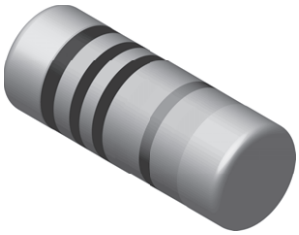
Fusible Carbon Film MELF Resistors



FEATURES

- Fusible resistor for constant voltage designed for overload protection
- Special trimming to provide the fusing characteristic
- Flame retardant coating
- Pure tin termination on nickel barrier, plated on press fit steel caps
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

TECHNICAL SPECIFICATIONS	
DESCRIPTION	**LCM0207SI**
DIN size	0207
Metric size code	RC6123M
Resistance range	1 Ω to 9.1 Ω
Resistance tolerance	± 5 %
Temperature coefficient	+300 ppm/K / -250 ppm/K
Rated dissipation, P_{70} (1)	0.250 W
Operating voltage, $U_{max.}$ AC_{RMS}/DC	$\sqrt{P \times R}$
Permissible film temperature, $\vartheta_{F\ max.}$ (1)	125 °C
Operating temperature range (1)	-55 °C to 125 °C
Permissible voltage against ambient (insulation): 1 min; U_{ins}	500 V
Minimum overload to fuse	4 W
Time to fuse	≤ 15 s
Failure rate: $FIT_{observed}$	≤ 1 x 10^{-9}/h

Note

(1) Please refer to APPLICATION INFORMATION below.

APPLICATION INFORMATION

When the resistor dissipates power, a temperature rise above the ambient temperature occurs, dependent on the thermal resistance of the assembled resistor together with the printed circuit board. The rated dissipation applies only if the permitted film temperature is not exceeded.

These resistors do not feature a limited lifetime when operated within the permissible limits. However, resistance value drift increasing over operating time may result in exceeding a limit acceptable to the specific application, thereby establishing a functional lifetime.

TEMPERATURE COEFFICIENT AND RESISTANCE RANGE

TYPE / SIZE	TCR	TOLERANCE	RESISTANCE	E-SERIES
LCM0207SI	+300 ppm/K / -250 ppm/K	± 5 %	1 Ω to 9.1 Ω	E24

PACKAGING

TYPE / SIZE	CODE	QUANTITY	PACKAGING STYLE	WIDTH	PITCH	PACKAGING DIMENSIONS
LCM0207SI	BP	1500	Antistatic blister tape acc. IEC 60286-3, Type 2a	12 mm	4 mm	Ø 180 mm/7"
	BS	7500				Ø 330 mm/13"

PART NUMBER AND PRODUCT DESCRIPTION

Part Number: LCM0207B01008JBP00

L	C	M	0	2	0	7	B	0	1	0	0	8	J	B	P	0	0

TYPE / SIZE	VERSION	TCR	RESISTANCE	TOLERANCE	PACKAGING
LCM0207	**B** = SI; fusible	**0** = neutral See datasheet for TC value	3 digit value 1 digit multiplier **Multiplier** **8** = $*10^{-2}$	**J** = ± 5 %	**BP** **BS**

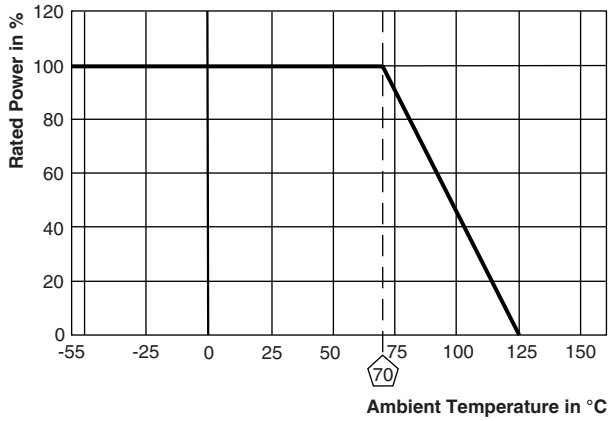
Product Description: LCM0207SI 1R0 5 % BP

LCM0207SI	1R0	5 %	BP
TYPE / SIZE	RESISTANCE	TOLERANCE	PACKAGING
LCM0207SI	**1R0** = 1 Ω	**± 5 %**	**BP** **BS**

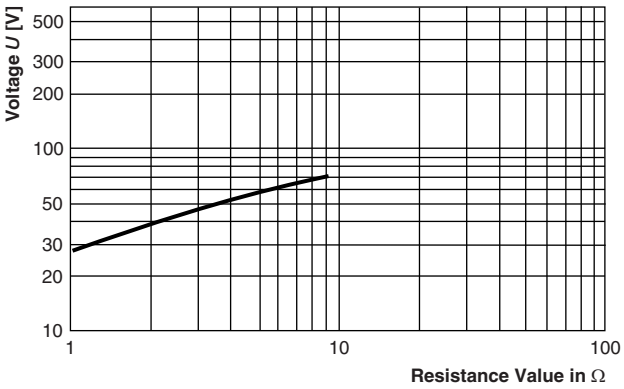
Note

- Products can be ordered using either the PART NUMBER or the PRODUCT DESCRIPTION.

