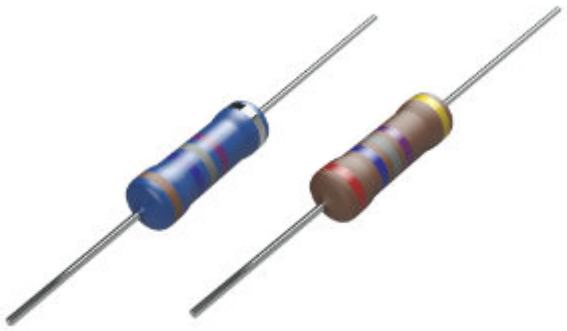
SPECIAL RESISTORS

LMG - Series — High Ohmic / High Voltage Metal Glaze Leaded Resistors

FEATURES

- Resistance to 1GΩ
- Operating Voltage up to 10KV
- Power Rating to 3 Watts
- Good High Pulse Loading Capability
- Silicone Coating, Option Flame Proof
- RoHS - compliant



RATED VALUES (IEC 60115-1)

Resistance Range	Ω	1KΩ to 1GΩ (see Tolerance- / Resistance Range)
Resistance Tolerance	%	±1%; ±2%; ±5%
Temperature Coefficient	ppm/°C	±200ppm/°C ≤ ±500ppm/°C > 10MΩ
Operating Voltage (U_{max})	V	10.000V or √(P x R)
Insulation Resistance (R_{ins})	Ω	>1GΩ
Operating Temperature Range (T)	°C	-55°C to 175°C

Type	U_{max}	$U_{overload}$	U_{ins}	U_{ins}	Power P_{70}	Tolerance- / Resistance Range*		
	(V_{DC})	(V)	(V), Epoxy	(V), Silicone	(W)	±1,0% / Ω	±2,0% / Ω	±5,0% / Ω
LMG0207	1700	2500	400V	500V	0,50	1K00 - 1G0		
LMG0411	4000	4500	500V	700V	1,00	1K0 - 1G0		
LMG0414	5000	10000	700V	1200V	2,00	1K0 - 1G0		
LMG0617	10000	14000	700V	1200V	3,00	1K0 - 1G0		
*E24 and E96, other values on request								

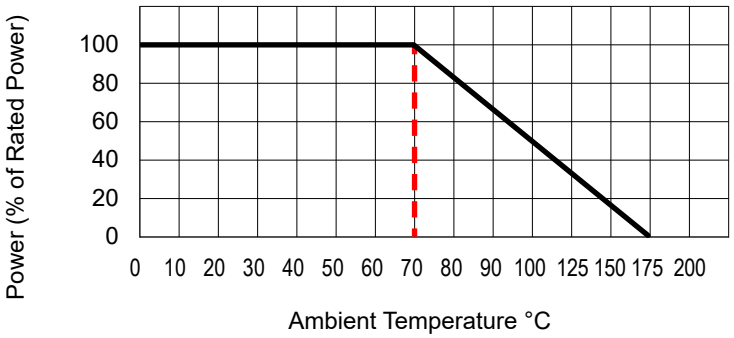
CONSTRUCTION

Resistance Material	Metal Glaze (Metal Compound, Borosilicate)
Carrier Material	High Purity Ceramic (Alumina)
Coating (blue)	Epoxy*
Coating (brown)	Silicone, flame proof (UL94V)*
Lead Wires	Tin Plated Copper Wire
Marking	Colour Ring - Coding in accordance with IEC 60062

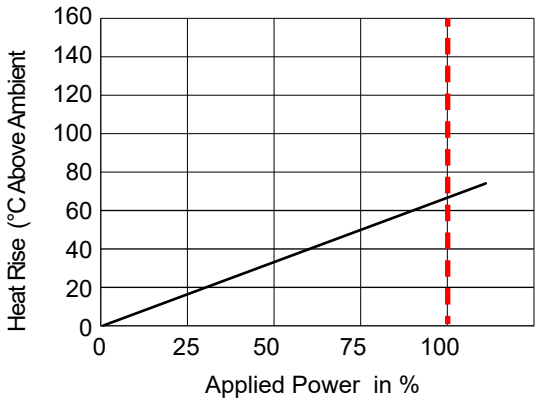
*Cleaning with ethanol, isopropanol, methanol, water-based cleansing agents.
Pay attention to the different impact times of cleaners.

electronic sensor + resistor GmbH, Siemensstr. 10, 85521 Ottobrunn, Tel.: +49 89 / 611 808-0, Fax: +49 89 / 611 808-11, E-Mail: sales@esr.info

