

Data Sheet for Precision Resistors

Ultra Precise Metal Foil Resistor

Series MZH



- Zero-TCR ultraprecision resistor
- Temperature coefficient $<\pm 0.6$ ppm/ $^{\circ}\text{C}$ (0..50 $^{\circ}\text{C}$)
- Metal Foil Resistor with excellent long term stability
- Resistance range from 100 Ω ..100k Ω
- Ultra precise, resistance tolerances from $\pm 0.005\%$
- Hermetically sealed metal housing

Electrical Specification

Resistance range	100 Ω ..100k Ω
Resistance tolerance	$\pm 0.005\%$.. $\pm 1\%$
Power rating @ 70 $^{\circ}\text{C}$ (0W @ +150 $^{\circ}\text{C}$)	0.3W
Max. working voltage	300V
TCR-rate	see plot on page 2
Working temperature range (max.)	-65 $^{\circ}\text{C}$ up to +150 $^{\circ}\text{C}$

Mechanical Specification

Resistance technology / material	Metal foil
Housing material	Metal (hermetically sealed)
Connections	Radial cooper tinned

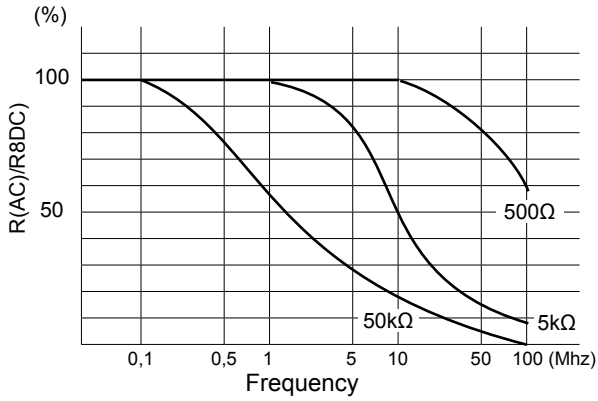
Parameters	Test Conditions	Specification
Power Conditioning	25 $^{\circ}\text{C}$, rated voltage, 96 h	$\Delta R \pm 0.0025\%$
Short time overload	2.5 x rated voltage, 5 sec.	$\Delta R \pm 0.0025\%$
Life span (biased)	70 $^{\circ}\text{C}$, rated power,, 90 min. on 30 min off, 2000 h	$\Delta R \pm 0.01\%$
High temperature / humidity	+65 $^{\circ}\text{C}$..-10 $^{\circ}\text{C}$, 90..98% RH rated voltage, 10 cycles, 240h	$\Delta R \pm 0.0025\%$
Temperature shock	-65 $^{\circ}\text{C}$ (30 min.), +150 $^{\circ}\text{C}$ (30 min), 5 cycles	$\Delta R \pm 0.0025\%$
High temperature exposure	+150 $^{\circ}\text{C}$, no load 2000 h	$\Delta R \pm 0.01\%$
Solderability	245 $^{\circ}\text{C}$, 2 sec.	Coverage > 95%
Resistance to soldering heat	350 $^{\circ}\text{C}$, 3 sec.	$\Delta R \pm 0.0025\%$
Isolation resistance	500 VDC, 2 min.	>10.000M Ω
Dielectric strength	Atmo. Pres.: 300 VAC, 1 min.	$\Delta R \pm 0.0025\%$
Shock	100G, 6 ms, halfsine, X, Y, Z each 10 shocks	$\Delta R \pm 0.0025\%$
High frequency vibration	20G, 10Hz zu 2kHz zu 10Hz, 20 min. X, Y, Z each 2.5 h	$\Delta R \pm 0.0025\%$
Current noise		-42 dB

