



LEADFREE
RoHS Compliant

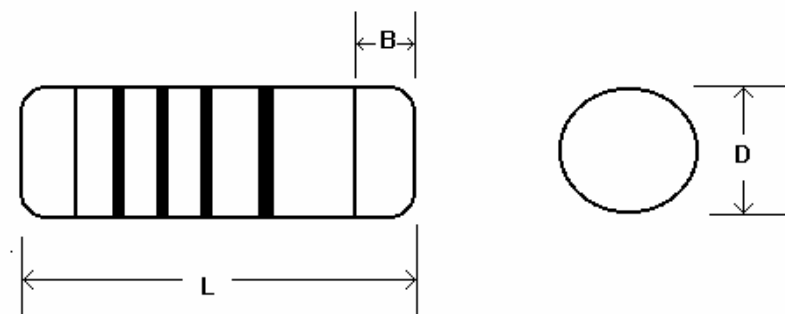
MPR16, 14, 13, 12

Specifications Per

IEC 115-1 115-2
CECC 40101
DIN 44061

Features

- ※ SMD enabled structure
- ※ Conformal Multi-layer Coating Against Humidity
- ※ Excellent Solderability Termination



Dimensions

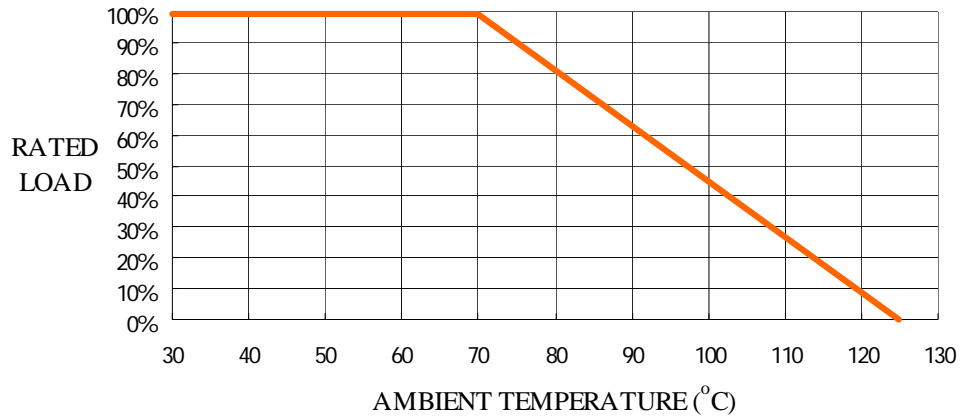
Type	Body Length (L)	Body Diameter (D)	Soldering spot (B)	Net Weight Per 1000 pcs
MPR16	3.45mm±0.1mm	1.35±0.1mm	0.6mm Min.	17 grams
MPR14	3.45mm±0.1mm	1.35±0.1mm	0.6mm Min.	17 grams
MPR13	5.9mm±0.2mm	2.2±0.1mm	1.0mm Min.	66 grams
MPR12	5.9mm±0.2mm	2.2±0.1mm	1.0mm Min.	66 grams

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
MPR16	1/6W	200V	400V	10Ω	1MΩ	±0.5%	E-24/E-192
				22.1Ω	511KΩ	±0.25%	
				43.2Ω	499KΩ	±0.1%	
MPR14	1/4W	200V	400V	10Ω	1MΩ	±0.5%	E-24/E-192
				22.1Ω	511KΩ	±0.25%	
				43.2Ω	499KΩ	±0.1%	
MPR13	1/3W	300V	500V	10Ω	1MΩ	±0.5%	E-24/E-192
				15Ω	1MΩ	±0.25%	
				33.2Ω	511KΩ	±0.1%	
MPR12	1/2W	300V	500V	10Ω	1MΩ	±0.5%	E-24/E-192
				15Ω	1MΩ	±0.25%	
				33.2Ω	511KΩ	±0.1%	



POWER DERATING CURVE

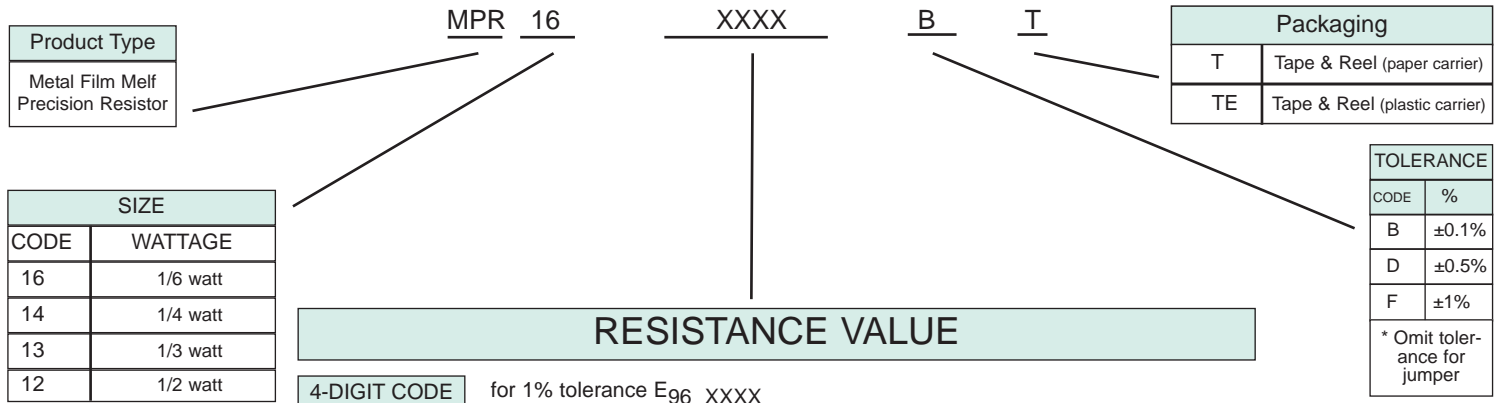


Performance Specifications

Characteristics	Limits	
Temperature Coefficient	±50, ±25, ±15, ±10 PPM /°C	
Film Temperature	MPR16, MPR14	MPR13, MPR12
	125°C	125°C
Short Time Overload	±(0.25%+0.05R)	
Dielectric Withstanding Voltage	MPR16, MPR14: 300VAC MPR13, MPR12: 500VAC	
Insulation Resistance	10 ⁴ MΩ	
Temperature Cycling	±(0.25%+0.05R)	
Humidity	±(0.5%+0.05R)	
Load Life In Humidity	±(0.5%+0.05R)	
Load Life 1,000 hours (at 70°C)	±(0.5%+0.05R)	
Resistance To Soldering Heat	±(0.25%+0.05R)	
Solderability	95% Min.	
Vibration	±(0.25%+0.1R)	
Terminal Strength	±(0.25%+0.05R)	
Thermal Shock	±(0.25%+0.05R)	

MPR16, 14, 13, 12

Part Numbering System



Product Type
Metal Film Melf Precision Resistor

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

RESISTANCE VALUE

4-DIGIT CODE for 1% tolerance E₉₆ XXXX

CODE	3R01	10R0	1000	1001	1002	1003	1004	1332	3243	1214	5114
VALUES	3.01Ω	10Ω	100Ω	1KΩ	10KΩ	100KΩ	1MegΩ	13.3KΩ	324KΩ	1.21MegΩ	5.11MegΩ

First three (3) digits are significant figures and fourth digit is number of zeros.
Letter "R" indicates decimal values under 100 ohms.

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

TOLERANCE	
CODE	%
B	±0.1%
D	±0.5%
F	±1%
* Omit tolerance for jumper	