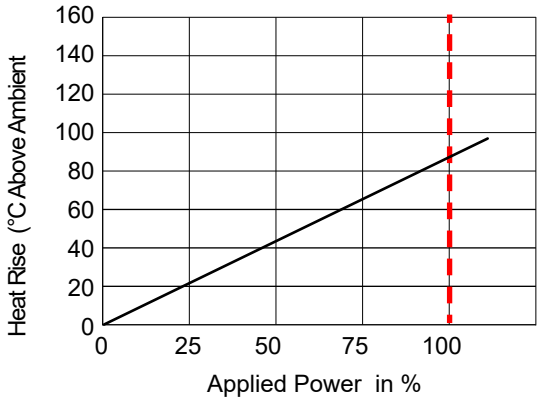
POWER DERATING CURVE



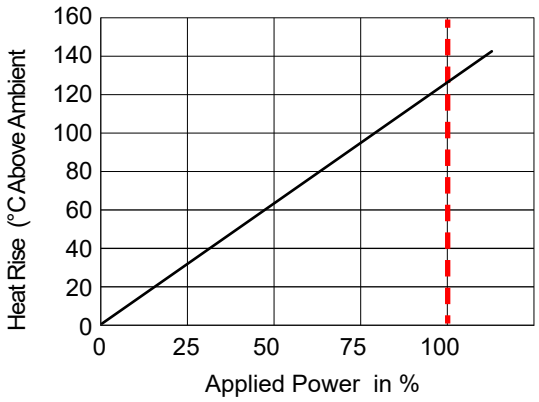
HOT-SPOT TEMPERATURE LMG0207



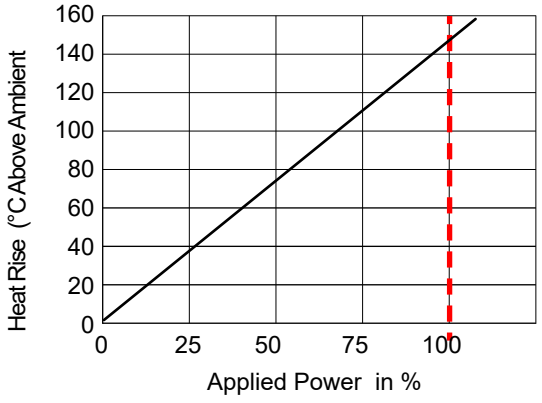
HOT-SPOT TEMPERATURE LMG0411



HOT-SPOT TEMPERATURE LMG0414



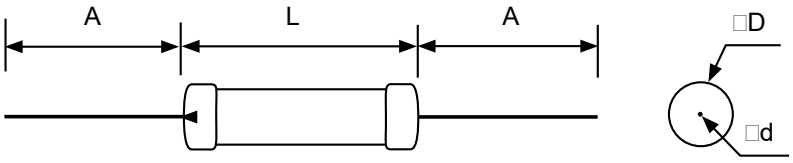
HOT-SPOT TEMPERATURE LMG0617



electronic sensor + resistor GmbH, Siemensstr. 10, 85521 Ottobrunn, Tel.: +49 89 / 611 808-0, Fax: +49 89 / 611 808-11, E-Mail: sales@esr.info

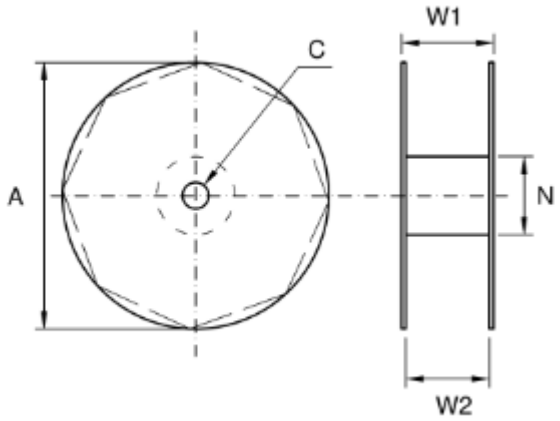
LMG - Series High Ohmic / High Voltage Metal Glaze Leaded Resistors

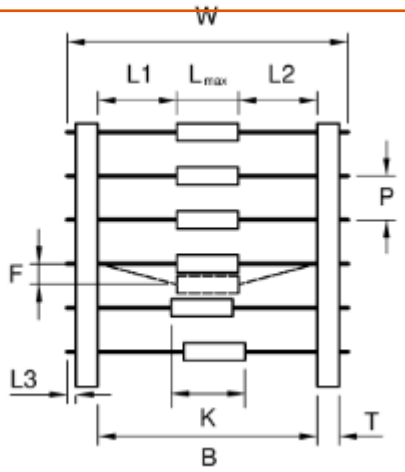
DIMENSIONS



	D	L	d	A
LMG0207	2,3 ±0,5	6,3 ±0,5	0,55 ±0,05	min. 26,0
LMG0411	3,2 ±0,5	9,0 ±0,5	0,65 ±0,05	min. 24,0
LMG0414	4,5 ±0,5	11,5 ±1,0	0,78 ±0,05	min. 35,0
LMG0617	5,0 ±0,5	15,5 ±1,0	0,78 ±0,05	min. 32,0
All Dimensions in mm				

TAPING & PACKAGING DIMENSIONS





Reel	A	C	N	W1	W2
12“	305,0 ±1,5	15,0 ±1,0	51,0 ±1,0	W2 +5...+8	B +1,5 ... +8

Tape

Lead Extension (L3)	0,5 max.
Centring Tolerance (K)	±1,5
Tape (T)	5,0...6,5
Deflection (F)	1,2 max.
L1 = (B - L_{max} + L2) ±1,5	
L2 = (B - L_{max} + L1) ±1,5	

