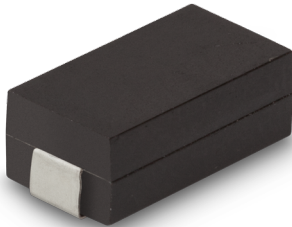


# Data Sheet for Precision Resistors

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..+275°C			
Mechanical Specification				
Resistance technology / material	SMD / Wire alloy			
Housing material	Epoxy - Moulded			
Connections	Axial tin plated copper			

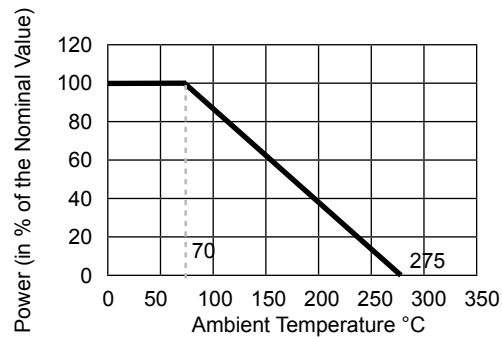
Parameters	Test Conditions (MIL-STD 202)	Specification
Dielectric	See norm	±0,5% +0,05Ω
Load Life	See norm	±1% +0,05Ω
Storage	See norm	±0,5% +0,05Ω
Moisture Resistance	See norm	±1% +0,05Ω
Thermal Shock	See norm	±0,5% +0,05Ω
5 x Overload ( 5s )	See norm	±0,5% +0,05Ω
Shock	See norm	±0,5% + 0,05Ω
Solder heat Resistance 260°C, 10sec.	See norm	±0,5% + 0,05Ω
Insulation Resistance		>1000 MΩ
Dielectric Strength		1000 VAC

# Data Sheet for Precision Resistors

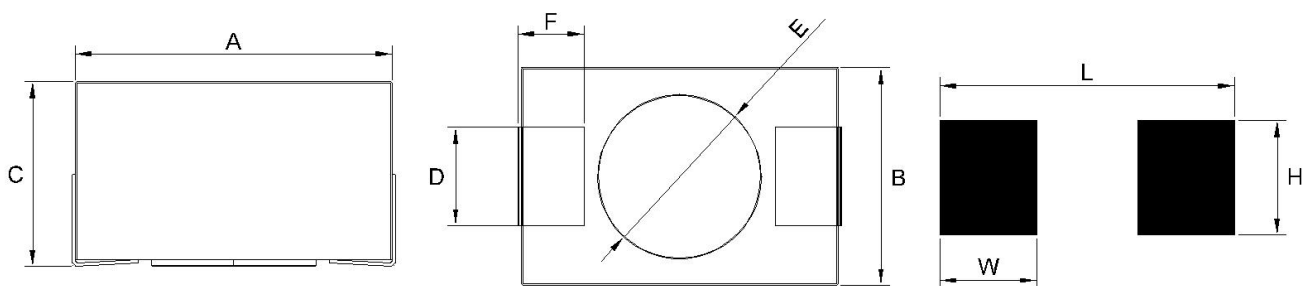
SMD Resistor (wirewound)

Series MSI

## Power Derating Curve



## Technical 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

# Data Sheet for Precision Resistors

SMD Resistor (wirewound)

Series MSI

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