

Features:

- Anti-sulfur
- Excellent pulse withstanding performance
- Broad resistance range
- Higher anti-surge performance compared with RMCF Series
- Standard power RPCA, 5% and wider tolerances, are untrimmed
- RoHS compliant, REACH compliant, and halogen free
- AEC-Q200 qualified
- Lower values may be available – contact Stackpole



Electrical Specifications							
Type/Code	Power Rating (W) @ 70°C	Maximum Working Voltage (V)	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance		
					0.5%	1%	5%, 10%, 20%
RPCA0402	0.2	50	100	±300	-	1 - 9.76	1 - 20
				±100	100 - 1M	10 - 1M	22 - 1M
RPCA0603	0.1	50	100	±200	-	1 - 6.98	-
				±100	7.15 - 1M		-
	0.125			±200	-	-	1 - 270
RPCA0805	0.125	150	300	±100	-	1 - 2.94	-
				±200	3 - 20M		-
	0.25			±200	-	-	1 - 270
				±100	-	-	300 - 20M
RPCA1206	0.33	200	400	±200	-	1 - 4.99	1 - 20
				±100	5.1 - 20M		22 - 20M
RPCA1210	0.5	200	400	±200	-	1 - 9.76	1 - 20
				±100	10 - 20M		22 - 20M
RPCA2010	0.75	400	800	±200	-	1 - 9.76	1 - 20
				±100	10 - 20M		22 - 20M
RPCA2512	1.5	500	1000	±200	-	1 - 9.76	1 - 20
				±100	10 - 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.

Electrical Specifications – High Power (HP)							
Type/Code	Power Rating (W) @ 70°C	Maximum Working Voltage (V)	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance		
					0.5%	1%	5%
RPCA0603-HP	0.25	75	150	±200	-	1 - 6.98	1 - 270
				±100	7.15 - 1M		300 - 1M
RPCA0805-HP	0.4	150	300	±200	-	1 - 2.94	1 - 270
				±100	3 - 1M		300 - 1M
RPCA1206-HP	0.5	200	400	±200	-	1 - 4.99	1 - 20
				±100	5.1 - 1M		22 - 1M
RPCA1210-HP	0.75	200	400	±200	-	1 - 9.76	1 - 20
				±100	10 - 1M		22 - 1M
RPCA2010-HP	1	400	800	±200	-	1 - 9.76	1 - 20
				±100	10 - 1M		22 - 1M
RPCA2512-HP(*)	2	500	1000	±350	10	1 - 10	
				±100	10.2 - 200K		11 - 200K

(*) Double-sided printed resistor element.
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 – Ultra High Power (UP)

Type/Code	Power Rating (W) @ 70°C	Maximum Working Voltage (V)	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance		
					0.5%	1%	5%
RPCA0603-UP	0.33	75	150	±200	-	1 - 6.98	1 - 270
				±100	7.15 - 1M		300 - 1M
RPCA0805-UP	0.5	400	600	±200	-	1 - 9.76	1 - 270
				±100	10 - 1M		300 - 1M
RPCA1206-UP	0.75	500	1000	±200	-	1 - 9.76	1 - 20
				±100	10 - 1M		22 - 1M

Ultra High Power: double side printed resistor element.

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

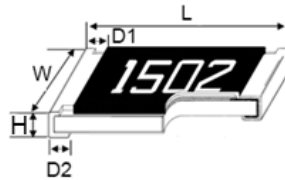
Overload Voltage = $2.5 \cdot \sqrt{P \cdot R}$ or Max. Overload Voltage listed above, whichever is lower.

Electrical Specifications – Ultra High Power Jumper

Type/Code	Jumper Rated Current (A)	Max. Resistance
RPCA0603-UP	5	0.008 max.
RPCA0805-UP	6	0.005 max.
RPCA1206-UP	10	

Ultra High Power: double side printed resistor element.

Mechanical Specifications



Type/Code	Weight (mg)	L		W	H	D1		D2		Unit
		Body Length	Body Width			Top Termination	Bottom Termination			
RPCA0402	0.64	0.039 ± 0.002 1.00 ± 0.05	0.020 ± 0.002 0.50 ± 0.05	0.014 ± 0.002 0.35 ± 0.05	0.008 ± 0.004 0.20 ± 0.10	0.008 ± 0.004 0.20 ± 0.10	inches mm			
RPCA0603, -HP and -UP	2.0	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			
RPCA0805 and -HP	4.4	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			
RPCA0805-UP	5.0	0.079 ± 0.004 2.00 ± 0.10	0.049 ± 0.004 1.25 ± 0.10	0.022 ± 0.004 0.55 ± 0.10	0.014 ± 0.008 0.35 ± 0.20	0.016 ± 0.008 0.40 ± 0.20	inches mm			
RPCA1206 and -HP	8.9	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			
RPCA1206-UP	9.2	0.122 ± 0.004 3.10 ± 0.10	0.061 ± 0.004 1.55 ± 0.10	0.022 ± 0.004 0.55 ± 0.10	0.024 ± 0.010 0.60 ± 0.25	0.022 ± 0.010 0.55 ± 0.25	inches mm			
RPCA1210 and -HP	16.0	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			
RPCA2010 and -HP	24.2	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			
RPCA2512	39.4	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			
RPCA2512 and -HP	42.0	0.250 ± 0.008 6.35 ± 0.20	0.124 ± 0.006 3.15 ± 0.15	0.024 ± 0.004 0.60 ± 0.10	0.031 ± 0.010 0.80 ± 0.25	0.024 ± 0.012 0.60 ± 0.30	inches mm			

