



# PR9511-SERIES

## PULSE WITHSTANDING CHIP RESISTOR

PRECISION RESISTIVE PRODUCTS, INC.  
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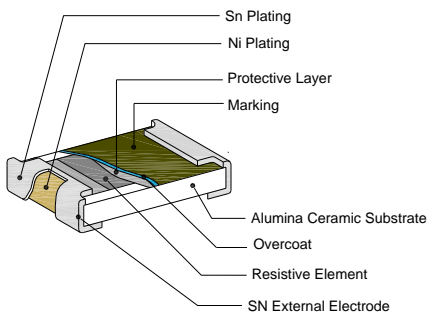
### Features:

- Standard Industry Case Sizes 0603, 0805, 1206, 1210, 2010, 2512
- High Purity Alumina Substrate for High Power Dissipation
- Packaging is Tape & Reel
- Wattage Rating up to 1.5W
- TCR from  $\pm 100$  &  $\pm 200$  PPM/ $^{\circ}\text{C}$
- Values from 1 ohm to 20 Mohms

### Applications:

- Metering (Testing/Measurement)
- Diagnostic Equipment
- Medical Devices
- Industrial Control
- Plasma
- LCD Video Monitors
- Power Management Applications

### Temperature Coefficient / Resistance & Tolerance



Style	Wattage	Resistance Range( $\Omega$ )		T.C.R. PPM/ $^{\circ}\text{C}$	Resistance Tolerance @25 $^{\circ}\text{C}$
PR9511 0603	1/10W / 1/8W	1/10W	10 – 294	$\pm 200$	$\pm 0.5\%$
			1 – 294		$\pm 1\%, \pm 5\%$
		1/8W	300 – 1M	$\pm 100$	$\pm 0.5\%, \pm 1\%, \pm 5\%$
			10 – 294	$\pm 200$	
PR9511 0805	1/8W / 1/4W	1/8W	10 – 294	$\pm 200$	$\pm 0.5\%$
			1 – 294		$\pm 1\%, \pm 5\%$
		1/4W	300 – 20M	$\pm 100$	$\pm 0.5\%, \pm 1\%, \pm 5\%$
			1 – 294	$\pm 200$	
PR9511 1206	1/3W / 1/2W	1/3W	10 – 20	$\pm 200$	$\pm 0.5\%$
			1 – 20		$\pm 1\%, \pm 5\%$
		1/2W	20.5 – 20M	$\pm 100$	$\pm 0.5\%, \pm 1\%, \pm 5\%$
			1 – 20	$\pm 200$	
PR9511 1210	1/2W	1/2W	10 – 20	$\pm 200$	$\pm 0.5\%$
			1 – 20		$\pm 1\%, \pm 5\%$
		1/2W	20.5 – 20M	$\pm 100$	$\pm 0.5\%, \pm 1\%, \pm 5\%$
			10 – 20	$\pm 200$	
PR9511 2010	3/4W / 1W	3/4W	10 – 20	$\pm 200$	$\pm 0.5\%$
			1 – 20		$\pm 1\%, \pm 5\%$
		1W	20.5 – 20M	$\pm 100$	$\pm 0.5\%, \pm 1\%, \pm 5\%$
			1 – 20	$\pm 200$	
PR9511 2512	1.5W	1.5W	10 – 20	$\pm 200$	$\pm 0.5\%$
			1 – 20		$\pm 1\%, \pm 5\%$
		1.5W	20.5 – 20M	$\pm 100$	$\pm 0.5\%, \pm 1\%, \pm 5\%$
			10 – 20	$\pm 200$	

Operating Temperature Range is -55 $^{\circ}\text{C}$  to 155 $^{\circ}\text{C}$

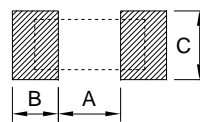
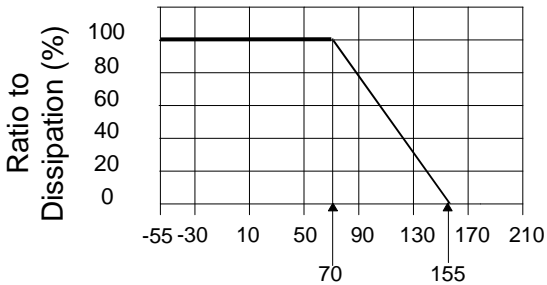


# Performance Data

Requirements	Performance	Test Method
Short Time Overload	$\pm(1.0\% + 0.05\Omega)$	JIS-C-5202-5.5
Resistance to Soldering Heat	$\pm(0.5\% + 0.05\Omega)$	MIL-STD-202F, Method 210E
Thermal Shock	$\pm(0.5\% + 0.05\Omega)$	MIL-STD-202F, Method 107G
Load Life	$\pm(1.0\% + 0.05\Omega)$	MIL-STD-202F, Method 108A
Humidity	$\pm(0.5\% + 0.05\Omega)$	MIL-STD-202F Method 103B
Resistance to Dry Heat	$\pm(0.5\% + 0.05\Omega)$	JIS-C-5202-7.2
Temperature Coefficient	As Specifications	MIL-STD-202F, Method 304
Solderability	95% Min. Coverage	MIL-STD-202F, Method 208H

## Derating Curve

For resistors operated in ambient above 70°C, power dissipation must be derated in accordance with curve in the below chart..

