

Metal Glaze Film Resistors



Features

- Small in dimension and broad range in high resistance
- Metal glaze resistor elements provide high stable performance against environmental conditions and overload
- Excellent in absorption of electric shock (pulse, surge voltage)

Specification Table

Type	Style	Power Rating at 70°C (W)	Dimension			
			D Maximum	L Maximum	d ±0.05	H ±3
MGRF1W	MGR-100	1	5.2	13.0	0.75	25
MGRF2W	MGR-200	2	6.0	17.0		28

Dimensions : Millimetres

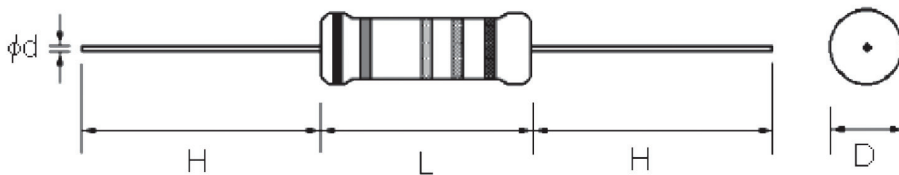
Power Rating

Style	Maximum Working Voltage (V)	Maximum Overload Voltage (V)	Dielectric Withstanding Voltage (V)	Surge Withstanding Voltage (V)	Resistance Range
MGR-100	3500	4000	1000	100KΩ ~ 33MΩ : 10000	± 5% : 1KΩ ~ 33MΩ
MGR-200					

Surge withstanding voltage: IEC 60065

1. Discharge test : 3kV ~ <10kV, 0.01μF capacitor discharge pulse, 10 times (1pulse : 2.5 second "ON", 2.5 second "OFF")
2. Discharge test : ≥10kV, 0.001μF (1nF) capacitor discharge pulse, 50 times (1pulse : 2.5 second "ON", 2.5 second "OFF")

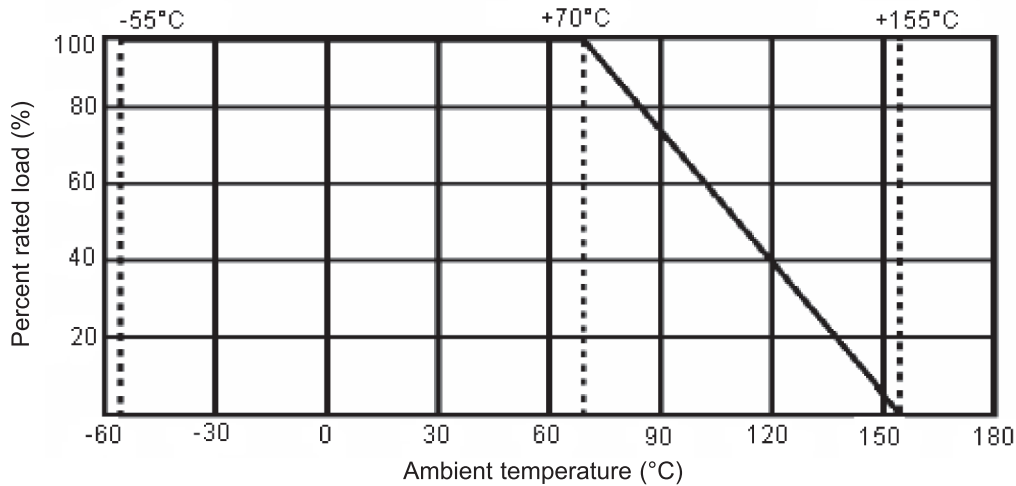
Dimension



Dimensions : Millimetres

- 5 colour code band for ± 5% tolerance and last band black colour for identification
- MGRF1W and MGRF2W using non-flame point

