

SMD MELF Resistors

Precision Thin Film Resistors
With **High Stability**



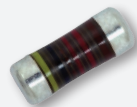
MM PRECISION

Precision and Professional
Thin Film Resistors With
High Stability



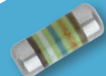
SMM

High Single Pulse Load
Capability Up to 3000 W



CMB 0207

Established Reliability,
IECQ-CECC Approval to EN 140401-
803, Version E, Failure Rate Level E8



SMM 0204...EN803

Professional Thin Film Resistors
With **High Stability**



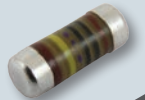
MM PROFESSIONAL

Ultra High Precision
and **Stability**



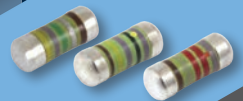
UMA, UMB

High Voltage Thin Film
Resistor Up to 1000 V



MMB 0207 HV

High Reliability,
ESA Approved
to ESCC 4001/022





MS1...ESCC



SMD MELF RESISTORS

Focus Products

SMD MELF Resistors				
Series	Type	Sizes	Resistance Range	Power Rating
MM Professional MM Precision 	Thin film MELF	0102, 0204, 0207	0.1 Ω to 15 MΩ	0.3 W to 1 W
	Precise and stable thin film resistor; IECQ-CECC approval to EN 140401-803; AEC-Q200 qualified			
SMM0207 SMM0204 SMM0102 	Thin film MELF	0102, 0204, 0207	0.16 Ω to 10 MΩ	0.2 W to 1 W
	Precise and stable thin film resistor; AEC-Q200 qualified			
UM 	Thin film MELF	0204, 0207	22 Ω to 390 kΩ	0.25 W to 0.4 W
	Ultra high precision; IECQ-CECC approval to EN 140401-803			
SMM 0204...EN803 E0 	Thin film MELF	0204	0.22 Ω to 10 MΩ	0.4 W
	High reliability; IECQ-CECC approval to EN 140401-803			
SMM 0204...EN803 E8 	Thin film MELF	0204	1 Ω to 2.21 MΩ	0.25 W
	Established reliability; IECQ-CECC approval to EN 140401-803, version E, failure rate level E8			
MS1...EN803 E8 	Thin film MELF	0204	1 Ω to 2.21 MΩ	0.25 W
	Lead (Pb) bearing resistor with established reliability			
MS1...ESCC 	Thin film MELF	0204	2.21 Ω to 5.11 MΩ	0.25 W
	High reliability; ESA approved to ESCC 4001/022			
MM HF 	Thin film MELF	0102, 0204, 0207	1.5 Ω to 475 Ω	0.3 W to 1 W
	High frequency resistor suitable up to 10 GHz			
MM VG03 	Thin film MELF	0102, 0204, 0207	1 Ω to 10 MΩ	0.2 W to 0.4 W
	Established reliability; IECQ-CECC approval to EN 140401-803, version E, failure rate level E6			
MMA 0204 HT 	Thin film MELF	0204	47 Ω to 100 kΩ	0.5 W
	High temperature; IECQ-CECC approval to EN 140401-803; AEC-Q200 qualified			
MM HV 	Thin film MELF	0204, 0207	340 kΩ to 10 MΩ	0.4 W to 1 W
	High voltage thin film resistor			
CM 	Carbon film MELF	0204, 0207	2.2 Ω to 1.5 MΩ	0.4 W to 1 W
	High pulse load capability; AEC-Q200 qualified			
CMA HF 	Carbon film MELF	0204	47 Ω to 300 Ω	0.4 W
	Pulse load resistor for high frequency applications up to 10 GHz			

SMD MELF Jumper Resistors				
Series	Type	Sizes	Resistance Range	Maximum Current
MM 	Thin film MELF	0102, 0204, 0207	< 10 mΩ	Up to 5 A
	SMD jumper with high current load capability			
OMM0207 OMM0204 OMM0102 	Thin film MELF	0102, 0204, 0207	< 10 mΩ	Up to 5 A
	SMD jumper with high current load capability			