Diameter of Resistor Body - Spacing

Diameter of the Resistor Body (D)	≤ 5,0 ±0,5	> 5,0 ±0,5
Distance between Resistors (P)	5,0 ±0,5	10,0 ±0,5

Tape Spacing

Type	LMG0207	LMG0411	LMG0414	LMG0617
Type Spacing (B)	52,0	52,0	73,0	73,0

All Dimension in mm

PACKAGING UNITS

Type	LMG0207	LMG0411	LMG0414	LMG0617
Quantity: Ammo Pack / T&R	5000/5000	1000/2500	1000/2000	1000/1000

electronic sensor + resistor GmbH, Siemensstr. 10, 85521 Ottobrunn, Tel.: +49 89 / 611 808-0, Fax: +49 89 / 611 808-11, E-Mail: sales@esr.info

LMG - Series — High Ohmic / High Voltage Metal Glaze Leaded Resistors

PERFORMANCE

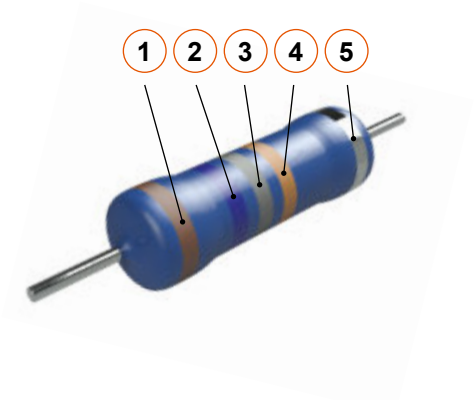
IEC 60115-1	TEST	Conditions of Test	Specification ΔR
4.13	Short Time Overload	2,5 x Rated Operating Voltage U_{max}, 5s	±(1,0% R +0,05Ω)
4.16	Terminal Strength	2,5 kg (Pull Test), max. 10 Sec.	±(0,5% R)
4.17	Solderability	245°C, max. 2 Seconds	95% Kontaktabdeckung
4.18	Soldering Resistance	260±5°C, max. 2,5 Seconds	±(1,0% R +0,05Ω)
4.23.2	Damp Heat	40±2°C; 90% - 100% r.F.; 1,5h „ON“ und 0,5h ”OFF”, 1000h	±(5,0% R +0,05Ω)
4.24	Moisture Resistance	40±2°C, 90-95% r.F., Rated Power, 1000h (Silicone Type)	±(1,5% R +0,05Ω)
4.24	Moisture Resistance	40±2°C, 90-95% r.F., Rated Power, 1000h (Epoxy Type)	±(5,0% R +0,05Ω)
4.25	Endurance	+70°C, U_{max} 1,5h „ON“ and 0,5h ”OFF”, 1000h	±(3,0% R +0,05Ω)
4.39	Pulse Load	2,5 Sek. „ON“ / 2,5Sek. ”OFF, 10 Cycles (0,01µF Discharge Capacitor) DC 3KV LMG0206; DC 10KV LMG0309, LMG0411, LMG0515	±(10,0% R +0,05Ω)
4.6	Insulation Strength	U_{ins} see Page 1	
	Storage cCnditions	25±2°C, maximum 80% r.F.	

OPTIONENS

Lead Wires	Pre-made/Custom-made Leads (on Request)

MARKING

	5 Ring Marking			4 Ring Marking		
Ring	1 - 3	4	5	1 - 2	3	4
Silver		$x10^{-2}$	±10,0%		$x10^{-2}$	±10,0%
Gold		$x10^{-1}$	±5,0%		$x10^{-1}$	±5,0%
Black	0	$x10^{0}$		0	$x10^{0}$	
Brown	1	$x10^{1}$	±1,0%	1	$x10^{1}$	±1,0%
Red	2	$x10^{2}$	±2,0%	2	$x10^{2}$	±2,0%
Orange	3	$x10^{3}$		3	$x10^{3}$	
Yellow	4	$x10^{4}$		4	$x10^{4}$	
Green	5	$x10^{5}$	±0,50%	5	$x10^{5}$	
Blue	6	$x10^{6}$	±0,25%	6	$x10^{6}$	
Violet	7	$x10^{7}$	±0,10%	7	$x10^{7}$	
Grey	8	$x10^{8}$		8	$x10^{8}$	
White	9	$x10^{9}$		9	$x10^{9}$	



Example: 168KOhm ±10%

ORDERING INFORMATION

LMG0207 100M00 1% TK500 E T (LMG0207 100MΩ; ±1%; ±500ppm°C; Epoxy; Tape on Reel)

Type	Special	Resistance Value	Tolerance	Temperat. Coefficient	Power	Options	Packaging
LMG0207	-	1K0000 100M00 1G0000	1% 2% 5%	TK200 5	-	E - (Epoxy) S - (Silicone)	T - (T&R) A - Ammo Pack