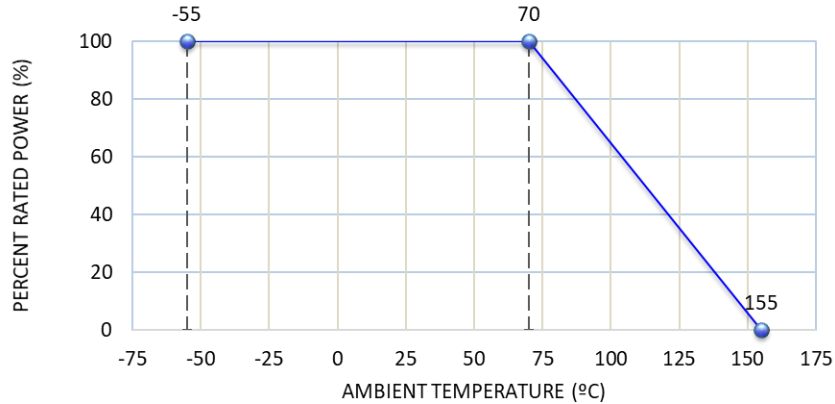
Performance Characteristics					
Item	Test Method	Test Specification			Test Condition
		Tolerances of 0.5% and 1%	Tolerance of 5%, 10%, 20%	Jumper	
Temperature Coefficient of Resistance (T.C.R.)	JIS-C-5201-1 4.8 IEC-60115-1 4.8	Within the specified tolerance			At 25°C/-55°C and 25°C/+125°C, 25°C is the reference temperature
Short Time Overload	JIS-C-5201-1 4.13 IEC-60115-1 4.13	$\pm (1\% + 0.05\Omega)$		0603: $\leq 8m\Omega$ 0805: $\leq 5m\Omega$ 1206: $\leq 5m\Omega$	RCWV * 2.5 or max. overload voltage whichever is lower for 5 seconds Jumper: 2*I _{max} for 5 seconds
Insulation Resistance	JIS-C-5201-1 4.6 IEC-60115-1 4.6	$\geq 10G$			Max. overload voltage for 1 minute
Operational Life	MIL-STD-202 Method 108	$\pm (1\% + 0.05\Omega)$	$\pm (3\% + 0.05\Omega)$	0603: $\leq 8m\Omega$ 0805: $\leq 5m\Omega$ 1206: $\leq 5m\Omega$	Condition D Stead State TA=125°C at derated power. Measurement at 24 \pm 4 hours after test conclusion
Biased Humidity	MIL-STD-202 Method 103	$\pm (1\% + 0.05\Omega)$	$\pm (3\% + 0.05\Omega)$	0603: $\leq 8m\Omega$ 0805: $\leq 5m\Omega$ 1206: $\leq 5m\Omega$	1000 hours 85°C/85% R.H. 10% of operating power
High Temperature Exposure	MIL-STD-202 Method 108	$\pm (1\% + 0.05\Omega)$		0603: $\leq 8m\Omega$ 0805: $\leq 5m\Omega$ 1206: $\leq 5m\Omega$	At 155°C for 1000 hours
Board Flex	AEC-Q200-005	$\pm (1\% + 0.05\Omega)$		0603: $\leq 8m\Omega$ 0805: $\leq 5m\Omega$ 1206: $\leq 5m\Omega$	Bending once for 60 seconds. 2010, 2512 sizes: 2mm; other sizes: 3mm
Solderability	JIS-C-5201-1 4.17 IEC-60115-1 4.17	95% min. coverage			245 \pm 5°C for 3 seconds
Resistance to Soldering Heat	JIS-C-5201-1 4.18 IEC-60115-1 4.18	$\pm (0.5\% + 0.05\Omega)$	$\pm (1\% + 0.05\Omega)$	0603: $\leq 8m\Omega$ 0805: $\leq 5m\Omega$ 1206: $\leq 5m\Omega$	260 \pm 5°C for 10 seconds
Voltage Proof	JIS-C-5201-1 4.7 IEC-60115-1 4.7	No breakdown or flashover			1.42 times max. operating voltage for 1 minute
Leaching	JIS-C-5201-1 4.18 IEC-60068-2-58-8.2.1	Individual leaching area $\leq 5\%$ Total leaching area $\leq 10\%$			260°C \pm 5°C for 30 seconds
Temperature Cycling	JESD22 Method JA-104	$\pm (0.5\% + 0.05\Omega)$	$\pm (1\% + 0.05\Omega)$	0603: $\leq 8m\Omega$ 0805: $\leq 5m\Omega$ 1206: $\leq 5m\Omega$	-55°C to + 125°C, 1000 cycles
Mechanical Shock	MIL-STD-202 Method 213	$\pm (0.25\% + 0.05\Omega)$	$\pm (1\% + 0.05\Omega)$	0603: $\leq 8m\Omega$ 0805: $\leq 5m\Omega$ 1206: $\leq 5m\Omega$	Wave form: Tolerance for half sine shock pulse. Peak value is 100g's. Normal duration (D) is 6.
Vibration	MIL-STD-202 Method 204	$\pm (0.5\% + 0.05\Omega)$	$\pm (1\% + 0.05\Omega)$	0603: $\leq 8m\Omega$ 0805: $\leq 5m\Omega$ 1206: $\leq 5m\Omega$	5 g's for 20 minutes, 12 cycles each of 3 orientations, 10-2000Hz
ESD	AEC-Q200-002	$\pm (3\% + 0.05\Omega)$			Human body model 0402/0603: 1KV; 0805 and above: 2KV
Resistance to Solvents	MIL-STD-202 Method 215	No visible damage on appearance and marking.			Add aqueous wash chemical - OKEM clean or equivalent. Do not use banned solvents.
Terminal Strength	AEC-Q200-006	No breakage.			Force of 1.8Kg for 60 seconds
Flammability	UL-94	No ignition of the tissue paper or scorching on the pinewood board			V-0 or V-1 are acceptable. Electrical test not required.
Sulfur Test	EIA-977 (Condition A)	$\Delta R \pm 1\%$	$\Delta R \pm 5\%$	0603: $\leq 8m\Omega$ 0805: $\leq 5m\Omega$ 1206: $\leq 5m\Omega$	60 \pm 2°C, no power rating for 500 hours

