

High Pulse Load MELF Resistor



KEY BENEFITS

- Approved to the safety requirements of IEC 60065, 14.1.a* (= VDE 0860, 14.1.a), VDE-REG.-Nr. B583
- Special carbon film technology
- Up to 10 kV or 3 kW single pulse capability
- ESD capability: 16 kV, human body model
- Surge voltage capability up to 10 kV 1.2/50 μ s pulse
- Lead (Pb)-free and RoHS-compliant

APPLICATIONS

- Automotive
- Telecommunication
- Industrial
- Medical equipment

RESOURCES

- Datasheet: CMB 0207 - www.vishay.com/doc?28755
- For technical questions contact melf@vishay.com
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



High Pulse Load Carbon Film MELF Resistors



FEATURES

- Approved to the safety requirements of IEC 60065, 14.2.a (= VDE 0860, 14.1.a) VDE-REG.-Nr. B583
- AEC-Q200 qualified
- Special carbon film technology
- Up to 3 kW single pulse capability
- ESD capability: 16 kV, human body model
- Sulfur resistance verified according to ASTM B 809
- Surge voltage capability up to 10 kV 1.2/50 μ s pulse

CMB 0207 carbon film MELF resistors with advanced pulse load capability are the perfect choice for the protection of circuitry with signal and mains input lines from surge pulses. The resistors are also suitable for circuits exposed to high levels of electromagnetic interference or electro-static discharge. The applications are in all fields of automotive, telecommunication, industrial and medical equipment.

APPLICATIONS

- Automotive
- Telecommunication
- Industrial
- Medical equipment

TECHNICAL SPECIFICATIONS	
DESCRIPTION	CMB 0207
DIN size	0207
Metric size code	RC6123M
Resistance range	2.2 Ω to 1.5 M Ω
Resistance tolerance	\pm 5 %; \pm 2 %; \pm 1 %
Temperature coefficient	see TCR graph
Rated dissipation, P_{70} ⁽¹⁾	1.0 W
Operating voltage, $U_{max. AC_{RMS}/DC}$	500 V
Permissible film temperature, $\vartheta_{F max.}$ ⁽¹⁾	155 °C
Operating temperature range ⁽¹⁾	-55 °C to 155 °C
Permissible voltage against ambient (insulation): 1 min; U_{ins}	750 V
Failure rate: FIT _{observed}	\leq 0.1 x 10 ⁻⁹ /h

Note

⁽¹⁾ Please refer to APPLICATION INFORMATION below.

APPLICATION INFORMATION

The power dissipation on the resistor generates a temperature rise against the local ambient, depending on the heat flow support of the printed-circuit board (thermal resistance). The rated dissipation applies only if the permitted film temperature is not exceeded. Furthermore, a high level of ambient temperature or of power dissipation may raise the temperature of the solder joint, hence special solder alloys or board materials may be required to maintain the reliability of the assembly.

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. At the maximum permissible film temperature of 155 °C the useful lifetime is specified for 8000 h. The designer may estimate the performance of the particular resistor application or set certain load and temperature limits in order to maintain a desired stability.