

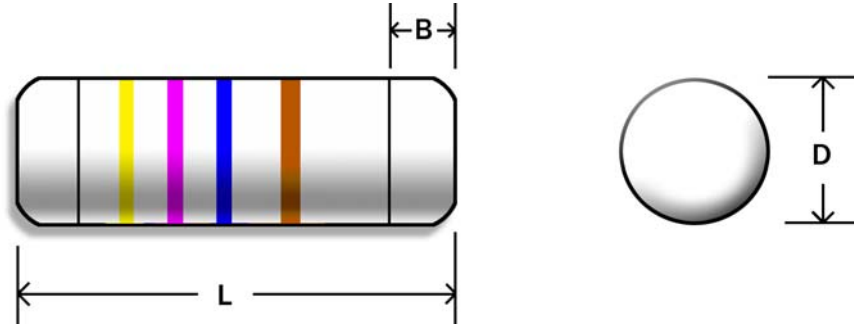
MMR16, 14, 13, 12

Specifications Per

IEC 115-1 115-2
CECC 40101
DIN 44061

Features

- ※ SMD enabled structure
- ※ Conformal Multi-layer Coating Against Humidity
- ※ Excellent Solderability Termination
- ※ 5% is 3-band coded, 1% and under is 4-band coded



Dimensions

Type	Body Length (L)	Body Diameter (D)	Soldering spot (B)	Net Weight Per 1000 pcs
MMR16	3.45mm±0.1mm	1.35±0.1mm	0.6mm Min.	17 grams
MMR14	3.45mm±0.1mm	1.35±0.1mm	0.6mm Min.	17 grams
MMR13	5.9mm±0.2mm	2.2±0.1mm	1.0mm Min.	66 grams
MMR12	5.9mm±0.2mm	2.2±0.1mm	1.0mm Min.	66 grams

General Specifications

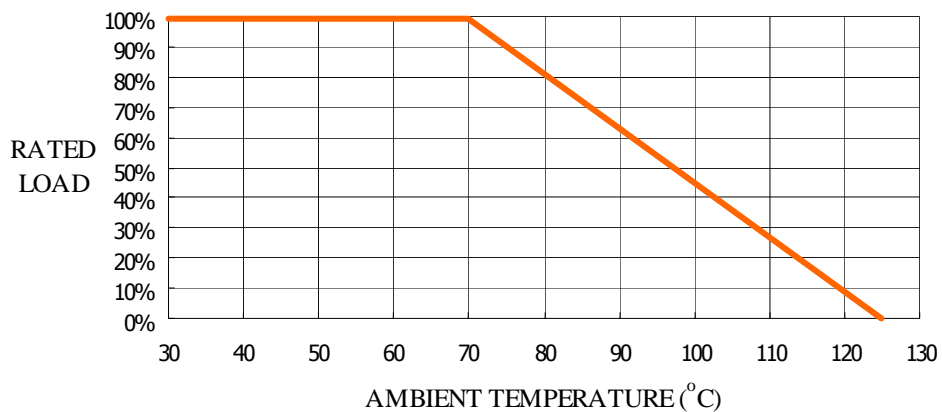
Type	Power Rating (at 70°C)	Max. Working Voltage	Max. Overload Voltage	Resistance Range Min.	Resistance Range Max.	Resistance Tolerance	Standard Resistance Value
MMR16	1/6W	200V	400V	0 & 0.1Ω	1MΩ	±1%	E-24/E-96
						±2%, 5%	E-24
MMR14	1/4W	200V	400V	0 & 0.1Ω	1MΩ	±1%	E-24/E-96
						±2%, 5%	E-24
MMR13	1/3W	250V	500V	0 & 0.1Ω	10MΩ	±1%	E-24/E-96
						±2%, 5%	E-24
MMR12	1/2W	250V	500V	0 & 0.1Ω	10MΩ	±1%	E-24/E-96
						±2%, 5%	E-24