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

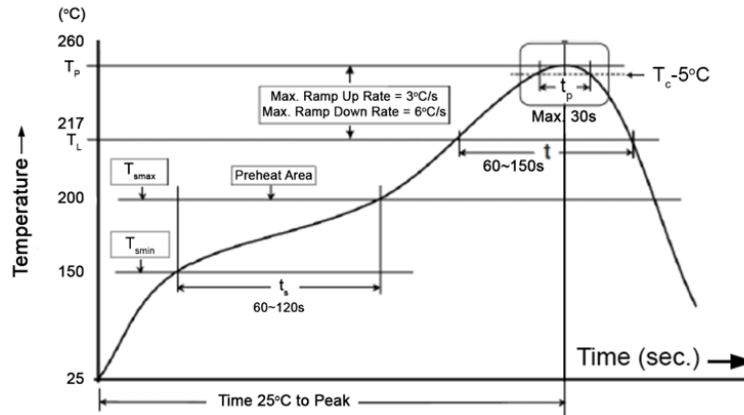
Recommended storage temperature: 15 ~ 28°C; humidity < 80% R.H.

Operating temperature range is -55°C +155°C

Power Derating Curve:

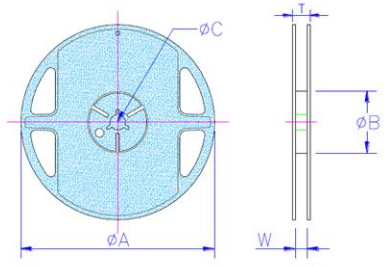


Soldering Condition:



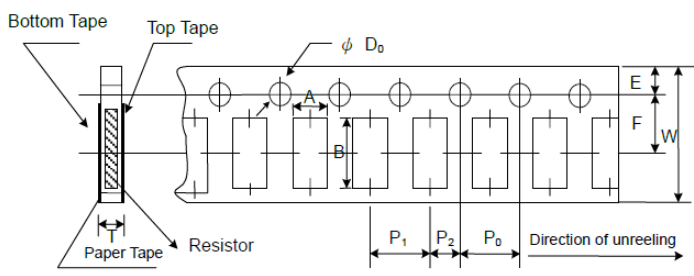
Reflow Profiles	
Profile Feature	Pb-Free Assembly
Preheat:	
Min. temperature (T_{smin})	150°C
Max. temperature (T_{smax})	200°C
Preheating time (t_s) from T_{smin} to T_{smax}	60-120 seconds
Ramp-up rate (T_L to T_p)	3°C/second max
Liquidous temperature (T_L)	217°C
Time (t_L) maintained above T_L	60-150 seconds
Min. peak temperature (T_p min)	235°C
Max. peak temperature (T_p max)	260°C
Time (t_p) within 5°C of the specified classification temperature (T_c)	30 seconds max.
Ramp-down rate (T_L to T_p)	6°C/second max.
Time 25°C to peak temperature	8 minutes max.

