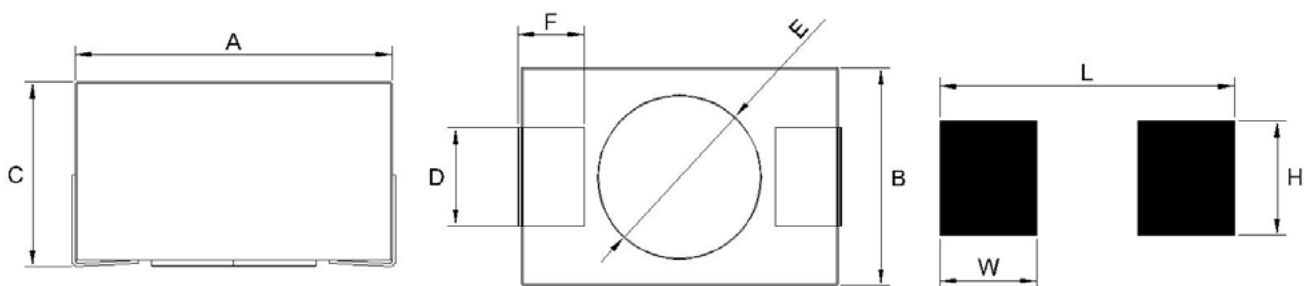
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Power Derating Curve



Drawing



Typ	Body			Connection			Distance Holder		Contact Surface		
	A ±0.4	B ±0.4	C ±0.4	D ±0.4	F ±0.4	Thickness ±0.05	ØE ±0.4	Height ±0.13	W ±0.4	H ±0.4	L ±0.4
MSI-1	4.8	3.3	2.8	1.5	1.0	0.15	2.5	0.13	1.6	2.5	6.4
MSI-2	6.6	3.9	3.2	1.8	1.8	0.15	3.0	0.13	2.4	3.8	8.6
MSI-4	11.4	6.4	4.6	3.0	2.5	0.15	4.8	0.13	3.8	5.1	13.7
MSI-5	20.8	7.5	7.1	4.8	4.8	0.15	6.2	0.13	5.6	6.4	22.9

Dimensions in mm

Packaging	Quantity per unit (reel)	Belt Width
MSI-1	3000 or 650 pcs.	12 mm
MSI-2	2000 or 600 pcs.	16 mm
MSI-4	1000 or 250 pcs.	24 mm
MSI-5	500 or 150 pcs.	32 mm

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Order code						
Description		Selection: standard=black/bold , possible <i>options=grey/italic</i>				
Series:	MSI					
Type / size:						
1 (min. 0,01 / max. 400Ω)		1				
2 (min. 0,005Ω / max. 3kΩ)		2				
4 (min. 0,01 / max. 15kΩ)		4				
5 (min. 0,01 / max. 50kΩ)		5				
Resistance tolerance:						
±5% @R > 1Ω				W5%		
±1% @R > 1Ω				W1%		
±0,5% @R > 1Ω				W0,5%		
±0,25% @R > 1Ω				W0,25%		
±0,05% @R > 100Ω				W0,05%		
Temperature coefficient:						
±20ppm/°C @ R >10Ω					TK20	
±50ppm/°C @ R = 1Ω..10Ω					TK50	
Resistance value - please choose:						
See type / size						xxkxxx
<i>Option non-inductive windings (min. 0,1Ω): max. resistance / 2</i>						<i>N</i>

Order Example	Series	Type	Resistance tolerance	Temperature coefficient	Resistance value	Inductance
Choice	MSI	4	±1%	20ppm/°C	10,1kΩ	Standard
Code	MSI	4	W1%	TK20	10k100	-