Data Sheet

Customer:	
Product:	**High Ohmic/High Voltage Metal Glaze Leaded Resistors — MGR Series**
Sizes.:	**0623/0932/1145/1550/1760**
Issued Date:	**31-Mar-25**
Edition:	**REV.A9**

RoHS Compliant

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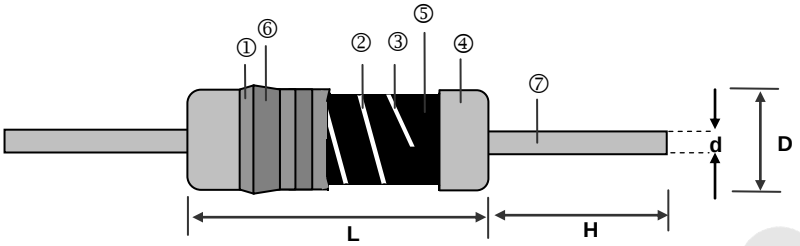
Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
31-Mar-25	31-Mar-25	31-Mar-25	31-Mar-25	
Mandy Chang	*Ben Chang*	*Ben Chang*		

High Ohmic/High Voltage Metal Glaze Leaded Resistors

Features

- Coat-Insulated Metal Glazed Fixed Resistors (RoHS compliant)
- Higher working voltage
- High pulse loading capability
- Resistance to high Temp/Humidity
- Highly stable performance and highly reliable
- Flameproof coating equivalent to UL-94V-0 (for Silicone Resin)

Construction



①	Insulation Coating	⑤	Resistor Layer
②	Trimming Line	⑥	Marking
③	Ceramic Core	⑦	Lead Wire
④	Electrode Cap		

Dimensions

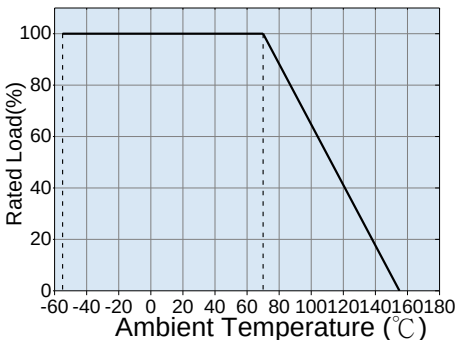
Unit: mm

Type	L	D	H	d
MGR0623	6.3±0.5	2.3±0.3	28±2.0	0.55±0.03
MGR0932	9.0±0.5	3.2±0.5	26±2.0	0.65±0.03
MGR1145	11.5±1.0	4.5±0.5	35±2.0	0.78±0.03
MGR1550	15.5±1.0	5.0±0.5	32±2.0	0.78±0.03
MGR1760	17.5±1.0	6.0±0.5	35±2.0	0.78±0.03

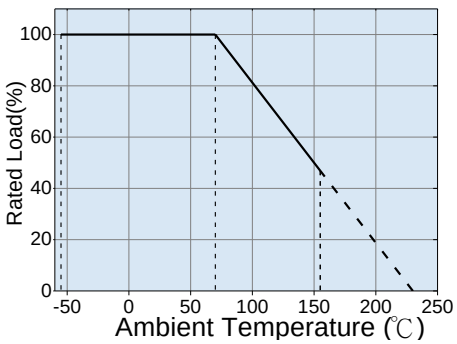
Part Numbering

MGR	0932	F	T	F	U	1004	S
Product Type	Dimensions (L×D)	Resistance Tolerance	Packaging Code	TCR (PPM/℃)	Power Rating	Resistance	Special
	0623: 6.3x2.3 0932: 9.0x3.2 1145: 11.5x4.5 1550: 15.5x5.0 1760: 17.5x6.0	F: ±1% G: ±2% J: ±5%	A: Ammo T: Taping Reel	E: ±100 F: ±200 I: ±500	V: 1/4W U: 1/2W T: 1W S: 2W R: 3W D: 5W	1003: 100KΩ 1004: 1MΩ 1006: 100MΩ	S: Silicone Resin E: Epoxy Resin

Derating Curve (for Epoxy Resin)



Derating Curve (for Silicone Resin)