Reel Specifications



Type/Code	Packaging	Tape Width	Reel Diameter	A	B	C	W	T	Unit
RPCA0402	Paper Tape	8 mm	7 inches	7.028 ± 0.059	2.362 +0.039/-0	0.512 ± 0.008	0.354 ± 0.020	0.492 ± 0.020	inches
RPCA0603				178.50 ± 1.50	60 +1/-0	13.00 ± 0.20	9.00 ± 0.50	12.50 ± 0.50	mm
RPCA0805				7.028 ± 0.059	2.362 +0.039/-0	0.512 ± 0.008	0.354 ± 0.020	0.492 ± 0.020	inches
RPCA1206				178.50 ± 1.50	60 +1/-0	13.00 ± 0.20	9.00 ± 0.50	12.50 ± 0.50	mm
RPCA1210				7.028 ± 0.059	2.362 +0.039/-0	0.512 ± 0.008	0.354 ± 0.020	0.492 ± 0.020	inches
				178.50 ± 1.50	60 +1/-0	13.00 ± 0.20	9.00 ± 0.50	12.50 ± 0.50	mm
RPCA2010	Plastic Tape	12 mm		7.028 ± 0.059	2.362 +0.039/-0	0.512 ± 0.020	0.512 ± 0.020	0.610 ± 0.020	inches
RPCA2512				178.50 ± 1.50	60 +1/-0	13.00 ± 0.50	13.00 ± 0.50	15.50 ± 0.50	mm
				7.028 ± 0.059	2.362 +0.039/-0	0.512 ± 0.020	0.512 ± 0.020	0.610 ± 0.020	inches
				178.50 ± 1.50	60 +1/-0	13.00 ± 0.50	13.00 ± 0.50	15.50 ± 0.50	mm

Packaging Specifications - Paper Tape

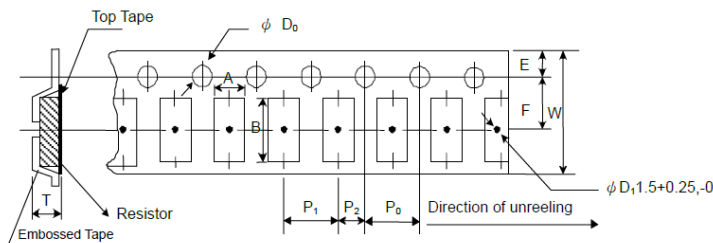


Type/Code	A	B	W	E	F	Unit
RPCA0402	0.026 ± 0.004	0.045 ± 0.004	0.315 ± 0.008	0.069 ± 0.004	0.138 ± 0.002	inches
	0.65 ± 0.10	1.15 ± 0.10	8.00 ± 0.20	1.75 ± 0.10	3.50 ± 0.05	mm
RPCA0603	0.043 ± 0.004	0.075 ± 0.004	0.315 ± 0.008	0.069 ± 0.004	0.138 ± 0.002	inches
	1.10 ± 0.10	1.90 ± 0.10	8.00 ± 0.20	1.75 ± 0.10	3.50 ± 0.05	mm
RPCA0805	0.063 ± 0.004	0.094 ± 0.008	0.315 ± 0.008	0.069 ± 0.004	0.138 ± 0.002	inches
	1.60 ± 0.10	2.40 ± 0.20	8.00 ± 0.20	1.75 ± 0.10	3.50 ± 0.05	mm
RPCA1206	0.075 ± 0.004	0.138 ± 0.008	0.315 ± 0.008	0.069 ± 0.004	0.138 ± 0.002	inches
	1.90 ± 0.10	3.50 ± 0.20	8.00 ± 0.20	1.75 ± 0.10	3.50 ± 0.05	mm
RPCA1210	0.114 ± 0.004	0.138 ± 0.008	0.315 ± 0.008	0.069 ± 0.004	0.138 ± 0.002	inches
	2.90 ± 0.10	3.50 ± 0.20	8.00 ± 0.20	1.75 ± 0.10	3.50 ± 0.05	mm

Packaging Specifications - Paper Tape (cont.)

Type/Code	P ₀	P ₁	P ₂	∅D ₀	T	Unit
RPCA0402	0.157 ± 0.004	0.079 ± 0.002	0.079 ± 0.002	0.059 + 0.004/-0	0.018 ± 0.004	inches
	4.00 ± 0.10	2.00 ± 0.05	2.00 ± 0.05	1.50 + 0.1/-0	0.45 ± 0.10	mm
RPCA0603	0.157 ± 0.004	0.157 ± 0.002	0.079 ± 0.002	0.059 + 0.004/-0	0.028 ± 0.004	inches
	4.00 ± 0.10	4.00 ± 0.05	2.00 ± 0.05	1.50 + 0.1/-0	0.70 ± 0.10	mm
RPCA0805	0.157 ± 0.004	0.157 ± 0.002	0.079 ± 0.002	0.059 + 0.004/-0	0.033 ± 0.004	inches
	4.00 ± 0.10	4.00 ± 0.05	2.00 ± 0.05	1.50 + 0.1/-0	0.85 ± 0.10	mm
RPCA1206	0.157 ± 0.004	0.157 ± 0.002	0.079 ± 0.002	0.059 + 0.004/-0	0.033 ± 0.004	inches
	4.00 ± 0.10	4.00 ± 0.05	2.00 ± 0.05	1.50 + 0.1/-0	0.85 ± 0.10	mm
RPCA1210	0.157 ± 0.004	0.157 ± 0.002	0.079 ± 0.002	0.059 + 0.004/-0	0.033 ± 0.004	inches
	4.00 ± 0.10	4.00 ± 0.05	2.00 ± 0.05	1.50 + 0.1/-0	0.85 ± 0.10	mm

