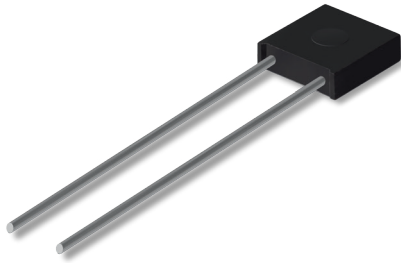


Resistors

Precision - Metal Foil Resistor

MR - series



- Very good Long Term Stability
- Any Resistance from 1Ω - 400kΩ
- Best Resistance Tolerance 0,005%
- Temperature Coefficient ±1 ppm/K
- Non - Inductance
- Low Current Noise
- Rugged Epoxy Housing

Specification	MR9101	MR9102	MR9103
Resistance Range (Ω)	1 - 200k	1 - 200k	5 - 400k
Power Rating (Watts)	0,3 (>150k 0,2)	0,3 (>150k 0,2)	0,5 (>200k 0,3)
Operating Voltage (V)	300 (max.)	300 (max.)	350 (max.)
Tolerances (%)	1Ω - 5Ω: ±0,5; ±1 5Ω - 30Ω: ±0,1; ±0,5; ±1 30Ω - 200k: ±0,005; ±0,01; ±0,02; ±0,05; ±0,1; ±0,5; ±1		5Ω - 30Ω: ±0,1; ±0,5; ±1 30Ω - 400k: ±0,005; ±0,01; ±0,02; ±0,05; ±0,1; ±0,5; ±1
Temperature Coefficient	1Ω - 5Ω: 15ppm 5Ω - 30Ω: 5ppm 30Ω - 200k: 1*; 2,5; 5ppm		5Ω - 30Ω: 5ppm 30Ω - 400k: 1*; 2,5; 5ppm

* Restricted operating temperature range 0 - 55°C

Mechanical Data

Resistance Element	Metal Foil, special alloy
Carrier	Steatit
Housing	Epoxy - Moulded
Leads	Tin plated Copper

Parameter

Test

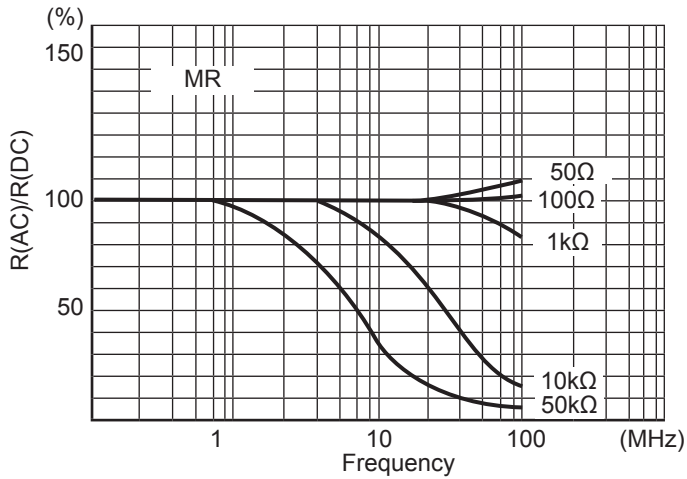
Operating Temperature Range		-65°C to 175°C
Thermal Shock	-65°C/30 min., +125°C/30 min., 5 Cycles	±0,005%
Short Time Overload	6x Related Power, 5 sec.	±0,005%
Solderability	240°C, 5 sec.	Covered > 95%
Soldering Heat Resistance	260°C, 10 sec.	±0,0025%
Insulation Resistance	100 VDC, 2 min.	> 10000 MΩ
Shock	100G, 6 ms, Saw Tooth, X, Y, 10x	±0,0025%
Vibration, High Frequency	20G, 10Hz-2kHz-10Hz, 20 min., X, Y, 4h each	±0,0025%
Stability	2x Related Voltage at 70°C, 1,5h ON, 0,5h OFF, 2000h	±0,005% (typically)
Storage Life	15 - 35°C, 15 - 75% RH, Loadfree, 10.000h	±0,0025%
Current Noise		-42dB
Voltage Coefficient		0,00003%/V

Resistors

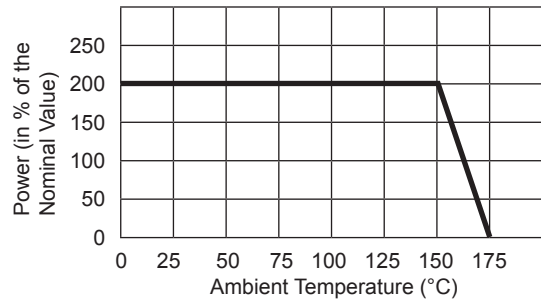
Precision - Metal Foil Resistor

MR - series

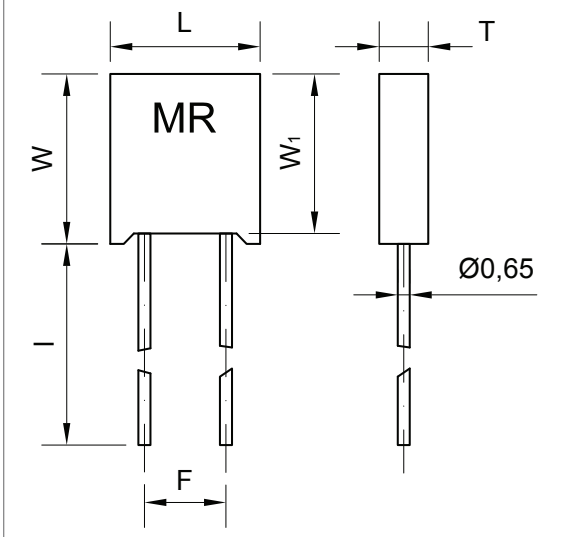
Frequency Characteristics



Power Derating Curve



Technical Drawing



Dimensions	L (±0,2)	W (±0,2)	W ₁ (±0,2)	I (±10)	T (±0,2)	F (±0,25)
MR9101	7,9	8,3	8,0	25,0	2,8	3,81
MR9102	7,9	8,3	8,0	10	2,3	5,08
MR9103	13	10	9,5	10	4	7,5

All Dimensions in mm

Ordering Information

MR9105	W0,1%	TK5	10k000
Type	Resistance Tolerance	Temperature Coefficient	Resistance Value
	1Ω - 5Ω: ±0,5; ±1	1Ω - 5Ω: ±15ppm	(1Ω - 400kΩ)
	5Ω - 30Ω: ±0,1; ±0,5; ±1	5Ω - 30Ω: ±5ppm	
	30Ω - 400k: ±0,005; ±0,01;	30Ω - 200k: ±1ppm, ±2,5ppm;	
	±0,02; ±0,05;	±5ppm	
	±0,1; ±0,5; ±1		