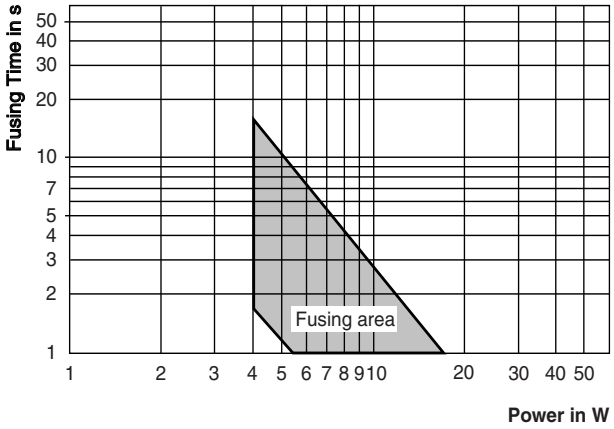
FUNCTIONAL PERFORMANCE



Derating



$U_{max.}$ at and after Fusing and max. Pulse Voltage



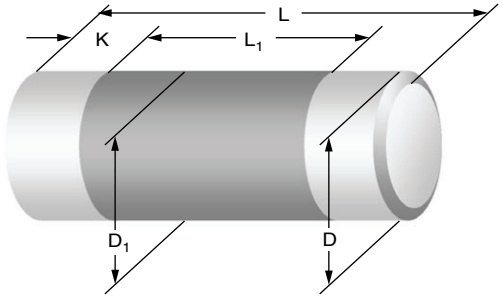
Fusing Performance

TEST PROCEDURES AND REQUIREMENTS				
EN 60115-1 CLAUSE	**IEC 60068-2 (1) TEST METHOD**	**TEST**	**PROCEDURE**	**REQUIREMENTS PERMISSIBLE CHANGE (ΔR)**
			Stability for product types:	
			LCM0207SI	1 Ω to 9.1 Ω
4.5	-	Resistance	-	± 5 % *R*
4.8	-	Temperature coefficient	At (20 / -55 / 20) °C and (20 / 125 / 20) °C	+300 ppm/K / -250 ppm/K
4.25.1	-	Endurance at 70 °C	$U = \sqrt{P_{70} \times R}$; 1.5 h on; 0.5 h off; 70 °C; 1000 h	± 2 % *R*
4.25.3	-	Endurance at upper category temperature	125 °C; 1000 h	± 2 % *R*
4.24	78 (Cab)	Damp heat, steady state	(40 ± 2) °C; 56 days; (93 ± 3) % RH	± 2 % *R*
4.19	14 (Na)	Rapid change of temperature	30 min at LCT; 30 min at UCT; LCT = -55 °C; UCT = 125 °C; 5 cycles	± 0.5 % *R*
4.18	58 (Td)	Resistance to soldering heat	Solder bath method; (260 ± 5) °C; (10 ± 1) s	± 0.25 % *R*

Note

(1) The quoted IEC standards are also released as EN standards with the same number and identical contents.

DIMENSIONS

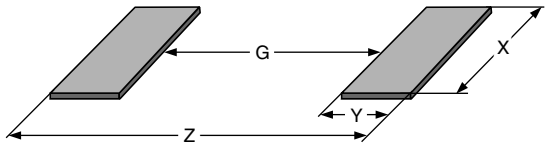


DIMENSIONS AND MASS						
TYPE / SIZE	L (mm)	$D_{MAX.}$ (mm)	$L_{1\ MIN.}$ (mm)	D_1 (mm)	K (mm)	MASS (mg)
LCM0207SI	5.8 + 0/- 0.3	2.2	2.6	D + 0/- 0.2	1.25 ± 0.2	77

Note

- Color code marking is applied according to IEC 60062 (1) in four bands. Each color band appears as a single solid line, voids are permissible if at least 2/3 of the band is visible from each radial angle of view. The last color band for tolerance is approximately 50 % wider than the other bands. An additional 5th yellow band identifies the special fusible type.

PATTERN STYLES FOR MELF RESISTORS



RECOMMENDED SOLDER PAD DIMENSIONS								
TYPE / SIZE	WAVE SOLDERING				REFLOW SOLDERING			
	G (mm)	Y (mm)	X (mm)	Z (mm)	G (mm)	Y (mm)	X (mm)	Z (mm)
LCM0207SI	-	-	-	-	2.6	2.0	2.4	6.6

Notes

- The given solder pad dimensions reflect the considerations for board design and assembly as outlined e.g. in standards IEC 61188-5-x (1), or in publication IPC-7351.

(1) The quoted IEC standards are also released as EN standards with the same number and identical contents.

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