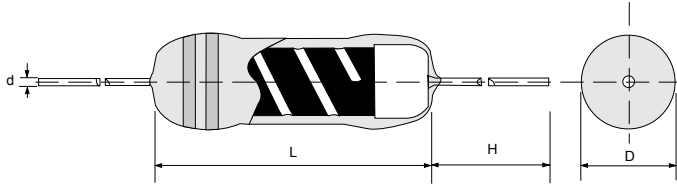


PPR Pulse Protective Resistor

Quality • Reliability
Cost-Down via Technology

PPR



Features

- Application: high-frequency, sharp-impulse circuits.
- To protect active components in missile detonators, triac switching circuits, etc.
- Offer every better aspect of performance than carbon composition resistor.
- No "sintering effect" caused by high surge that greatly decreases resistance value.
- Replaces carbon composition resistor.
- Conformal multi-layer non-flammable coating.
- Products meet RoHS requirements and do not contain substances of very high concern identified by European Chemicals Agency

DIMENSIONS

Type	Body Length (L, mm)	Body Diameter (D, mm)	Lead Wire Length (H, mm)	Lead Wire Diameter (d, mm)	Net Weight Per 1000 Pcs
PPR16	3.20 ± 1.0	1.9 ± 0.2	28 ± 3.0	0.45 ± 0.02	145 Grams
PPR25	6.50 ± 1.0	2.6 ± 0.3	26 ± 3.0	0.55 ± 0.02	300 Grams
PPR52	6.50 ± 1.0	2.6 ± 0.3	26 ± 3.0	0.55 ± 0.02	300 Grams
PPR51	8.80 ± 1.0	3.2 ± 0.2	26 ± 3.0	0.70 ± 0.03	340 Grams
PPR100	11.0 ± 1.0	4.0 ± 0.5	28 ± 3.0	0.70 ± 0.03	500 Grams
PPR200	13.5 ± 1.0	5.0 ± 0.5	30 ± 3.0	0.80 ± 0.03	1050 Grams