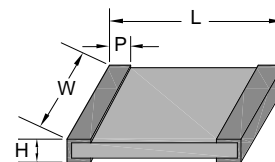


## Pad Dimensions Inches (mm)

Style	A	B	C
PR9511 0603	0.035 (0.90)	0.024 (0.60)	0.035 (0.90)
PR9511 0805	0.047 (1.20)	0.028 (0.70)	0.051 (1.30)
PR9511 1206	0.079 (2.00)	0.035 (0.90)	0.063 (1.60)
PR9511 1210	0.079 (2.00)	0.035 (0.90)	0.110 (2.80)
PR9511 2010	0.150 (3.80)	0.035 (0.90)	0.110 (2.80)
PR9511 2512	0.150 (3.80)	0.063 (1.60)	0.138 (3.50)

## Dimensions Inches (mm)

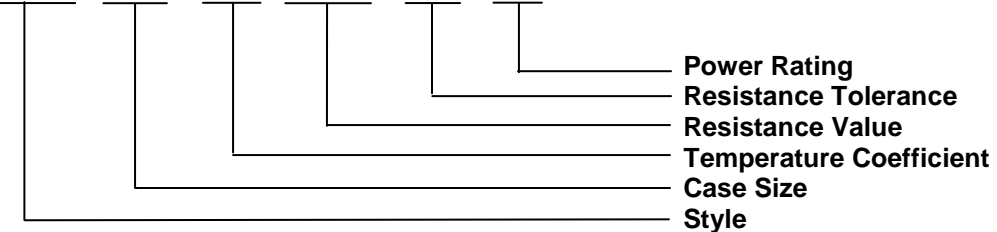
Style	L	W	H	P
PR9511 0603	0.063 ±0.004 (1.60 ±0.10)	0.031 ±0.004 (0.80 ±0.10)	0.018 ±0.004 (0.45 ±0.10)	0.012 ±0.008 (0.30 ±0.20)
PR9511 0805	0.079 ±0.004 (2.00 ±0.10)	0.049 ±0.004 (1.25 ±0.10)	0.020 ±0.004 (0.50 ±0.10)	0.016 ±0.008 (0.40 ±0.20)
PR9511 1206	0.122 ±0.004 (3.10 ±0.10)	0.061 ±0.004 (1.55 ±0.10)	0.022 ±0.004 (0.55 ±0.10)	0.020 ±0.008 (0.50 ±0.20)
PR9511 1210	0.122 ±0.004 (3.10 ±0.10)	0.102 ±0.006 (2.60 ±0.15)	0.022 ±0.004 (0.55 ±0.10)	0.020 ±0.008 (0.50 ±0.20)
PR9511 2010	0.197 ±0.004 (5.00 ±0.10)	0.098 ±0.006 (2.50 ±0.15)	0.022 ±0.004 (0.55 ±0.10)	0.020 ±0.008 (0.50 ±0.20)
PR9511 2512	0.250 ±0.004 (6.35 ±0.10)	0.122 ±0.006 (3.10 ±0.15)	0.022 ±0.004 (0.55 ±0.10)	0.020 ±0.008 (0.50 ±0.20)