■Standard Electrical Specifications

Item / Type	Power Rating at 70°C	Operating Temp. Range		Max. Working Voltage	Max. Overload Voltage	Voltage Pooof		Resistance Range			TCR (PPM/°C)	Measured
		Silicone Resin	Epoxy Resin			Silicone Resin	Epoxy Resin	±1%	±2%	±5%		
0623	1/4W	-55 ~ 225°C	-55 ~ 155°C	DC1600V AC1150V	DC2000V AC1500V	400V	500V	100KΩ~1MΩ			±100	DC100V 100K≤R<1M DC1000V 1M≤R
								100KΩ~10MΩ			±200	
								11MΩ~500MΩ			±500	
0932	1/2W			DC3500V	4000V	500V	700V	100KΩ~1MΩ			±100	
								100KΩ~10MΩ			±200	
								11MΩ~500MΩ			±500	
1145	1W			DC4500V	5000V	500V	1000V	100KΩ~1MΩ			±100	
								100KΩ~10MΩ			±200	
								11MΩ~500MΩ			±500	
1550	2W			DC7000V	14000V	700V	1200V	100KΩ~1MΩ			±100	
								100KΩ~10MΩ			±200	
								11MΩ~500MΩ			±500	
1760	3W			DC12000V	16000V	1000V	1200V	100KΩ~1MΩ			±100	
								100KΩ~10MΩ			±200	
								11MΩ~500MΩ			±500	

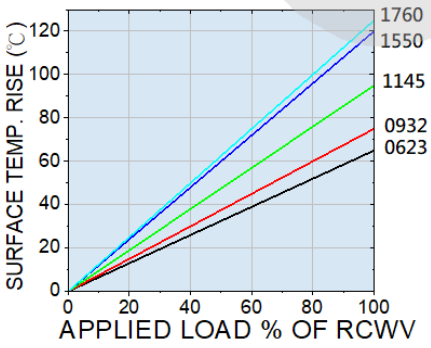
■High Power Rating Electrical Specifications

Item / Type	Power Rating at 70°C	Operating Temp. Range		Max. Working Voltage	Max. Overload Voltage	Voltage Pooof		Resistance Range			TCR (PPM/°C)	Measured
		Silicone Resin	Epoxy Resin			Silicone Resin	Epoxy Resin	±1%	±2%	±5%		
0623	1/2W	-55 ~ 225°C	-55 ~ 155°C	DC1700V	2500V	400V	500V	100KΩ~1MΩ			±100	DC100V 100K≤R<1M DC1000V 1M≤R
								100KΩ~10MΩ			±200	
								11MΩ~500MΩ			±500	
0932	1W			DC4000V	4500V	500V	700V	100KΩ~1MΩ			±100	
								100KΩ~10MΩ			±200	
								11MΩ~500MΩ			±500	
1145	2W			DC5000V	10000V	500V	1000V	100KΩ~1MΩ			±100	
								100KΩ~10MΩ			±200	
								11MΩ~500MΩ			±500	
1550	3W			DC10000V	14000V	700V	1200V	100KΩ~1MΩ			±100	
								100KΩ~10MΩ			±200	
								11MΩ~500MΩ			±500	
1760	5W			DC13000V	18000V	1000V	1200V	100KΩ~1MΩ			±100	
								100KΩ~10MΩ			±200	
								11MΩ~500MΩ			±500	

Operating Voltage=√(P*R) or Max. operating voltage listed above, whichever is lower.
Overload Voltage=2.5*√(P*R) or Max. overload voltage listed above, whichever is lower.
Value Range for standard resistance, below ot over this resistance on request.