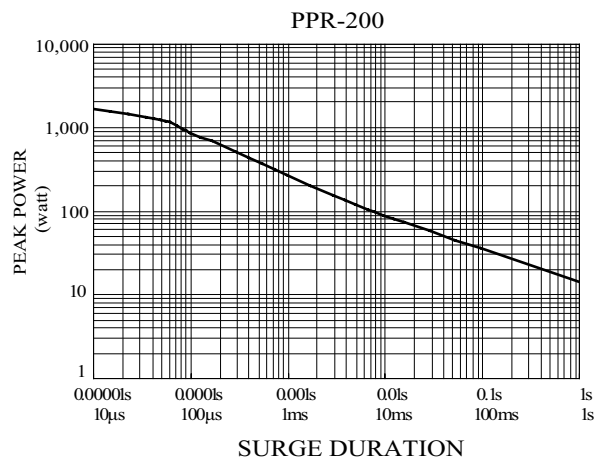
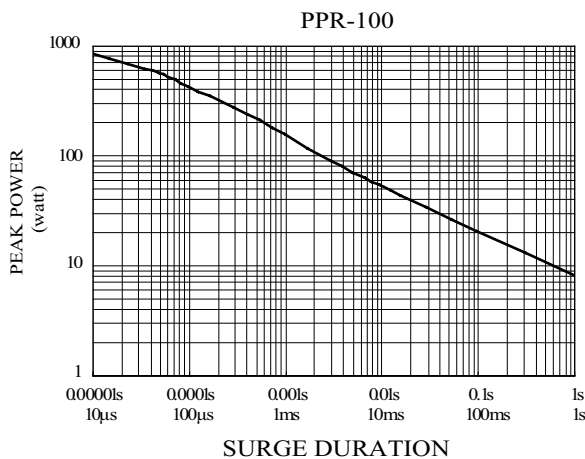
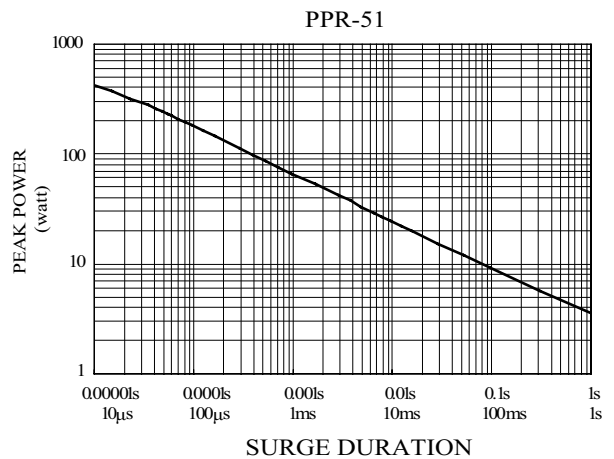
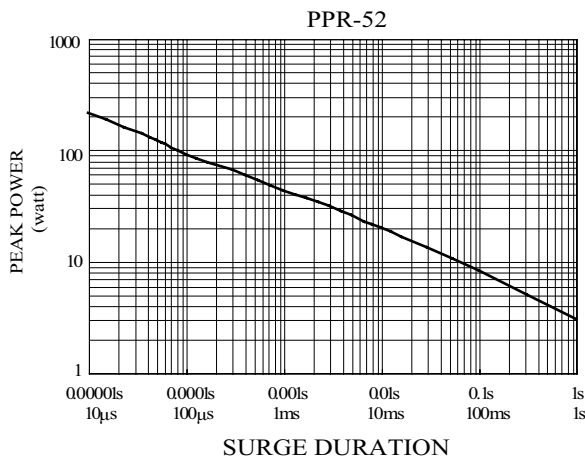
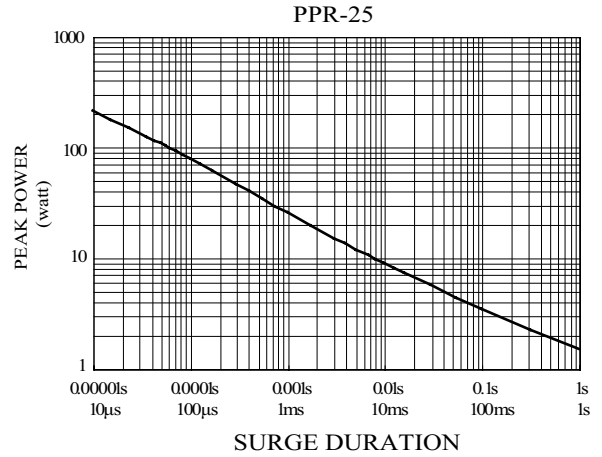
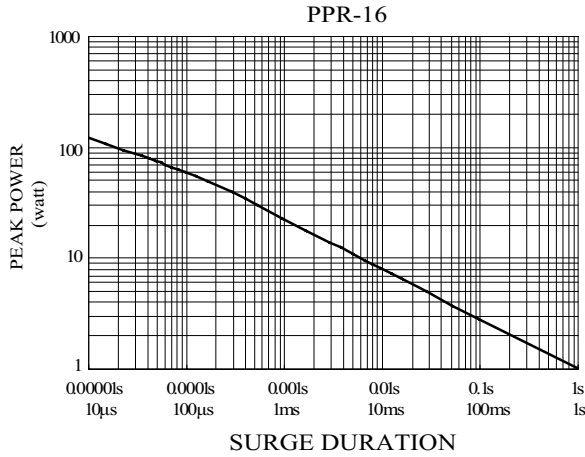
GENERAL SPECIFICATIONS

Type	Power Rating (at 70°C)	Maximum Working Voltage	Maximum Permissible Surge Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
PPR16	1/6W	250V	5KV	10Ω	1MΩ	±5%	E-24
PPR25	1/4W	250V	7KV	10Ω	4.7MΩ	±5%	E-24
PPR52	1/2W	250V	7KV	10Ω	4.7MΩ	±5%	E-24
PPR51	1/2W	350V	10KV	2.2Ω	4.7MΩ	±5%	E-24
PPR100	1W	350V	15KV	10Ω	4.7MΩ	±5%	E-24
PPR200	2W	400V	20KV	10Ω	4.7MΩ	±5%	E-24

Special sizes, values, and specifications not listed available on special order.