## How to Order

Sample Part Number

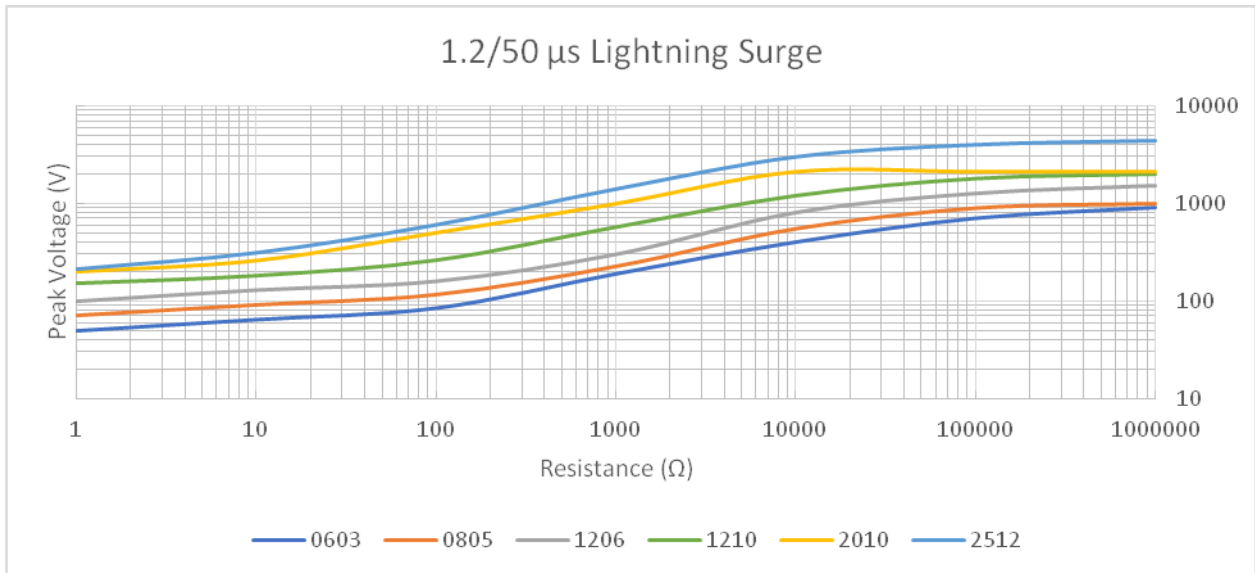
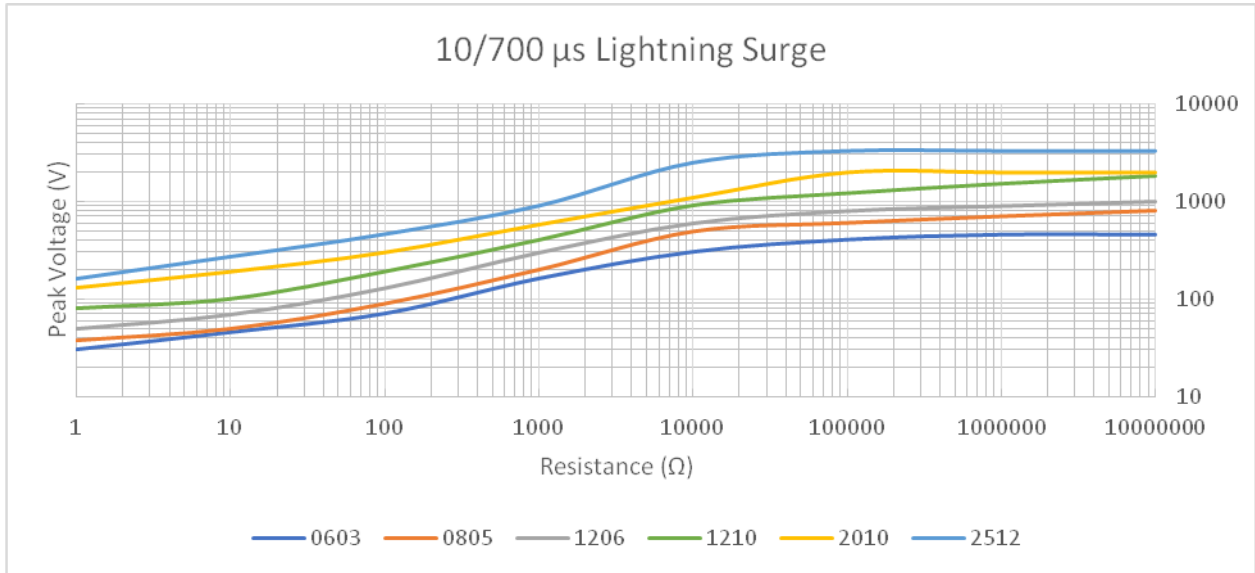
PR9511 1210 T100 400R ±1% 0.5W