■Silicone Resin coating color : Brown (Flame-Proof) **Epoxy Resin coating color : Light Blue**

■Hot-Spot Temperature



■Environmental Characteristics

Item	Requirement	Test Method
Resistance Value	100KΩ~500MΩ	**IEC 60115-1 4.5** Measure at a distance of 10mm from the cap end
Temperature Coefficient(T.C.R)	As Spec	**IEC 60115-1 4.8** Resistance value at room temperature and room temperature raised 100°C
Short Time Overload	±(1.0%+0.05Ω)	**IEC 60115-1 4.13** Measure executed at 2.5 times RCWV for 5 seconds
Insulation Resistance	>1000 MΩ	**IEC 60115-1 4.6** The measure was executed by V-Block methods
Solderability	≥ 95 % covered	**IEC 60115-1 4.17** 245±5℃ for 3±0.5 seconds
Endurance	±(5.0%+0.05Ω)	**IEC 60115-1 4.25** 70±2°C, RCWV for (or Umax., whichever less) 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat, Steady State	±(3.0%+0.05Ω)	**IEC 60115-1 4.24** 40±2°C, 90~95% R.H., for 56 days, loaded with 0.1 times RCWV (or Umax., whichever less)
Voltage Proof	By Type	**IEC 60115-1 4.17** In V-Block for 1 minute
Periodic-Pulse Overload Test	±(1.0%+0.05Ω)	**IEC 60115-1 4.39** 4 times RCWV (or Umax., whichever less) for 10000 cycles with 1sec "ON" and 25 sec "OFF"
Resistance To Soldering Heat	±(1.0%+0.05Ω)	**IEC 60115-1 4.16** The solder iron heated to 260°C ±5℃ and applied to the termination for duration of 10±1 seconds
Robustness of Terminations	Tensile: ≧ 2.5kg (24.5N)	**IEC 60115-1 4.16** Direct Load for 10 sec. In the direction off the terminal leads
Solvent Resistance of Marking	No obvious abnormality in coatings and markings	**IEC 60115-1 4.30** IPA for 5±0.5 Min. with ultrasonic
Temperature Cycling	±(1.0%+0.05Ω)	**IEC 60115-1 4.19** -55℃/155℃ with 5 cycles. the duration at each temperature 30 min

RCWV(Rated continuous working voltage)= √(P*R) or Max. Operating voltage whichever is lower.

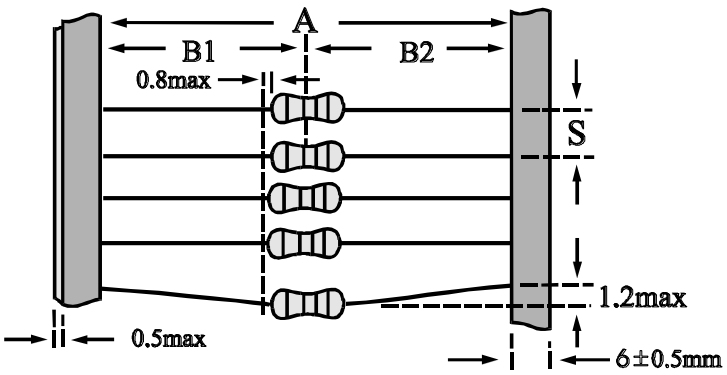
■Storage Temperature: 25±10°C; Humidity < 80%RH