SMD MELF RESISTORS

Focus Products

Maximum Voltage	Tolerance	TCR	Load Life Stability	Operating Temperature Range
150 V to 350 V	± 0.1 % to ± 5 %	± 15 ppm/°C to ± 100 ppm/°C	Down to ≤ ± 0.05 % (1000 h at P_{70})	-55 °C to +155 °C
150 V to 350 V	± 0.1 % to ± 5 %	± 15 ppm/°C to ± 100 ppm/°C	Down to ≤ ± 0.05 % (1000 h at P_{70})	-55 °C to +155 °C
200 V to 350 V	± 0.02 % to ± 0.25 %	± 5 ppm/°C to ± 15 ppm/°C	Down to ≤ ± 0.02 % (1000 h at P_{70})	-55 °C to +125 °C
200 V	± 0.1 % to ± 1 %	± 15 ppm/°C to ± 50 ppm/°C	Down to ≤ ± 0.05 % (1000 h at P_{70})	-55 °C to +125 °C
200 V	± 0.1 % to ± 1 %	± 15 ppm/°C to ± 50 ppm/°C	Down to ≤ ± 0.25 % (1000 h at P_{70})	-55 °C to +125 °C
200 V	± 0.1 % to ± 1 %	± 15 ppm/°C to ± 50 ppm/°C	Down to ≤ ± 0.25 % (1000 h at P_{70})	-55 °C to +125 °C
200 V	± 0.1 % to ± 1 %	± 15 ppm/°C to ± 50 ppm/°C	Down to ≤ ± 0.35 % (1000 h at P_{70})	-55 °C to +125 °C
Limited by P_{70}	± 1 % to ± 2 %	± 50 ppm/°C	Down to ≤ ± 0.25 % (1000 h at P_{70})	-55 °C to +155 °C
150 V to 300 V	± 0.1 % to ± 1 %	± 15 ppm/°C to ± 50 ppm/°C	Down to ≤ ± 0.15 % (1000 h at P_{70})	-55 °C to +125 °C
200 V	± 0.5 % to ± 1 %	± 25 ppm/°C to ± 50 ppm/°C	Down to ≤ ± 0.1 % (1000 h at P_{70})	-55 °C to +175 °C
500 V to 1000 V	± 1 %	± 50 ppm/°C	Down to ≤ ± 0.25 % (1000 h at P_{70})	-55 °C to +155 °C
200 V to 500 V	± 1 % to ± 5 %	See datasheet	Down to ≤ ± 0.5 % (1000 h at P_{70})	-55 °C to +155 °C
Limited by P_{70}	± 2 %	-250 ppm/°C	Down to ≤ ± 1 % (1000 h at P_{70})	-55 °C to +155 °C



SMD MELF Resistors - The World's Most Reliable, Predictable, and High Performing Film Resistors

Advantages of Vishay SMD MELF Resistors

- Three industry standard sizes: 0102 (RC2211M), 0204 (RC3715M), 0207 (RC6123M)
- Broadest resistance range: 0.1 Ω to 15 M Ω
- Tight tolerance down to $\pm 0.02\%$
- TCR down to ± 5 ppm/K
- Superior load life stability down to $\pm 0.02\%$
- Excellent stability under pulse load up to 3000 W
- Carbon film pulse type, suitable up to 10 000 V
- High frequency types, suitable > 10 GHz

For the Following Applications

- Industrial: Drives, safety circuits, PLC, cap rail applications, I/O, interfaces, etc.
- Automotive: Drives, safety circuits, DC/DC, onboard chargers, BMS, lambda probes, etc.
- Smart Power: Power inverters, e-meters, grid controls, etc.
- Avionics and Space: Flight control systems



SMD MELF resistors and their predictable behavior offer high reliability for functional safety requirements in automotive, industrial, power, and drive applications



Pulse and long term performance of SMD MELF resistors optimize voltage and small signal conditioning circuits in all kinds of metering, monitoring, and drive applications

Sulfur resistant
(per ASTM B809-95 humid vapor test)
(according to ASTM B 809)

GREEN
(5-2008)



Approved to
EN 140401-803

IATF 16949
certified
manufacturing line

**AEC-Q200
QUALIFIED**



**HALOGEN
FREE**

Approved to
ESCC 4001/022

Useful Links

- MELF Resistors For Pulse Load Applications Infograph www.vishay.com/doc?48186
- MELF Resistors - The World's Most Reliable and Predictable, High-Performing Film Resistors www.vishay.com/doc?28802
- Attain Audiophile-Level Music With Vishay MELF Resistors www.vishay.com/doc?48111
- Military- and Space-Qualified Passive Components Selector Guide www.vishay.com/doc?49605
- Color Code Card for Draloric Beyschlag Resistors www.vishay.com/doc?49617