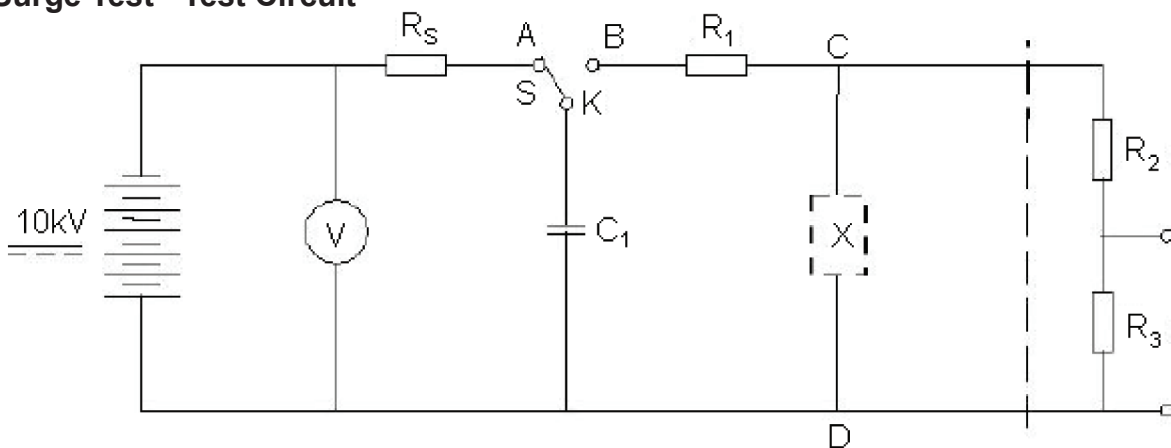
Derating Curve



Performance Specifications

Temperature coefficient	: $\leq \pm 200\text{PPM} / ^\circ\text{C}$
Short-time overload	: $\Delta R/R \leq \pm (1.0\% + 0.05\Omega)$, with no evidence of mechanical damage
Dielectric withstanding voltage	: No evidence of flashover, mechanical damage, arcing or insulation breakdown
Pulse overload	: $\Delta R/R \leq \pm (2.0\% + 0.05\Omega)$, with no evidence of mechanical damage
Terminal strength	: No evidence of mechanical damage
Resistance to soldering heat	: $\Delta R/R \leq \pm (1.0\% + 0.05\Omega)$, with no evidence of mechanical damage
Minimum solderability	: 95% coverage
Resistance to solvent	: No deterioration of protective coating and markings
Temperature cycling	: $\Delta R/R \leq \pm (1.0\% + 0.05\Omega)$, with no evidence of mechanical damage
Load life in humidity	: $\Delta R/R \leq \pm (5.0\% + 0.05\Omega)$, with no evidence of mechanical damage
Load life	: $\Delta R/R \leq \pm (5.0\% + 0.05\Omega)$, with no evidence of mechanical damage
Surge withstanding voltage	: $\Delta R/R \leq \pm (20.0\% + 0.05\Omega)$, with no evidence of mechanical damage

Surge Test - Test Circuit



Note : $C_1 = 0.01\mu\text{F} < 10000\text{V}$ $C_1 = 1\text{nF} (0.001\mu\text{F}) \geq 10000\text{V}$ $R_1 = 1\text{k}\Omega$ $R_2 = 100\text{M}\Omega$ $R_3 = 0.1\text{M}\Omega$ $R_s = 15\text{M}\Omega$

Metal Glaze Film Resistors

Part Number

Description	Part Number
Resistor, 1W 5% 1M2	MGRF1WJ0125A10
Resistor, 1W 5% 1M5	MGRF1WJ0155A10
Resistor, 1W 5% 1M8	MGRF1WJ0185A10
Resistor, 1W 5% 2M2	MGRF1WJ0225A10
Resistor, 1W 5% 2M7	MGRF1WJ0275A10
Resistor, 1W 5% 3M3	MGRF1WJ0335A10
Resistor, 1W 5% 3M9	MGRF1WJ0395A10
Resistor, 1W 5% 4M7	MGRF1WJ0475A10
Resistor, 1W 5% 5M6	MGRF1WJ0565A10
Resistor, 1W 5% 6M8	MGRF1WJ0685A10
Resistor, 1W 5% 8M2	MGRF1WJ0825A10
Resistor, 1W 5% 10M	MGRF1WJ0106A10
Resistor, 1W 5% 15M	MGRF1WJ0156A10
Resistor, 1W 5% 22M	MGRF1WJ0226A10
Resistor, 1W 5% 33M	MGRF1WJ0336A10
Resistor, 2W 5% 1M2	MGRF2WJ0125AA9
Resistor, 2W 5% 1M5	MGRF2WJ0155AA9
Resistor, 2W 5% 1M8	MGRF2WJ0185AA9
Resistor, 2W 5% 2M2	MGRF2WJ0225AA9
Resistor, 2W 5% 2M7	MGRF2WJ0275AA9
Resistor, 2W 5% 3M3	MGRF2WJ0335AA9
Resistor, 2W 5% 3M9	MGRF2WJ0395AA9
Resistor, 2W 5% 4M7	MGRF2WJ0475AA9
Resistor, 2W 5% 5M6	MGRF2WJ0565AA9
Resistor, 2W 5% 6M8	MGRF2WJ0685AA9
Resistor, 2W 5% 8M2	MGRF2WJ0825AA9
Resistor, 2W 5% 10M	MGRF2WJ0106AA9
Resistor, 2W 5% 15M	MGRF2WJ0156AA9
Resistor, 2W 5% 22M	MGRF2WJ0226AA9
Resistor, 2W 5% 33M	MGRF2WJ0336AA9

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