

- Features:
- Excellent pulse withstanding performance
 - Broad resistance range
 - Higher anti-surge performance compared with RMCF Series
 - Stability class: 5%
 - Lower values may be available – contact factory
 - RoHS compliant / lead-free



Electrical Specifications							
Type / Code	Power Rating (Watts) @ 70°C	Maximum Working Voltage	Maximum Overload Voltage	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance		
					0.5%	1%	5%, 10%, 20%
RPC0603	0.1W	50V	100V	±200 ppm/°C ±100 ppm/°C	10 - 294 300 - 1M	1 - 294 300 - 1M	10 - 270 300 - 1M
RPC0805	0.25W	150V	300V	±200 ppm/°C ±100 ppm/°C	10 - 294 300 - 20M	1 - 294 300 - 20M	1 - 270 300 - 20M
RPC1206	0.33W	200V	400V	±200 ppm/°C ±100 ppm/°C	10 - 20 20.5 - 20M	1 - 20 20.5 - 20M	1 - 20 22 - 20M
RPC1210	0.5W	200V	400V	±200 ppm/°C ±100 ppm/°C	10 - 20 20.5 - 20M	1 - 20 20.5 - 20M	1 - 20 22 - 20M
RPC2010	0.75W	400V	800V	±200 ppm/°C ±100 ppm/°C	10 - 20 20.5 - 20M	1 - 20 20.5 - 20M	1 - 20 22 - 20M
RPC2512	1.5W	500V	1000V	±200 ppm/°C ±100 ppm/°C	10 - 20 20.5 - 20M	1 - 20 20.5 - 20M	1 - 20 22 - 20M

Working Voltage = $\sqrt{P \cdot R}$ or Max. Working Voltage listed above, whichever is lower.

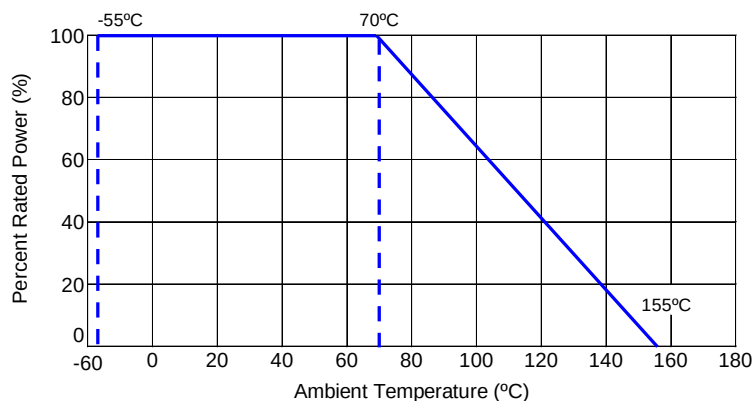
Overload Voltage = $2.5 \cdot \sqrt{P \cdot R}$ or Max. Overload Voltage listed above, whichever is lower.

Electrical Specifications – High Power							
Type / Code	Power Rating (Watts) @ 70°C	Maximum Working Voltage	Maximum Overload Voltage	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance		
					0.5%	1%	5%
RPC0603...-HP	0.125W	50V	100V	±200 ppm/°C	10 - 294	1 - 294	1 - 270
	0.2W	50V	100V	±100 ppm/°C	300 - 1M	300 - 1M	300 - 1M
RPC1206...-HP	0.5W	200V	400V	±200 ppm/°C	10 - 20	1 - 20	1 - 20
				±100 ppm/°C	20.5 - 20M	20.5 - 20M	22 - 20M
RPC2010...-HP	1W	400V	800V	±200 ppm/°C	10 - 20	1 - 20	1 - 20
				±100 ppm/°C	20.5 - 20M	20.5 - 20M	22 - 20M

Working Voltage = $\sqrt{P \cdot R}$ or Max. Working Voltage listed above, whichever is lower.

Overload Voltage = $2.5 \cdot \sqrt{P \cdot R}$ or Max. Overload Voltage listed above, whichever is lower.