Packaging Specifications – Plastic Tape



Type/Code	A	B	W	E	F	Unit
RPCA2010	0.110 ± 0.004	0.213 ± 0.008	0.472 ± 0.012	0.069 ± 0.004	0.217 ± 0.002	inches
	2.80 ± 0.10	5.40 ± 0.20	12.00 ± 0.30	1.75 ± 0.10	5.50 ± 0.05	mm
RPCA2512	0.138 ± 0.004	0.264 ± 0.004	0.472 ± 0.012	0.069 ± 0.004	0.217 ± 0.002	inches
	3.50 ± 0.10	6.70 ± 0.10	12.00 ± 0.30	1.75 ± 0.10	5.50 ± 0.05	mm

Type/Code	P ₀	P ₁	P ₂	∅D ₀	T	Unit
RPCA2010	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.059 + 0.004/-0	0.047 - 0.000	inches
	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	1.50 + 0.1/-0	1.20 - 0.00	mm
RPCA2512	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.059 + 0.004/-0	0.047 - 0.000	inches
	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	1.50 + 0.1/-0	1.20 - 0.00	mm

Marking

- No marking for 0402
- 3-digit marking for 0603 in E24

3-digit marking for 0603 in E24	
Example:	
101 = 100 Ω	
102 = 1K Ω	

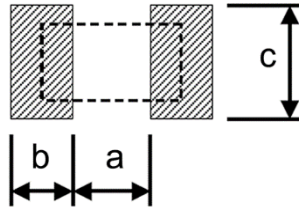
101 1st and 2nd digits are E24 code
3rd digit is the multiplier

E24 Code	10	11	12	13	15	16	18	20	22	24	27	30	33	36	39	43	47	51	56	62	68	75	82	91
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- 4-digit marking for 0805-2512

4-digit marking for 0805-2512					
Resistance	100 Ω	2.2K Ω	10K Ω	100K Ω	1M Ω
Marking	1000	2201	1002	1003	1004

Recommended Pad Layout

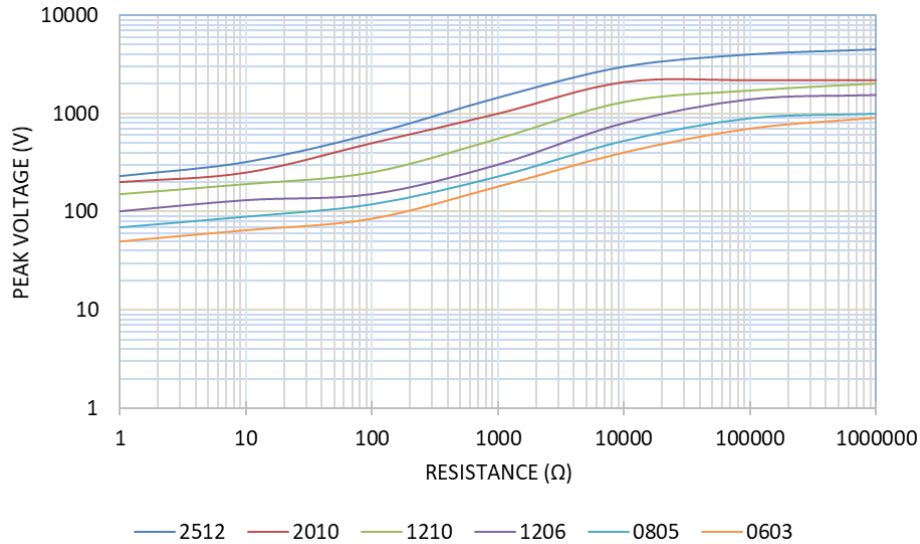


Type/Code	a	b	c	Unit
RPCA0402	0.020	0.018	0.024	inches
	0.50	0.45	0.60	mm
RPCA0603	0.035	0.024	0.035	inches
	0.90	0.60	0.90	mm
RPCA0805	0.047	0.028	0.051	inches
	1.20	0.70	1.30	mm
RPCA1206	0.079	0.035	0.063	inches
	2.00	0.90	1.60	mm
RPCA1210	0.079	0.035	0.110	inches
	2.00	0.90	2.80	mm
RPCA2010	0.150	0.035	0.110	inches
	3.80	0.90	2.80	mm
RPCA2512	0.193	0.039	0.134	inches
	4.90	1.00	3.40	mm