Quality • Reliability
Cost-Down via Technology

■ SURGE PERFORMANCE



PPR

■ TECHNICAL SUMMARY

Characteristics	Limits	
Power Derating, Linear	100% at < 70°C, zero at 155°C	
Dielectric Withstanding Voltage, VAC or DC	PPR16:	300
	PPR25/ 52/ 51/ 100 :	600
	PPR200:	700
Temperature Coefficient, PPM / °C*	±750, ±1200	
Operating Temperature Range, °C	-55 ~ +155	
Insulation Resistance, MΩ	>10 ⁴	

* Not applicable to all resistance values. Please check with us regarding the PPM of specific resistance value(s).

■ PART NUMBER

Example: PPR200J10K0TKZTB500

PPR200	J	10K0	TKZ	TB500
Type	Tolerance	Resistance	TCR	Packaging
	J (5%)	10KΩ 4-character code containing - 3 significant digits 1 letter multiplier <u>MULTIPLIER</u> R = 1 K = 10 ³ M = 10 ⁶ G = 10 ⁹	3-character code TKZ = Default Product Temperature Coefficient. Information of typical product temperature coefficient can be found in the Technical Summary section of the datasheet.*	5-character code TB = Tape Box (pieces per box) PPR16 5K0 = 5,000 PPR25/PPR52/ PPR51 2K0 = 2,000 PPR100 1K0 = 1,000 PPR200 500 = 500

* For the availabilities of non-default temperature coefficient, please check with us. Reference for TCR letter codes can be found in section (4) of Part Number Construction in the Appendices.

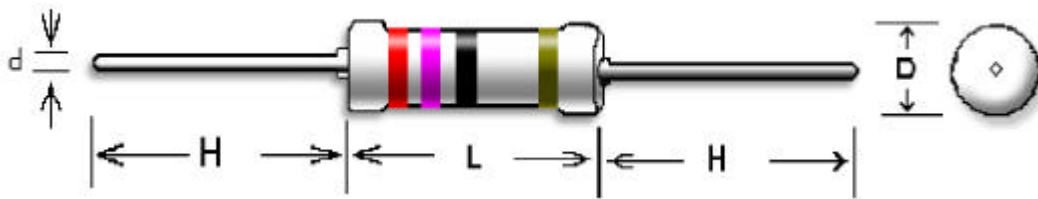
■ PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits		
Short Time Over Load	IEC 60115-1 4.13 5 seconds 2.5x rated voltage (not over 2X max. working voltage)	±1%		
Load Life In Humidity	IEC 60115-1 4.24 56 days rated load at (40±2)°C and (93±3)% relative humidity	±5%		
Load Life 1,000 hours	IEC 60115-1 4.25.1 Rated load with 1.5 hours ON, 0.5 hours OFF, at (70±2)°C	±5%		
Resistance To Soldering Heat	IEC 60115-1 4.18.2 Leads immersed till 3mm from the body in (260±5)°C solder for 10±1 seconds	±1%		
Solderability	IEC 60115-1 4.17.2 Solder area covered after (235±3)°C/(2±0.2) seconds with flux applied	95% Min.		
Vibration	IEC 60115-1 4.22 Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz.	±1%		
Thermal Endurance	IEC 60115-1 4.25.3 1000 hours at 155°C without load	±1%		
Thermal Shock	IEC 60115-1 4.19 -55°C 30minutes, +155°C 30minutes, 5 cycles	±2%		
Surge Test	Surge voltage = $\sqrt{(2400 \times P \times R)}$ DC P is power rating, R is resistance value, surge voltage is not more than listed at right. Surge spec = 1.2/50µs Period = 12 sec Number of surges = 50	PPR16	5KV	5%
		PPR25	7KV	
		PPR52	7KV	
		PPR51	10KV	
		PPR100	15KV	
		PPR200	20KV	