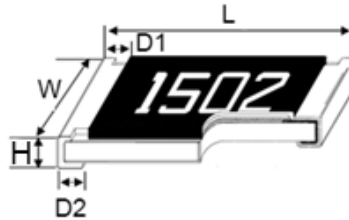
Power Derating Curve:



Performance Characteristics		
Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As specified	JIS-C-5201-1 4.8 IEC-60115-1 4.8 -55°C ~+ 125°C, 25°C is the reference temperature
Short Time Overload	$\pm(1\%+0.05\Omega)$	JIS-C-5201-1 4.13 IEC-60115-1 4.13 RCWV*2.5 or max. overload voltage whichever is lower for 5 seconds
Insulation Resistance	$\geq 10G$	JIS-C-5201-1 4.6 IEC-60115-1 4.6 Max. overload voltage for 1 minute
Endurance Tolerances of 0.5%, 1%	$\pm(1\%+0.05\Omega)$	JIS-C-5201-1 4.25 IEC-60115-1 4.25.1 70 $\pm$ 2°C, RCWV for 1000 h. with 1.5 h. "ON" and 0.5 h. "OFF"
Endurance Tolerances of 5%, 10%, 20%	$\pm(3\%+0.05\Omega)$	JIS-C-5201-1 4.25 IEC-60115-1 4.25.1 70 $\pm$ 2°C, RCWV for 1000 h. with 1.5 h. "ON" and 0.5 h. "OFF"
Damp Heat with Load Tolerances of 0.5%, 1%	$\pm(0.5\%+0.05\Omega)$	JIS-C-5201-1 4.24 40 $\pm$ 2°C, 90~95% R.H., RCWV for 1000 h. with 1.5 h. "ON" and 0.5 h. "OFF"
Damp Heat with Load Tolerances of 5%, 10%, 20%	$\pm(3\%+0.05\Omega)$	JIS-C-5201-1 4.24 40 $\pm$ 2°C, 90~95% R.H., RCWV for 1000 h. with 1.5 h. "ON" and 0.5 h. "OFF"
Dry Heat Tolerances of 0.5%, 1%	$\pm(0.5\%+0.05\Omega)$	JIS-C-5201-1 4.23 IEC-60115-1 2.23.2 at +155°C for 1000 h.
Dry Heat Tolerances of 5%, 10%, 20%	$\pm(3\%+0.05\Omega)$	JIS-C-5201-1 4.23 IEC-60115-1 2.23.2 at +155°C for 1000 h.
Bending Strength	$\pm(1\%+0.05\Omega)$	JIS-C-5201-1 4.33 IEC-60115-1 4.33 Bending once for 5 seconds 2010, 2512 sizes: 2mm, other sizes: 3mm
Solderability	95% min. coverage	JIS-C-5201-1 4.17 IEC-60115-1 4.17 245 $\pm$ 5°C for 3 s.
Resistance to Soldering Heat tolerances of 0.5%, 1%	$\pm(0.5\%+0.05\Omega)$	JIS-C-5201-1 4.18 IEC-60115-1 4.18 260 $\pm$ 5°C for 10 s.
Resistance to Soldering Heat tolerances of 5%, 10%, 20%	$\pm(1\%+0.05\Omega)$	JIS-C-5201-1 4.18 IEC-60115-1 4.18 260 $\pm$ 5°C for 10 s.
Voltage Proof	No breakdown or flashover	JIS-C-5201-1 4.7 IEC-60115-1 4.7 1.42 times max. operating voltage for 1 m.
Leaching	Individual leaching area $\leq 5\%$ Total leaching area $\leq 10\%$	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1 260 $\pm$ 5°C for 30 s.
Rapid Change of Temperature tolerances of 0.5%, 1%	$\pm(0.5\%+0.05\Omega)$	JIS-C-5201-1 4.18 IEC-60115-1 4.18 -55°C to + 155°C , 5 cycles
Rapid Change of Temperature tolerances of 5%, 10%, 20%	$\pm(1\%+0.05\Omega)$	JIS-C-5201-1 4.18 IEC-60115-1 4.18 -55°C to + 155°C , 5 cycles

RCWV (Rated Continuous Working Voltage)= $\sqrt{P \cdot R}$ or Max. Working Voltage whichever is lower.

Storage Temperature: 25 $\pm$ 3°C; humidity < 80% R.H.