Lightning Surge

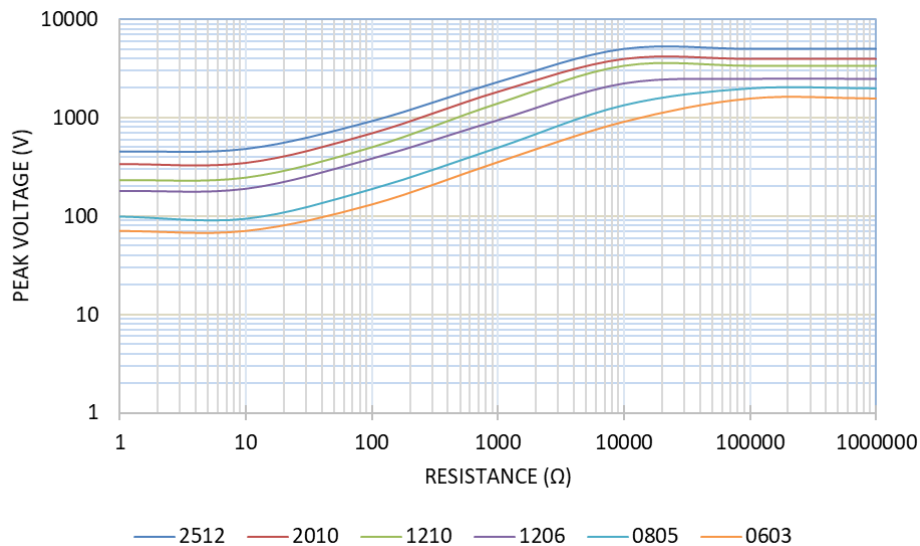
Resistors are tested in accordance with IEC 60115-1 using both 1.2 / 50 us and 10 / 700 pulse shapes. The limit of acceptance is a shift in resistance of less than 1% from the initial value.

1.2/50us Lightning Surge (*)
RPCA (Standard Power) tolerances of 0.5% and 1%
RPCA-HP (High Power) all tolerances
RPCA-UP (Ultra High Power) all tolerances

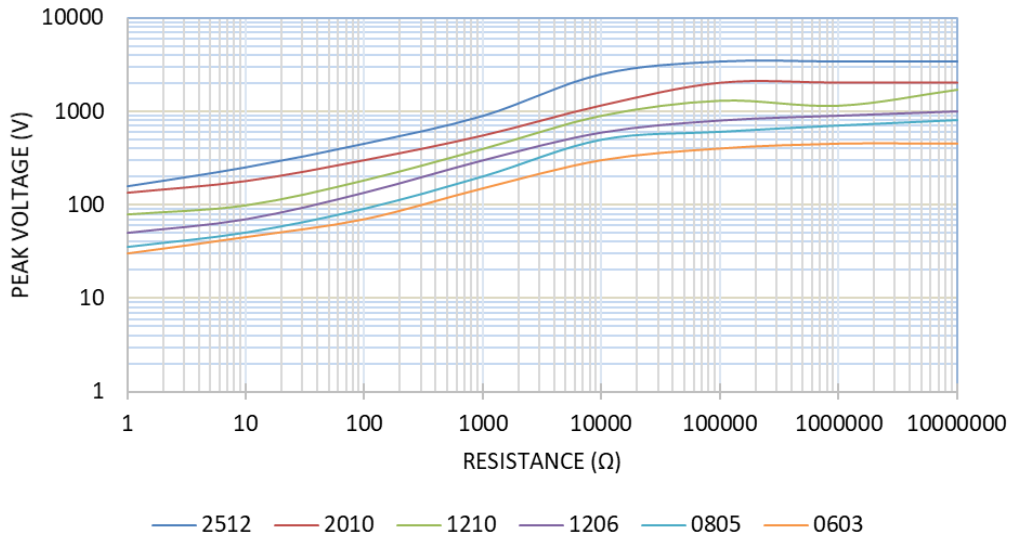


(*) Note: Data provided shows typical performance and is for reference only.