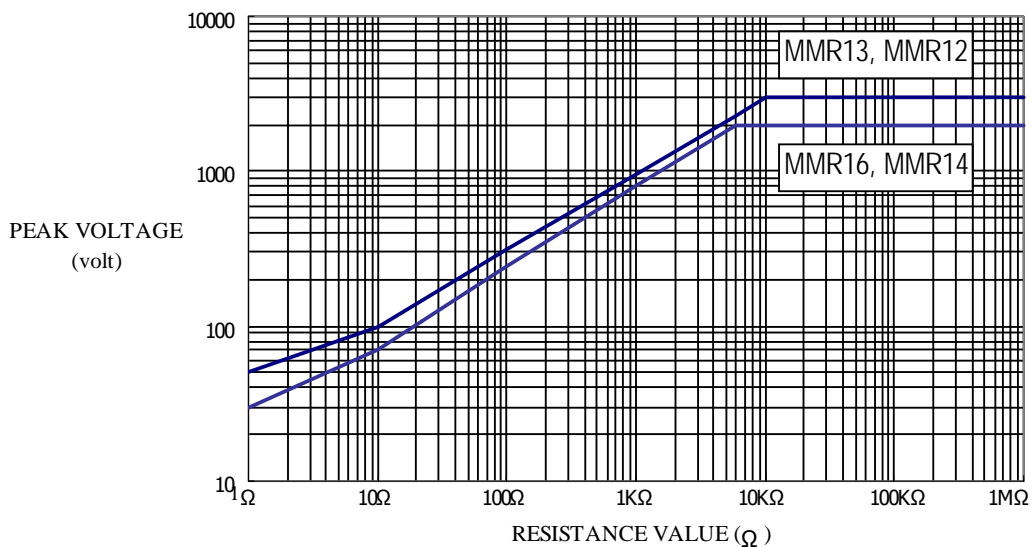
MMR16, 14, 13, 12

LEADFREE
RoHS Compliant

POWER DERATING CURVE



1.2/50μs PEAK PULSE





Performance Specifications

Characteristics		Limits			
Temperature Coefficient	±1%, 2%	±50PPM /°C			
	±5%	±100PPM /°C			
Film Temperature	MMR16	MMR14	MMR13	MMR12	
	125°C	125°C	125°C	140°C	
Short Time Overload	±(0.5%+0.05R)				
Dielectric Withstanding Voltage	MMR16, MMR14: 200VAC MMR13, MMR12: 500VAC				
Insulation Resistance	10 ⁴ MΩ				
Temperature Cycling	±(0.25%+0.05R)				
Humidity	±(1.5%+0.05R)				
Load Life In Humidity	±(1.5%+0.05R)				
Load Life 1,000 hours (at 70°C)	±(1.5%+0.05R)				
Resistance To Soldering Heat	±(0.5%+0.05R)				
Solderability	95% Min.				
Vibration	±(1%+0.1R)				
Terminal Strength	±(0.5%+0.05R)				
Thermal Shock	±(0.5%+0.05R)				

Part Numbering System

M M R 16 X X X J T

Product Type
Metal Film MELF Resistor

Packaging	
CODE	DETAIL
T	Tape & Reel (paper carrier)
TE	Tape & Reel (plastic carrier)

SIZE	
CODE	WATTAGE
16	1/6 watt
14	1/4 watt
13	1/3 watt
12	1/2 watt

RESISTANCE VALUE

3-DIGIT CODE for 5% tolerance E₂₄ X X X

CODE	1R0	10R	470	101	102	103	104	105	000
VALUES	1Ω	10Ω	47Ω	100Ω	1KΩ	10KΩ	100KΩ	1MegΩ	JUMPER

First two (2) digits are significant figures and third digit is number of zeros.
Letter R indicates decimal values under 100 ohms.

TOLERANCE	
CODE	%
F	-1%
G	-2%
J	-5%
* Omit tolerance for jumper	