Mechanical Specifications

Type / Code	L Body Length	W Body Width	H Body Height	D1 Top Termination	D2 Bottom Termination	Unit
RPC0603	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	0.012 ± 0.008 0.30 ± 0.20	inches mm
RPC0805	0.079 ± 0.004 2.00 ± 0.10	0.049 ± 0.004 1.25 ± 0.10	0.020 ± 0.004 0.50 ± 0.10	0.014 ± 0.008 0.35 ± 0.20	0.016 ± 0.008 0.40 ± 0.20	inches mm
RPC1206	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 ± 0.010 0.50 ± 0.25	0.020 ± 0.008 0.50 ± 0.20	inches mm
RPC1210	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 ± 0.010 0.50 ± 0.25	0.020 ± 0.008 0.50 ± 0.20	inches mm
RPC2010	0.197 ± 0.004 5.00 ± 0.10	0.098 ± 0.006 2.50 ± 0.15	0.022 ± 0.004 0.55 ± 0.10	0.024 ± 0.010 0.60 ± 0.25	0.020 ± 0.008 0.50 ± 0.20	inches mm
RPC2512	0.250 ± 0.004 6.35 ± 0.10	0.122 ± 0.006 3.10 ± 0.15	0.022 ± 0.004 0.55 ± 0.10	0.024 ± 0.010 0.60 ± 0.25	0.020 ± 0.008 0.50 ± 0.20	inches mm

How to Order

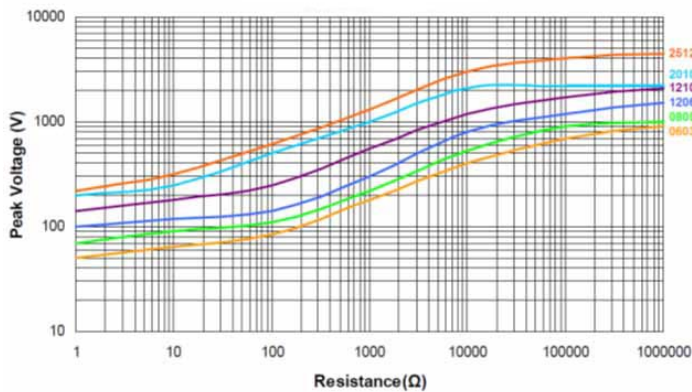
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
R	P	C	1	2	0	6	F	T	1	R	2	0	-	H	P
Product Series		Size	Power	Tolerance			Packaging				Resistance Value			Special	
RPC	Pulse Withstanding	0603	0.1W	Code	Tol	Value	Code	Description	Size	Quantity	Four characters with the multiplier used as the decimal holder. 300 ohm = 300R 10.2 Kohm = 10K2 1 Mohm = 1M00			Code	Description
		0603(HP)	0.125W	D	0.5%	E96	T	7" Reel Paper Tape	0603	5,000				HP	High Power
		0603(HP)	0.2W	F	1%	E24									
		0805	0.25W	J	5%										
		1206	0.33W	K	10%	E24									
		1206(HP)	0.5W	M	20%										
		1210	0.5W				G	7" Reel Plastic Tape	2010	4,000					
		2010	0.75W						2512						
		2010(HP)	1W						0805					10,000	
		2512	1.5W				1206								

Lightning Surge

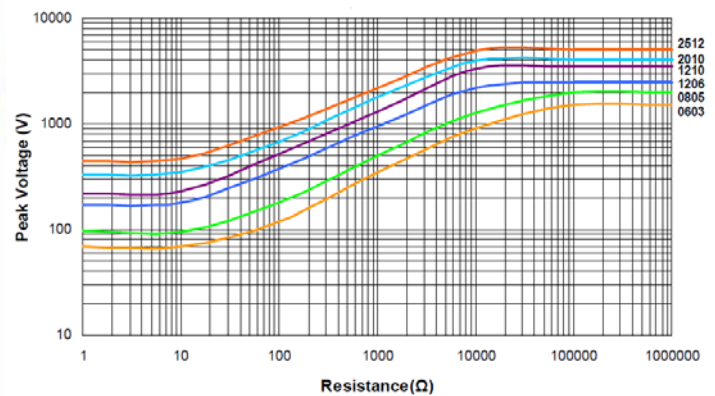
Resistors are tested in accordance with IEC 60115-1 using both 1.2/50us and 10/700 pulse shapes. The limit of acceptance is a shift in resistance of less than 1% from the initial value.