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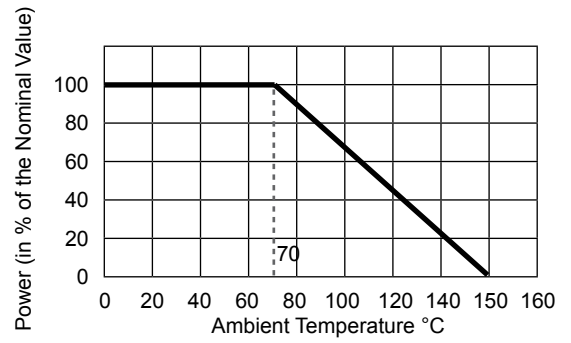
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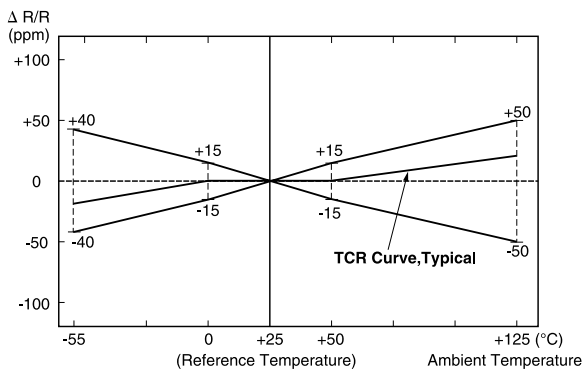
Frequency Characteristics



Power Derating Curve



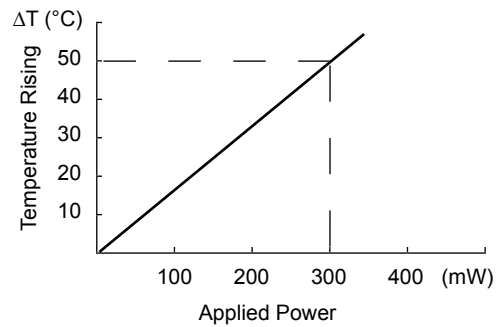
Temperature Characteristics



Temperature (°C)	$\Delta R/R$ (ppm)
-55	0 ± 40
0	0 ± 15
+50	0 ± 15
+125	0 ± 50

Reference temperature 25°C

Temperature of the Resistor Surface

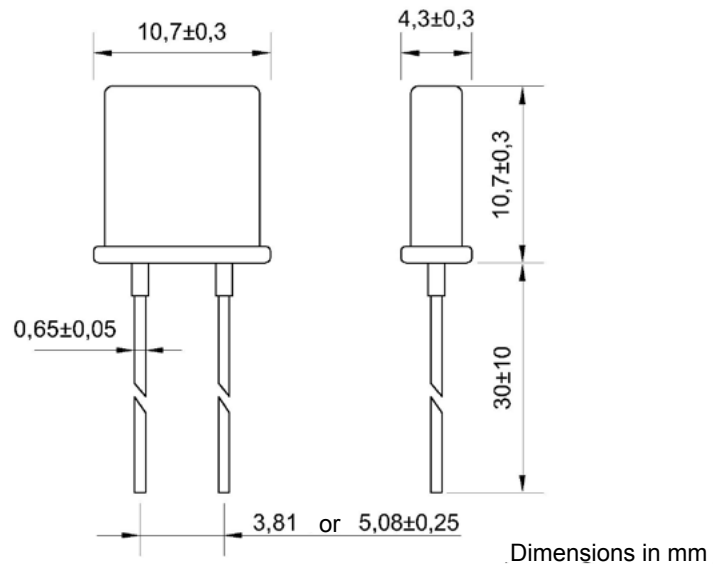


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Drawing



Order code

Description

Selection: **standard=black/bold**, possible *options=grey/italic*

Series:

MZH

Resistance tolerance:

±1%
±0.5%
±0.1%
±0.05%
±0.02%
±0.01%
±0.005%

W1%
W0,5%
W0,1%
W0,05%
W0,02%
W0,01%
W0,005%

Temperature coefficient: <±0.6 ppm/°C

TK0

Resistance value - please choose: From 100Ω to ≤ 100kΩ

xxxkxxx

Lead-Space:

3.81 mm
5.08 mm

3,81
5,08

Order Example	Series	Resistance tolerance	Temperature coefficient	Resistance value	Lead-Space
Choice	MZH	±0.1%	see chart	10.1kΩ	3.81
Code	MZH	W0.1%	TK0	10k100	3.81