■Shelf life: 1 years Max

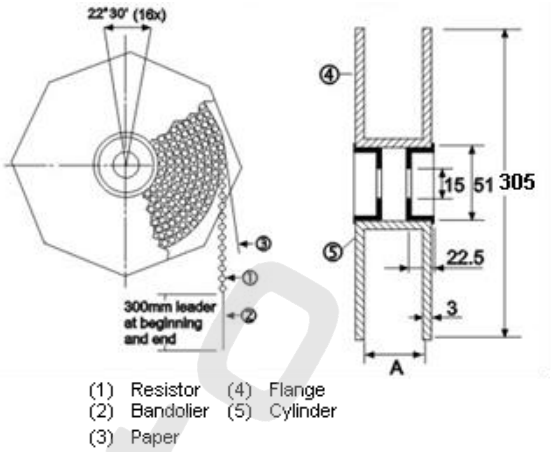
■Taping/Packing Specifications

1. Standard Type (Reel & Ammo)

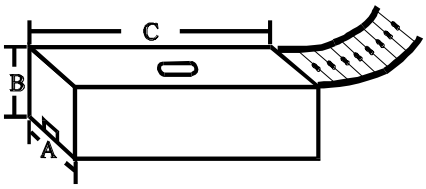
Packing Methods



Reel Packing



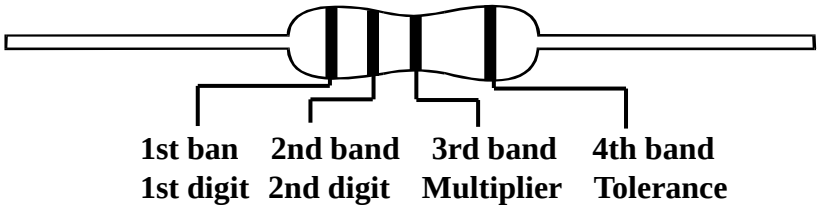
Ammo Packing

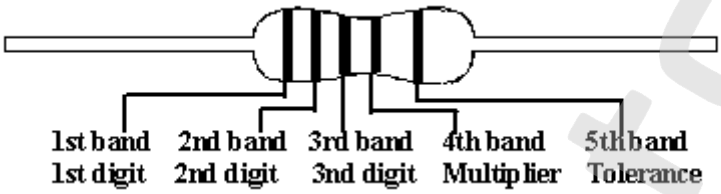


Unit: mm

Packaging / Type	Packing Methods			Reel Packing		Ammo Packing			
	A	B1-B2 Max	S	Across Flange (A)	Qty	A	B	C	Qty
0623	52+1/-0	1.2	5±0.3	72	5,000	79±2	100±3	257±5	5,000
	26+0.5/-0	1.0		-		52±2	109±3	252±5	
0932	52+1/-0	1.2	5±0.3	72	2,500	79±2	58±3	257±5	1,000
1145	73+1/-0	1.5	5±0.3	95	2,000	103±2	82±3	262±5	1,000
	52+1/-0					81±2	85±3	256±5	
1550	73+1/-0	1.5	10±0.8	95	1,000	103±2	96±3	265±5	1,000
	52+1/-0					82±2	108±3	258±5	
1760	73+1/-0	1.5	10±0.8	95	1,000	103±2	82±3	262±5	500

■Marking & Resistance Tolerance





Color	Digit	Multiplier	Tolerance	
Without	-	-	-	-
Silver	-	10^{-2}	±10%	K
Gold	-	10^{-1}	±5.0%	J
Black	0	10^{0}	-	-
Brown	1	10^{1}	±1.0%	F
Red	2	10^{2}	±2.0%	G
Orange	3	10^{3}	-	-
Yellow	4	10^{4}	-	-
Green	5	10^{5}	-	-
Blue	6	10^{6}	-	-
Violet	7	10^{7}	-	-
Grey	8	10^{8}	-	-
White	9	10^{9}	-	-

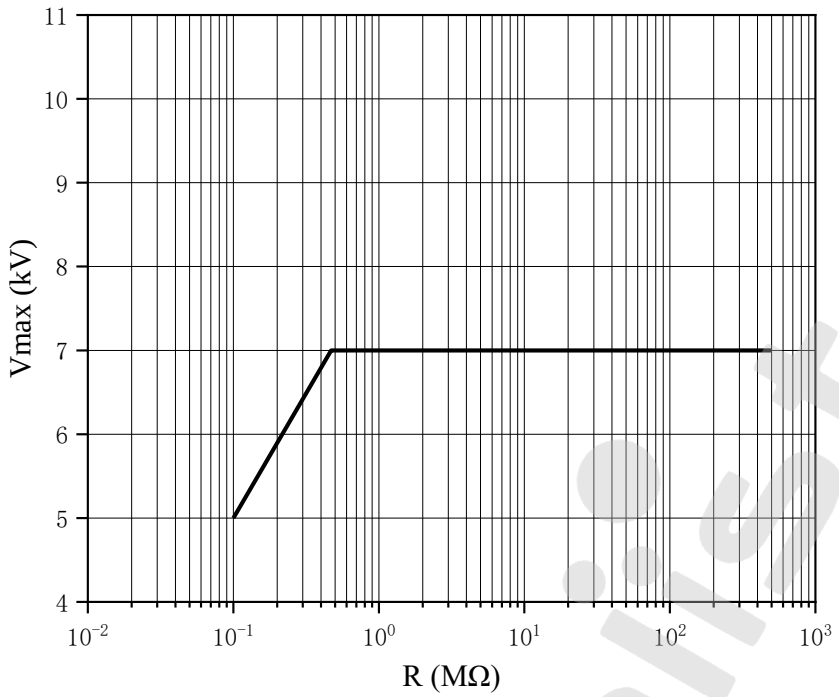
±5.0% ±2.0% ±1.0%	E-24	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.7	3.0	3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1