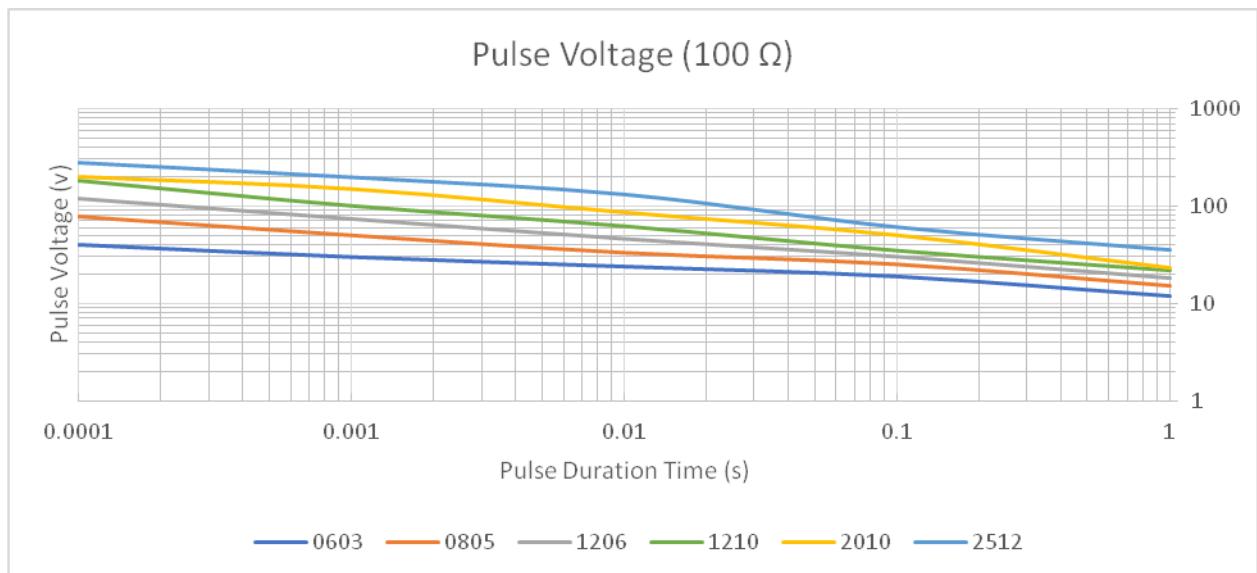
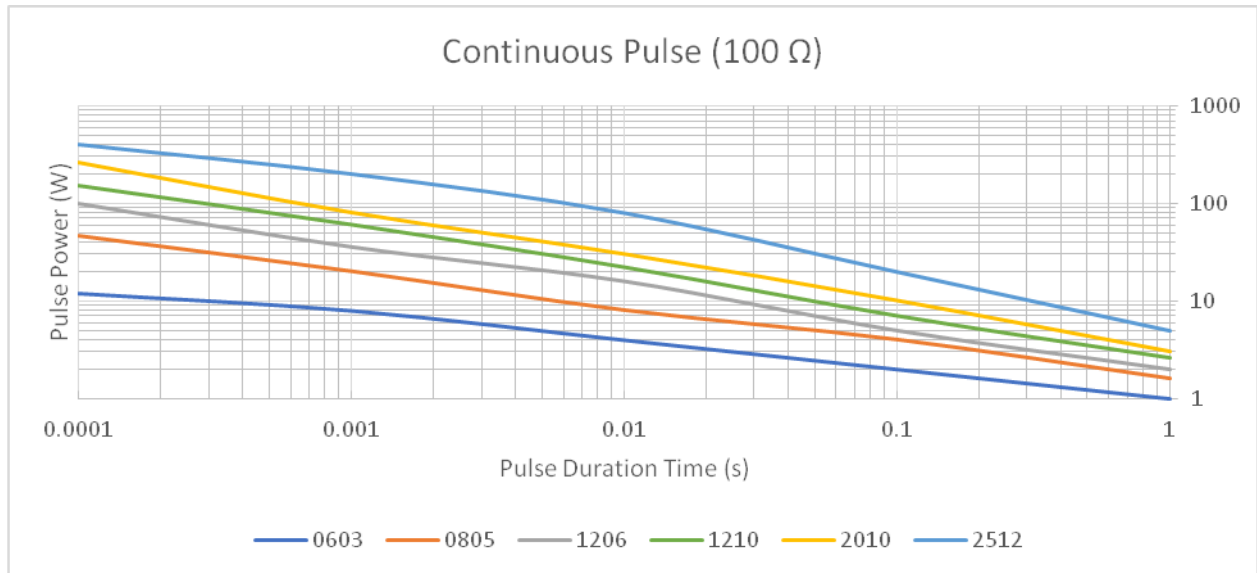
[Packaging](#)

Add "T" at the end of the Case Size portion of the part number for lead free termination.

**Lightning Surge** – Tested in accordance with IEC 60 115-1 using both 1.2/50  $\mu$ s and 10/700  $\mu$ s pulse profiles. Acceptance limits of  $\Delta R < 1\%$  of  $R_1$ .



**Continuous Pulse** – The continuous pulse loading was obtained by applying repetitive square wave pulses where the pulse period was adjusted so the average power dissipated was equal to rated power at 70°C. Acceptance limits of  $\Delta R < 1\%$  of  $R_1$ .



**Pulse Withstanding Capacity** – The single pulse results were obtained by applying 50 repetitive square wave pulses at 60 second intervals. Acceptance limits of  $\Delta R < 1\%$  of  $R_1$ .

