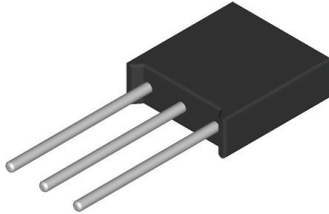


Resistors

Precision - Voltage Divider

MSM - series



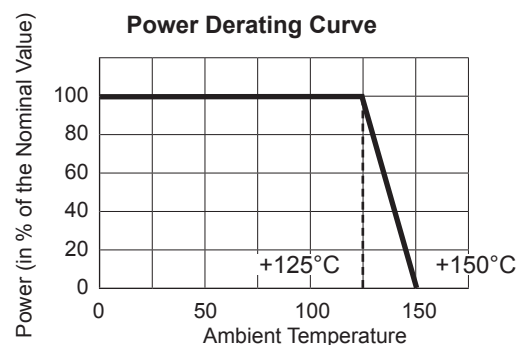
- 3 Pin Voltage Divider
- Any Resistance from 50Ω - 30kΩ
- Standard TCR $\pm 2,5$ ppm/K, ± 5 ppm/K
- Tolerances from 0,01%
- Non-inductive
- Excellent Load Life Ratio Stability

Spezifikation

Resistance Range	50Ω - 30kΩ			
Power	0,30Watts Each Single Element			
Tolerances	Absolut	Matching		
	50Ω - 30k	$\pm 0,02\%$, $\pm 0,05\%$, $\pm 0,1\%$	$\pm 0,01\%$, $\pm 0,02\%$, $\pm 0,05\%$, $\pm 0,1\%$	
Temperature Coefficient	Absolut	Tracking		
		$\pm 2,5$ ppm/K, 5ppm/K	Ratio	Value
			R1/R2 = 1	$\pm 0,5$ ppm/K
			$1 < R1/R2 \leq 10$	± 1 ppm/K
			$10 < R1/R2 \leq 100$	± 2 ppm/K
		R1/R2 >100	± 3 ppm/K	
Operating Temperature Range	-65°C bis 145°C			
Current Noise	-42dB			
Voltage Coefficient	0,0005%/V			
Thermal EMF	0,1μV/°C			
Insulation Resistance	>10 GOhm			

Mechanical Data

Housing	Epoxy
Resistance Element	NiCr - Foil
Carrier	Steatit
Leads	Copper, Tin Plated



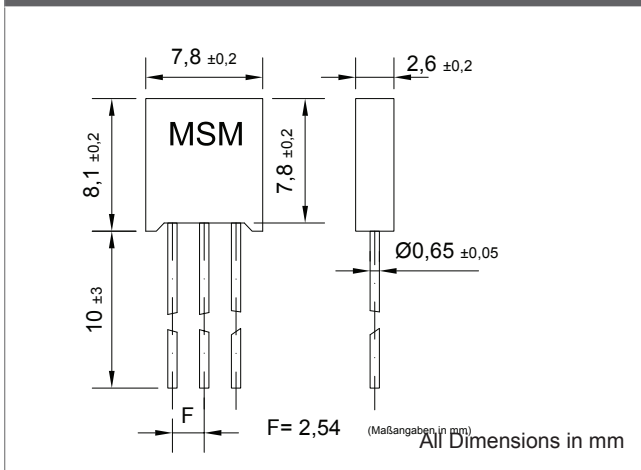
Resistors

Precision - Voltage Divider

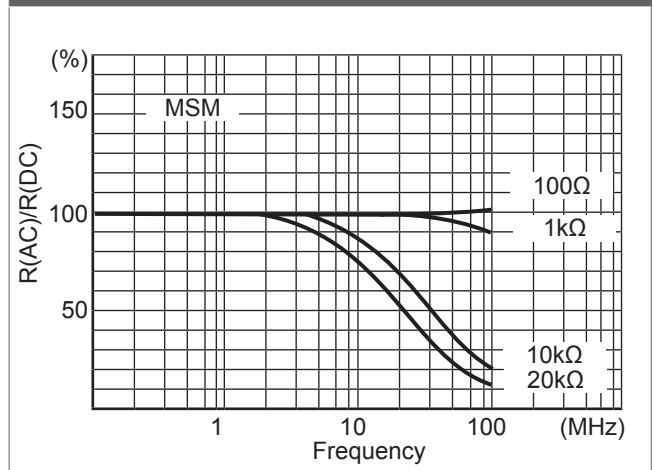
MSM - series

Parameter	Test	Δ Ratio	ΔR
Load Life	90 min ON, 30 min OFF, 2000h at 125°C	$\pm 0,005\%$	$\pm 0,015\%$
Overload	2,5 x Related Voltage, 5 Seconds	$\pm 0,001\%$	$\pm 0,0025\%$
Humidity	90 - 98% RH, Related Voltage, 240h, at -65°C to -10°C	$\pm 0,01\%$	$\pm 0,02\%$
Thermal Shock	-65°C 30 min, +155°C 30min. 5 Cycles	$\pm 0,0025\%$	$\pm 0,005\%$
Vibration	20G, 10Hz - 2kHz - 10Hz, X,Y,Z 20 min each, 2,5h	$\pm 0,001\%$	$\pm 0,0025\%$
Shock	100G, 6ms, Saw Tooth, X,Y,Z je 3 shocks	$\pm 0,001\%$	$\pm 0,0025\%$
Soldering Heat Resistance	350°C $\pm 5^\circ\text{C}$, 3 Seconds	$\pm 0,001\%$	$\pm 0,0025\%$
Solderability	245°C $\pm 5^\circ\text{C}$ 5 Seconds	>95% Coverage	
Storage Life	15°C to 35°C, 15 - 75% RH, Load Free, 10000h	$\pm 0,0015\%$	$\pm 0,0025\%$

Technical Drawing



Frequency Characteristics



Ordering Information

MSM Type	WA0,1% Tolerance (absolute)	WM0,1% Tolerance (matching)	TK5 Temp. Coefficient (absolute)	10k/10k Resistance Value
	50Ω - 30kΩ: $\pm 0,02\%$, $0,05\%$, $\pm 0,1\%$	50Ω - 30kΩ: $\pm 0,01\%$, $\pm 0,02\%$, $\pm 0,05\%$, $\pm 0,1\%$	$\pm 2,5\text{ppm}$ $\pm 5\text{ppm}$	(50Ω - 30kΩ) The total resistance must not exceed 30kΩ!