1.2/50us Lightning Surge (*)
RPCA (Standard Power)
Tolerances of 5%, 10% and 20%

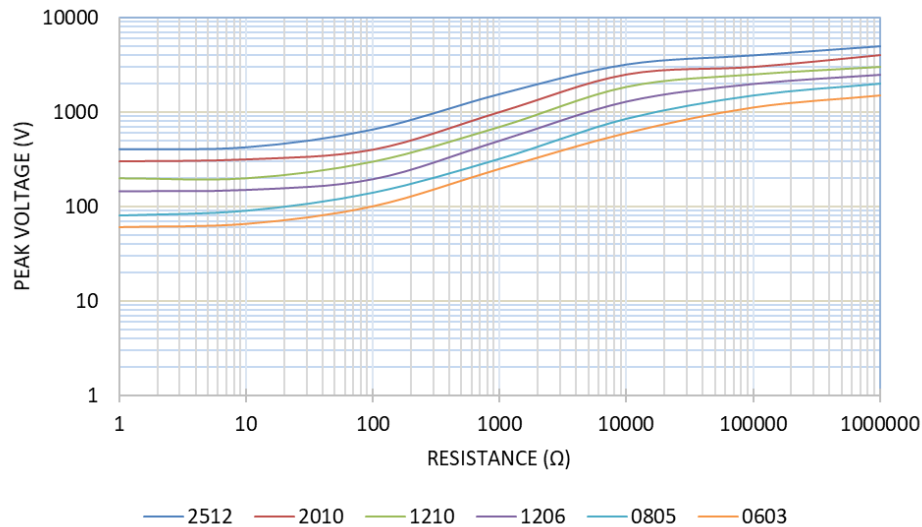


10/700us Lightning Surge (*)
RPCA (Standard Power) tolerances of 0.5% and 1%
RPCA-HP (High Power) all tolerances
RPCA-UP (Ultra High Power) all tolerances



(*) Note: Data provided shows typical performance and is for reference only.

10/700us Lightning Surge (*)
RPCA (Standard Power)
Tolerances of 5%, 10% and 20%

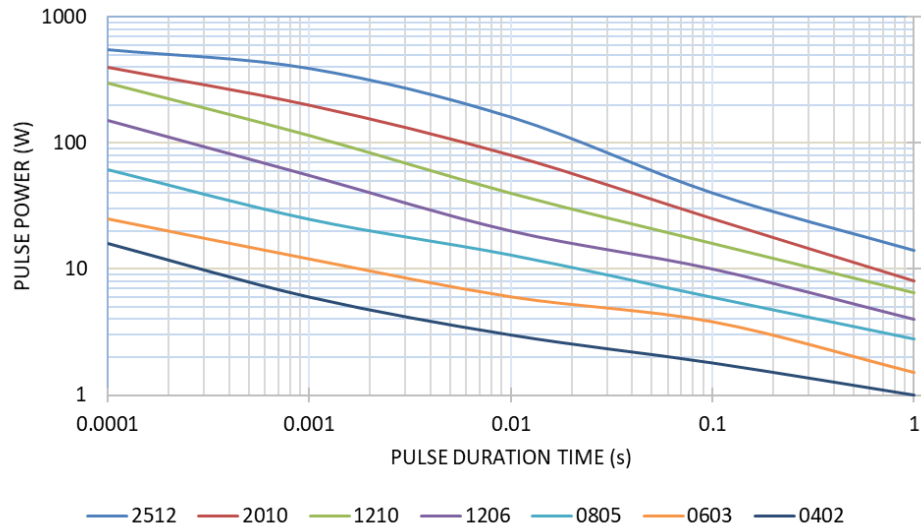


(*) Note: Data provided shows typical performance and is for reference only.

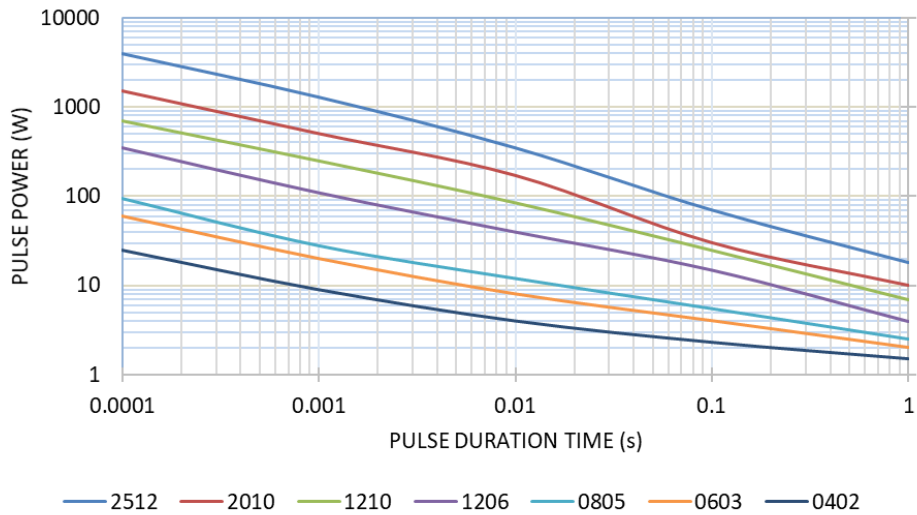
Pulse Withstand Capacity

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 ohms)
RPCA (Standard Power) tolerances of 0.5% and 1%
RPCA-HP (High Power) all tolerances
RPCA-UP (Ultra High Power) all tolerances



Single Pulse Power (100 ohms)
RPCA (Standard Power)
Tolerances of 5%, 10% and 20%