PPR - Pulse Protective Resistor High Power

Features

Applied in high-frequency, sharp-impulse circuits, such as missile detonators, triac switching circuits, etc, to protect active components, this series is capable of completely replacing carbon composition resistor. And comparing to carbon composition resistor, this series offers every better aspect of performance, specially without “sintering effect” caused by high surge impacts on carbon composition resistor showing a greatly decreased resistance value.



Dimensions:

Type	Body Length (L , mm)	Body Diameter (D , mm)	Lead Wire Length (H , mm)	Lead Wire Diameter (d , mm)	Net Weight Per 1000Pcs
PPR300	15.5±1.0	5.5±0.5	30±3.0	0.8±0.03	1200 Grams
PPR400	19.0±1.0	6.0±0.5	30±3.0	0.8±0.03	1600 Grams
PPR500	24.0±1.0	8.0±0.5	30±3.0	0.8±0.03	3700 Grams

General Specifications:

Type	Power Rating At 70	Max. Working Voltage	Max. Overload Voltage	Max. Permissible Surge Voltage at 1.2/10µs	Min. Resistance	Max. Resistance	Resistance Tolerance	Standard Resistance Values
PPR300	3W	350V	700V	20KV	1Ω	4.7MΩ	±5%	E-24
PPR400	4W	450V	800V	25KV	1Ω	4.7MΩ	±5%	E-24
PPR500	5W	550V	1100V	30KV	1Ω	4.7MΩ	±5%	E-24

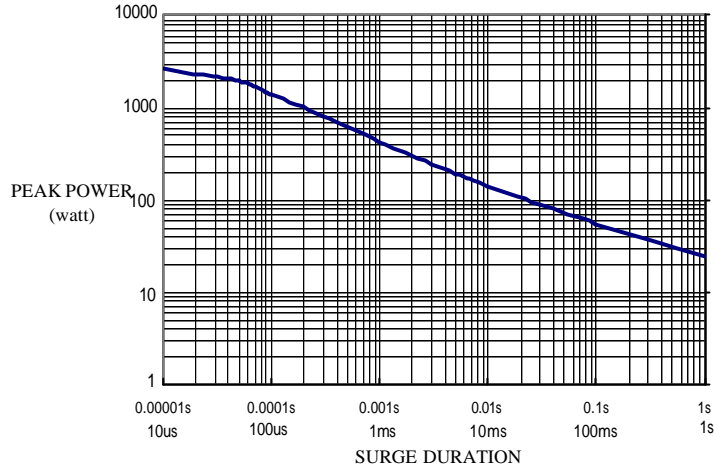
Special sizes, values, and specifications not listed available on special order.