1. 1.2/50us Lightning Surge

Tolerances of 0.5% and 1%

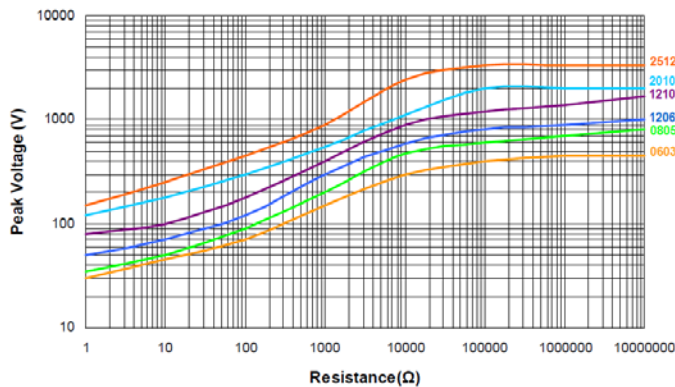


Tolerances of 5%, 10% and 20%

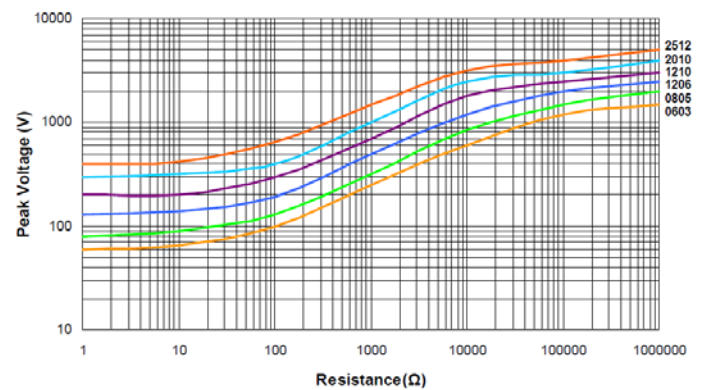


2. 10/700us Lightning Surge

Tolerances of 0.5% and 1%



Tolerances of 5%, 10% and 20%

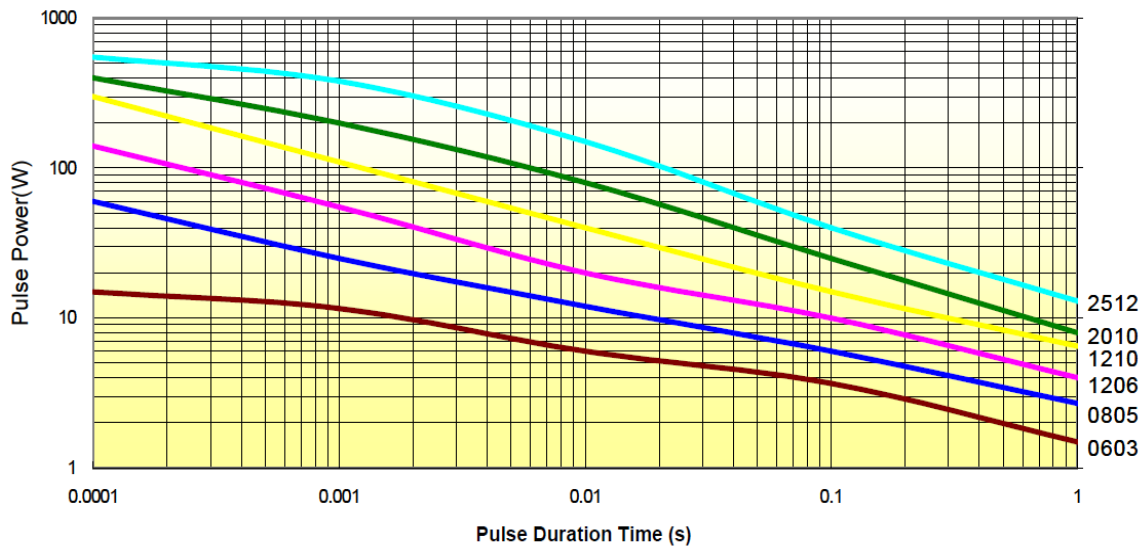


Pulse Withstand Capacity

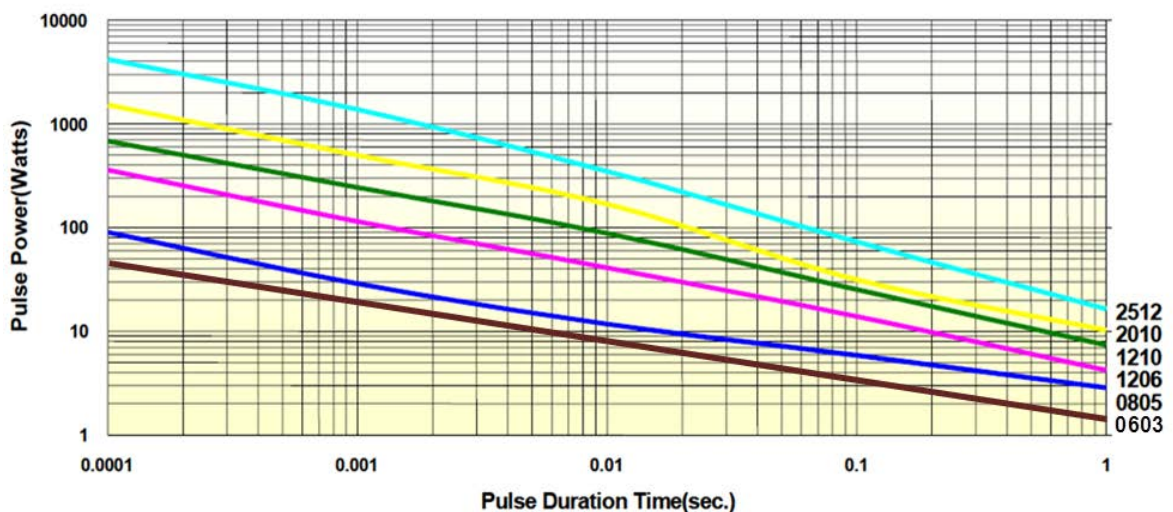
The single impulse graph is the result of 50 impulses of rectangular shape applied at one minute intervals. The limit of acceptance was a shift in resistance of less than 1% from the initial value. The power applied was subject to the restrictions of the maximum permissible impulse voltage graph shown.

Single Pulse Power (100 Ohm)