■Maximum Allowed Peak Pulse Voltage Diagrams

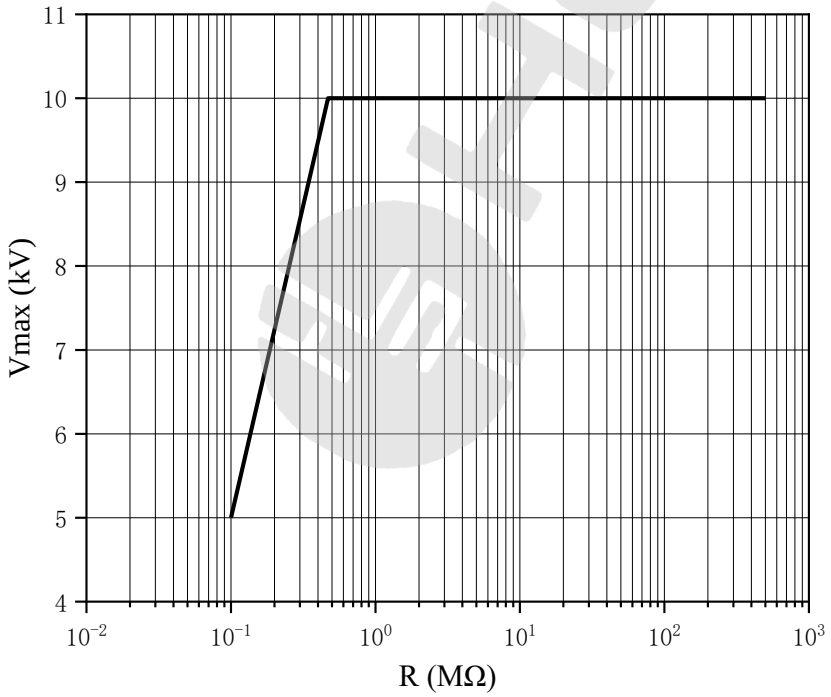
In accordance with IEC 62368-1, G.10

50 discharges from a 1 nF capacitor charged to Vmax.; 12 discharges/min (drift ΔR/R ≤ 2 %)