May 8, 2008

PPR - Pulse Protective Resistor High Power

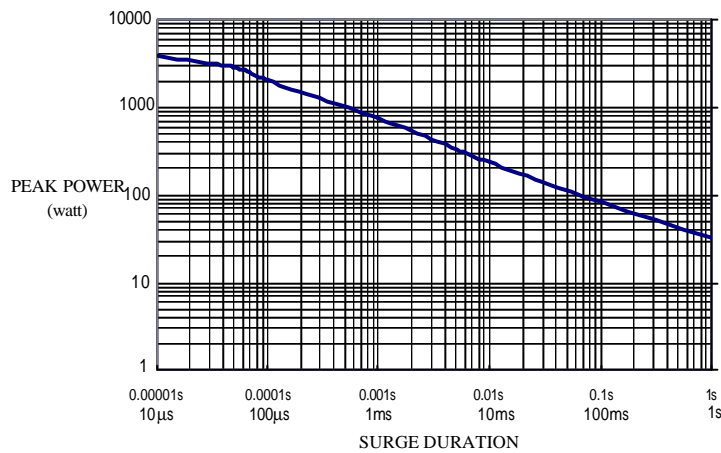
PPR300

SURGE PERFORMANCE



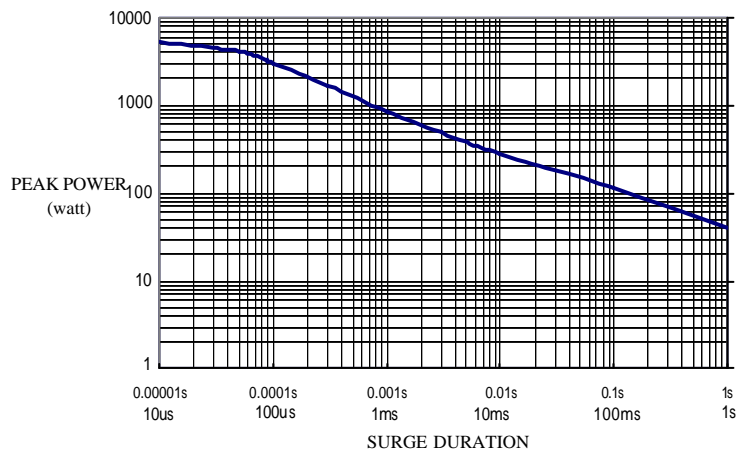
PPR400

SURGE PERFORMANCE



PPR500

SURGE PERFORMANCE



May 8, 2008

PPR - Pulse Protective Resistor High Power

Performance Summary:

Characteristics	Limits
Power Derating, Linear	100% @ <+70°C, 0% @ +155°C
Dielectric Withstanding Voltage, VAC or DC	1000
Temperature Coefficient, PPM /	1Ω ~360KΩ ±750
	390KΩ ~4.7MΩ ±1200
Operating Temperature Range,	-55 ~ +155
Insulation Resistance, MΩ	>10 ⁴

Technical Specifications:

Tests Characteristics	Test Conditions	Limits
Short Time Over Load	IEC 60115-1 4.13 5 seconds 2.5x rated voltage (not over max. overload voltage)	±(1%+0.05R)
Load Life In Humidity	IEC 60115-1 4.24 56 days at 40°C and 93% relative humidity	±(5%+0.05R)
Load Life 1,000 hours	IEC 60115-1 4.25.1 Rated load 1.5 hours ON, 0.5 hours OFF, at 70°C	±(5%+0.05R)
Resistance To Soldering Heat	IEC 60115-1 4.18 10 seconds at 260°C solder bath temperature	±(1%+0.05R)
Solderability	MIL-STD-202 Method 208 Solder area covered after 230±5°C/5±0.5 seconds w/ flux applied	90% Min.
Vibration	IEC 60115-1 4.22 Six hours in each parallel and axial direction w/ a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz.	±(1%+0.05R)
Thermal Endurance	IEC 60115-1 4.25.3 1000 hours at 155°C without load	±(1%+0.05R)
Thermal Shock	IEC 60115-1 4.19 -55°C 30minutes, +155°C 30minutes, 5 cycles	±(2%+0.05R)
Surge Test	Surge voltage = (2400 x P x R) DC <i>P is power rating, R is resistance value, surge voltage is not more than listed at right.</i> Surge spec = 1.2/50µs Period = 1 sec Number of surges = 50	PPR300: 20KV
		PPR400: 25KV
		PPR500: 30KV

Ordering Information

Type	Tolerance	Resistance Value	Packaging	Special Request (Optional)
PPR300 PPR400 PPR500	J (5%)	10K	TB (Tape/Box)	LV (Low value)

May 8, 2008