

Data Sheet for Precision Resistors

Ultra Precise Metal Foil Resistor

Series MZH



- Zero-TCR ultraprecision resistor
- Temperature coefficient $<\pm 0.6 \text{ ppm}/^{\circ}\text{C}$ ($0..50^{\circ}\text{C}$)
- Metal Foil Resistor with excellent long term stability
- Resistance range from $100\Omega..100\text{k}\Omega$
- 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°C (0W @ +150°C)	0,3W
Max. working voltage	300V
TCR-rate	see plot on page 2
Working temperature range (max.)	-65..+150°C

Mechanical Specification

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

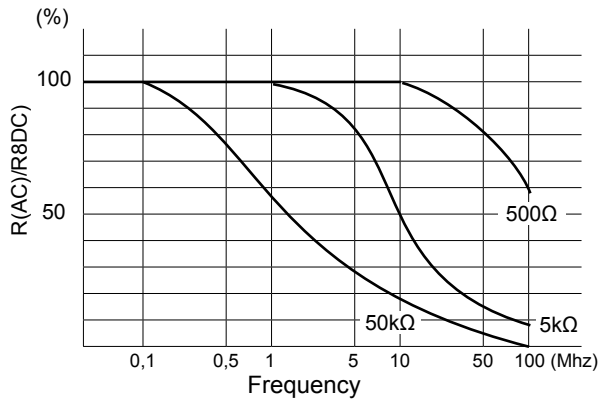
Parameters	Test Conditions	Specification
Power Conditioning	25°C, rated voltage, 96 h	$\Delta R \pm 0,0025\%$
Short time overload	2,5 x rated voltage, 5 sec.	$\Delta R \pm 0,0025\%$
Life span (biased)	70°C, rated power,, 90 min. on 30 min off, 2000 h	$\Delta R \pm 0,01\%$
High temperature / humidity	+65°C..-10°C, 90..98% RH rated voltage, 10 cycles, 240h	$\Delta R \pm 0,0025\%$
Temperature shock	-65°C (30 min.), +150°C (30 min), 5 cycles	$\Delta R \pm 0,0025\%$
High temperature exposure	+150°C, no load 2000 h	$\Delta R \pm 0,01\%$
Solderability	245°C, 2 sec.	Coverage > 95%
Resistance to soldering heat	350°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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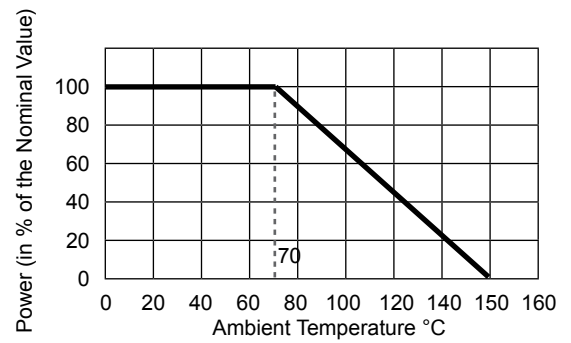
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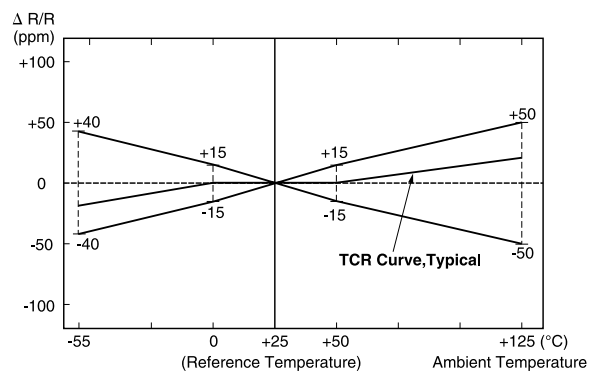
Frequency Characteristics



Power Derating Curve



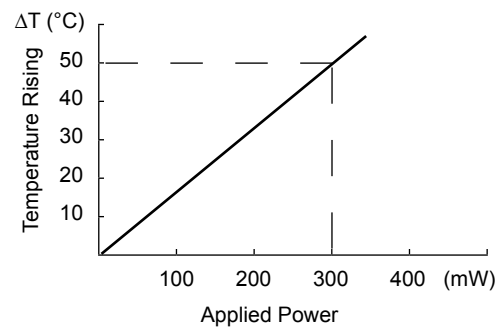
Temperature Characteristics



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

Reference temperature 25°C

Temperature of the Resistor Surface

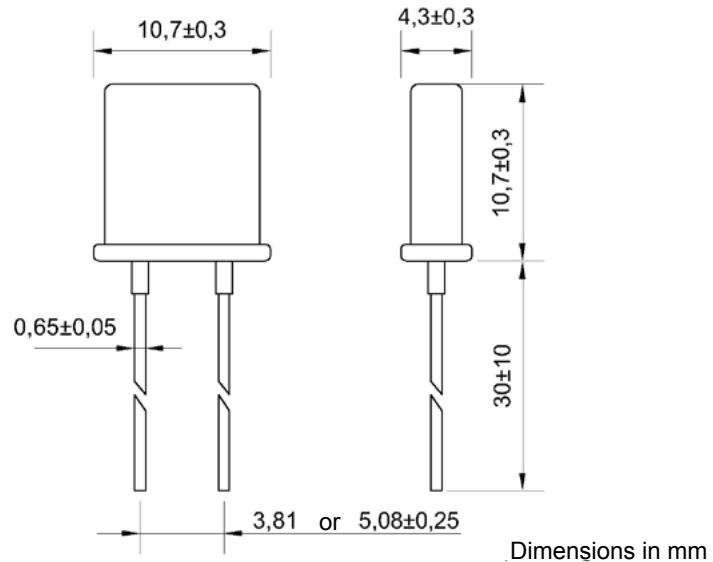


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Drawing



Order code

Description Selection: standard=black/bold, possible options=grey/cursive

Series:	MZH				
Resistance tolerance:					
±1%		W1%			
±0.5%		W0,5%			
±0.1%		W0,1%			
±0.05%		W0,05%			
±0.02%		W0,02%			
±0.01%		W0,01%			
±0.005%		W0,005%			
Temperature coefficient:					
<±0.6 ppm/°C			TK0		
Resistance value - please choose:					
From 100Ω to ≤ 100kΩ				xxxxxxx	
Lead-Space:					
3.81 mm					3,81
5.08 mm					5,08

Order Example	Series	Resistance tolerance	Temperature coefficient	Resistance value	Lead-Space
Choice	MZH	±0.1%	<1 ppm/°C	10.1kΩ	3.81
Code	MZH	W0,1%	TK0	10k100	3,81