

MFRE - Series

Precision Metal Film Resistors

FEATURES

- Resistance from 1Ω to 1MΩ
- Temperature Coefficients to 5ppm/°C
- Low Inductive Homogeneous Metal Film
- Moisture Resistant Epoxy Design
- Special Types ±1ppm/°C; ±0,01% on Request
- RoHS compliant



RATED VALUES (IEC 60115-1)

Resistance Range	Ω	1Ω to 1MΩ (any non E-series resistance)
Temperature Coefficient	ppm/°C	±25ppm/°C; ±15ppm/°C; ±10ppm/°C; ±5ppm/°C
Power P ₇₀	(W)	0,25W; 0,5W
Resistance Tolerance	%	±0,05%; ±0,1%; ±0,25%; ±0,5%; ±1%
Working Voltage (U _{max} AC/DC)	V	350V
Insulation Resistance (R _{ins})	Ω	>10GΩ
Operating Temperature Range (T)	°C	-55°C to 125°C

RANGES

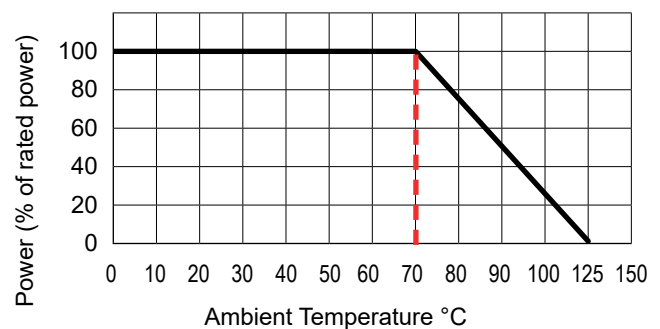
Resistance Range	Resistance Tolerance	Temperature Coefficient*
1R00 - 9R90	±0,5%; ±1%	±25ppm/°C; ±15ppm/°C; ±10ppm/°C
10R0 - 24R9	±0,25%; ±0,5%; ±1%	
25R0 - 99R9	±0,1%; ±0,25%; ±0,5%; ±1%	
100R0 - 100K0	±0,05%; ±0,1%; ±0,25%; ±0,5%; ±1%	±25ppm/°C; ±15ppm/°C; ±10ppm/°C; ±5ppm/°C
>100K - 1M	±0,1%; ±0,25%; ±0,5%; ±1%	±25ppm/°C; ±15ppm/°C; ±10ppm/°C

*Temperature coefficient specified within a temperature range of 20°C to 70°C

CONSTRUCTION

Resistor Material	NiCr - Alloy
Substrate	Alumina
Coating	Epoxy Housing
Leads	Tin plated copper wire

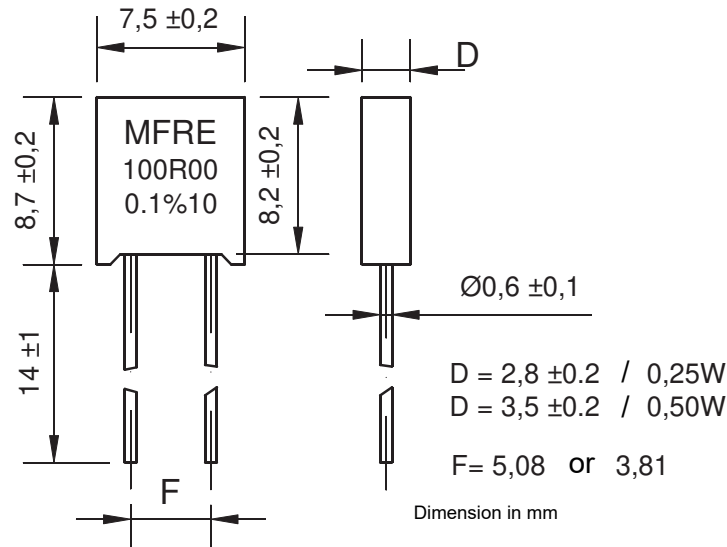
POWER DERATING CURVE



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DIMENSIONS



PERFORMANCE

IEC 60115-1	Test	Conditions of Test	Test Limits
4.23	Moisture Resistance	+55°C, 90-100% R.H., rated voltage, 240h, 10 cycles	$\pm(0,1\% \Delta R + 0,01\Omega)$
4.19	Thermal Shock	-55°C 30 min, +125°C 30 min, 5 cycles	$\pm(0,05\% \Delta R + 0,01\Omega)$
4.6	Insulation Resistance	U_{ins} 500 V, 1 min	10G Ω
4.13	Short time Overload	2.5 x rated voltage U_{max} , 5s	$\pm(0,05\% \Delta R + 0,01\Omega)$
4.25	Endurance	+70°C, U_{max} 1,5h „ON“ and 0,5h „OFF“, 1000h	$\pm(0,1\% \Delta R + 0,01\Omega)$
4.17	Solderability	245°C, max. 3s	95% contact covered
4.18	Solder Heat Resistance	350°C, max. 5s	$\pm(0,03\% \Delta R + 0,01\Omega)$

OPTIONS

Lead Space	5,08; 3,81
Matched - Sets (on request)	Resistors sets, matched (selected) by T.C.R and tolerance
Lead Wires (on request)	Other length or diameter

ORDERING INFORMATION

MFRE 100R00 0,1% TK25 0,5W 3,81 (MFRE 100R00; $\pm 0,1\%$; $\pm 25\text{ppm}^\circ\text{C}$; 0,5Watts; 3,81mm)

Type	Special	Resistance	Tolerance	Temperature Coefficient	Power	Lead Space	Packaging
MFRE	- XXX	0R1000 100R00 10K000 1M0000	0,05% 0,1% 0,25% 0,5% 1,0%	TK5 TK10 TK15 TK25	0,25 W 0,50 W	3,81 5,08	-

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