Tolerances of 0.5% and 1%



Tolerances of 5%, 10% and 20%

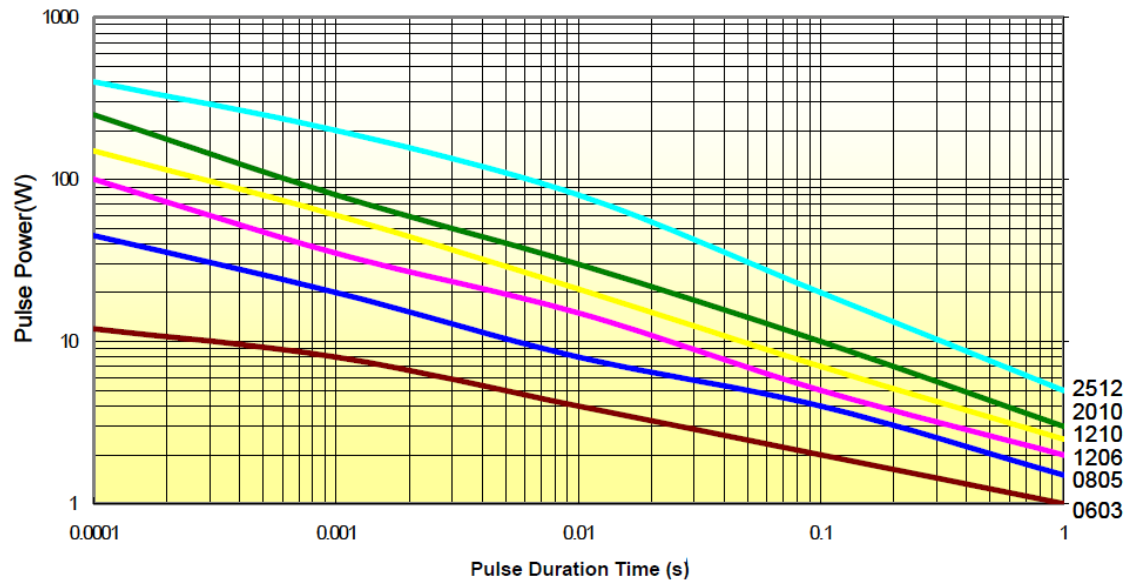


Continuous Pulse

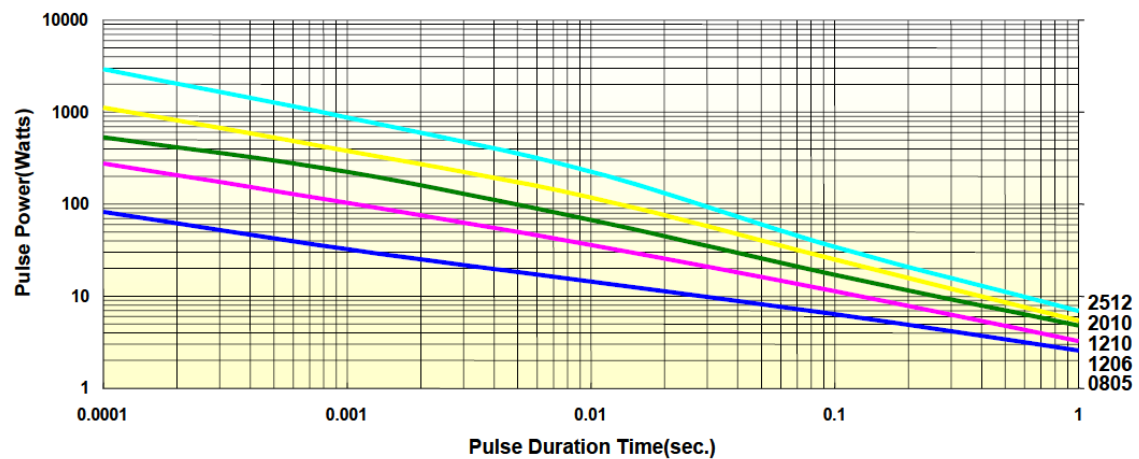
The continuous load graph was obtained by applying repetitive rectangular pulses where the pulse period was adjusted so that the average power dissipated in the resistor was equal to its rated power at 70°C. Again the limit of acceptance