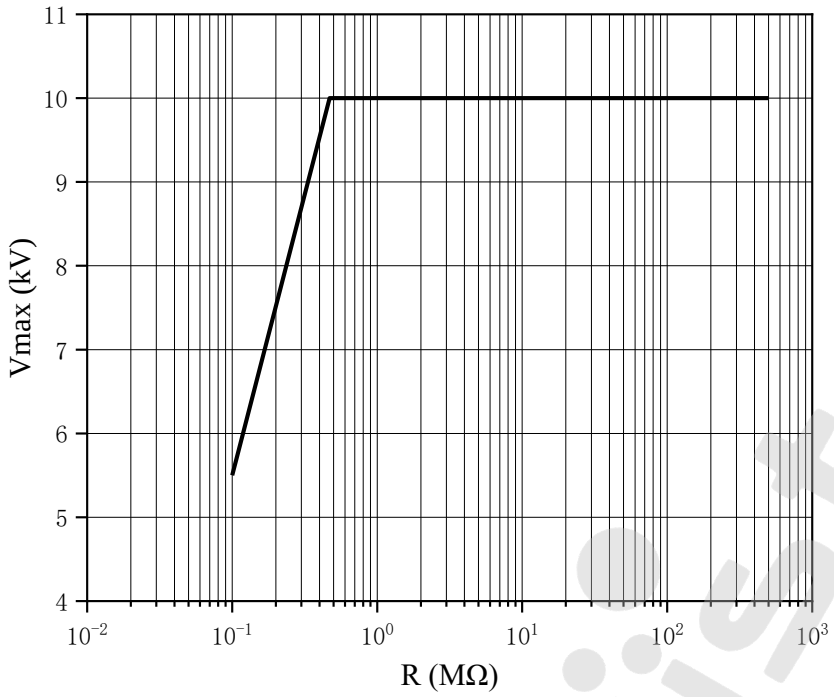
MGR0623



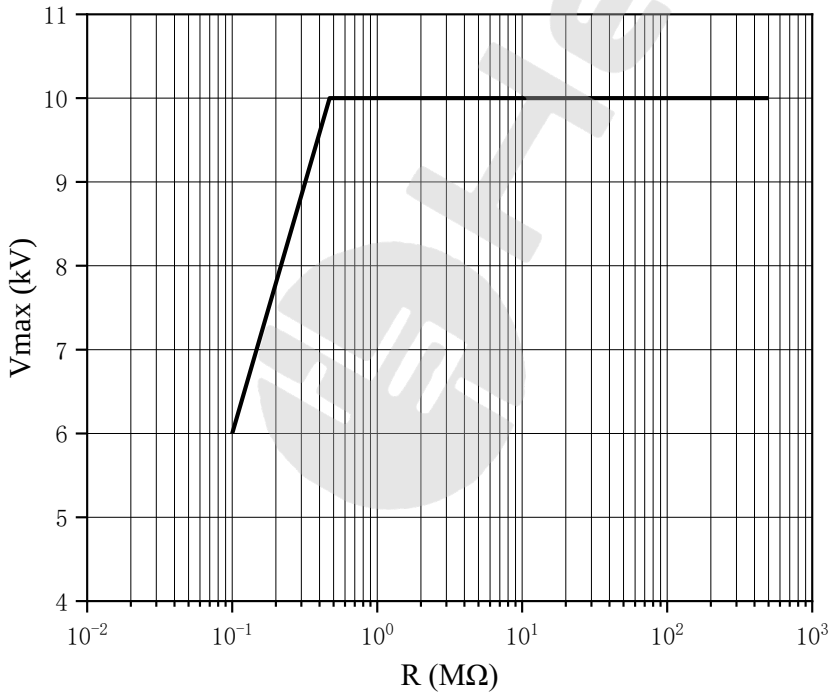
MGR0932



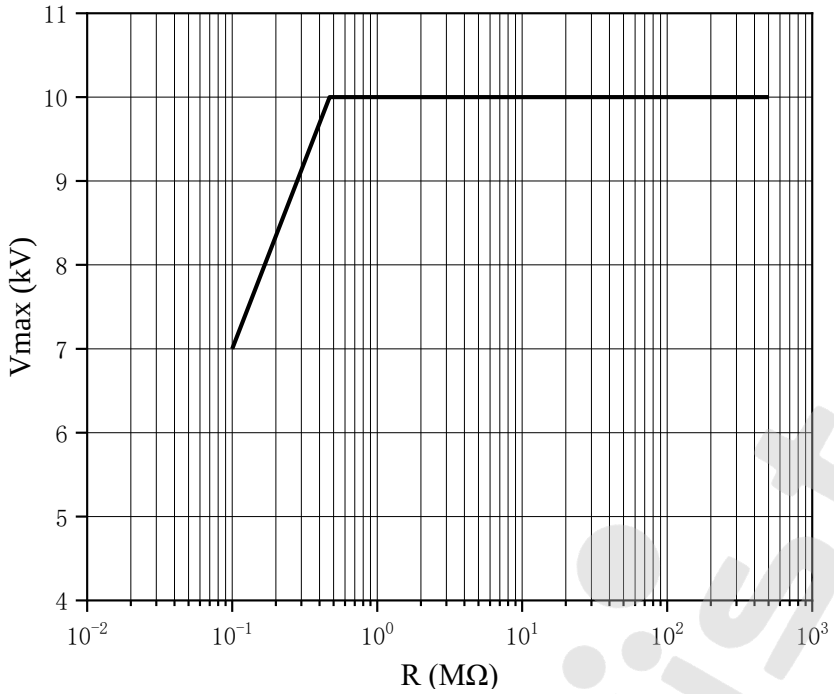
MGR1145



MGR1550



MGR1760



REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A9	Mar 31,2025		-Modify Reel Packing specifications of 0623 -Add Shelf life.