was a shift in resistance of less than 1% from the initial value.

Continuous Pulse Power (100 Ohm)

Tolerances of 0.5% and 1%



Tolerances 5%, 10% and 20%



RPC Series

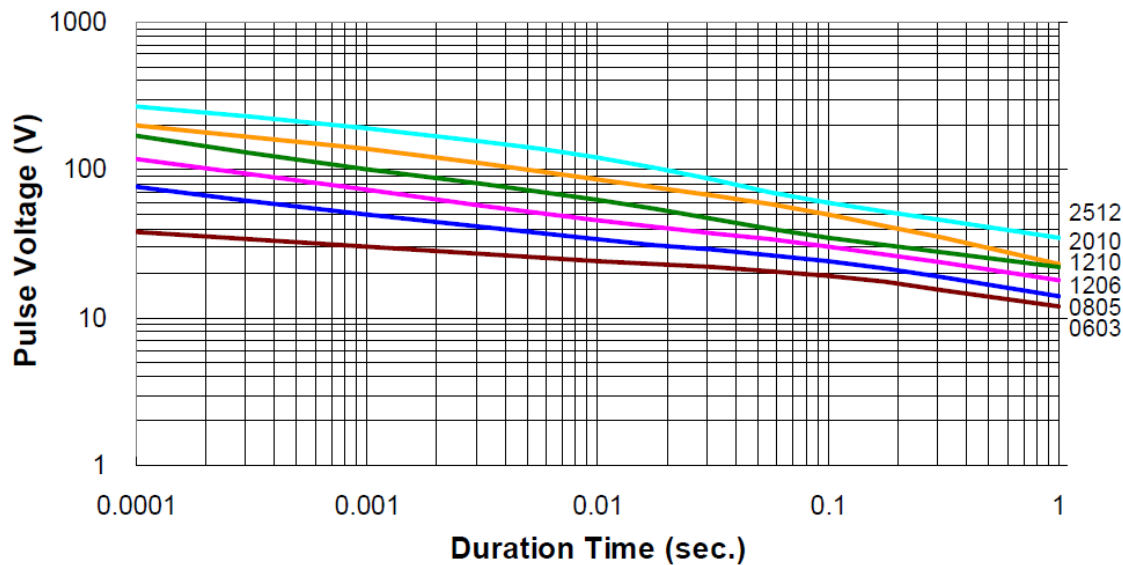
Pulse Withstanding Thick Film Chip Resistor

Stackpole Electronics, Inc.

Resistive Product Solutions

Pulse Voltage (100 Ohm)

Tolerances of 0.5% and 1%



Tolerances of 5%, 10% and 20%