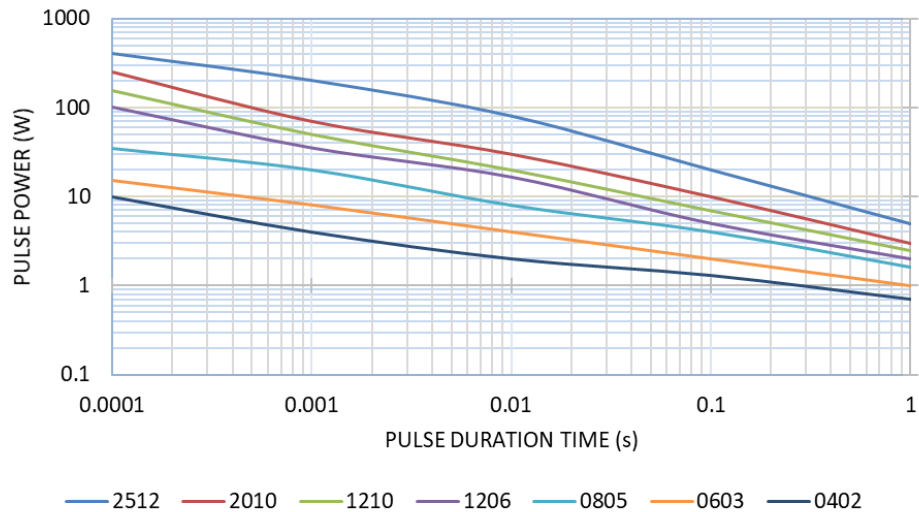


This data is for the 100 Ω resistance value for each size. Pulse power handling is dependent on the resistance value. For resistance values higher or lower than 100 Ω, contact Stackpole for advice on pulse handling characteristics of your particular resistance value of interest.

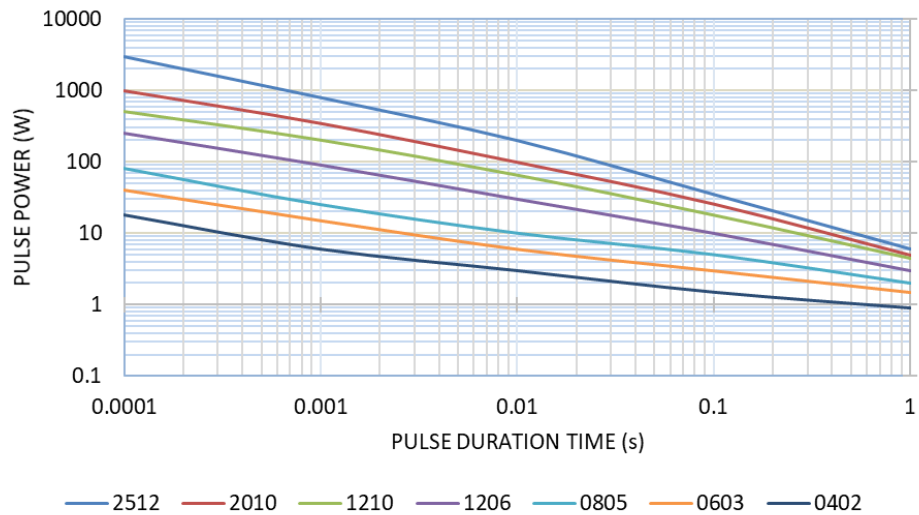
Continuous Pulse

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.

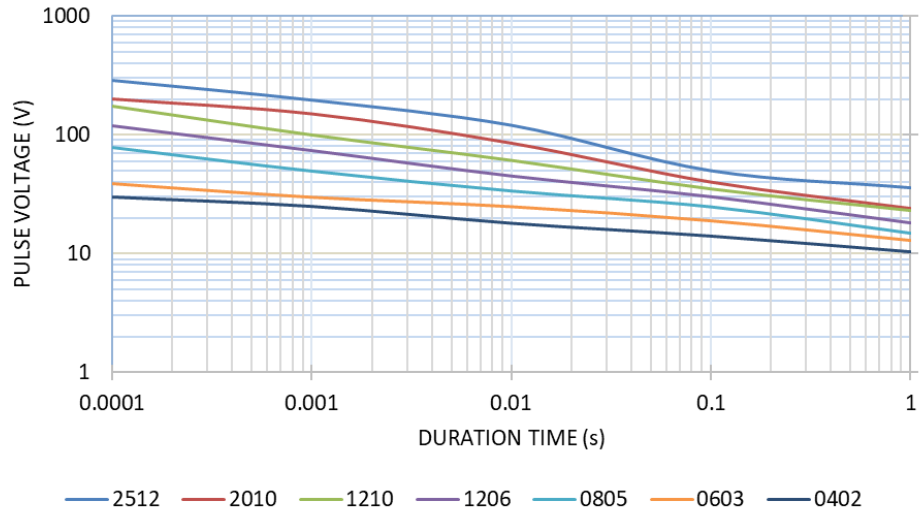
Continuous Pulse Power (100 ohms)
RPCA (Standard Power) tolerances of 0.5% and 1%
RPCA-HP (High Power) all tolerances
RPCA-UP (Ultra High Power) all tolerances



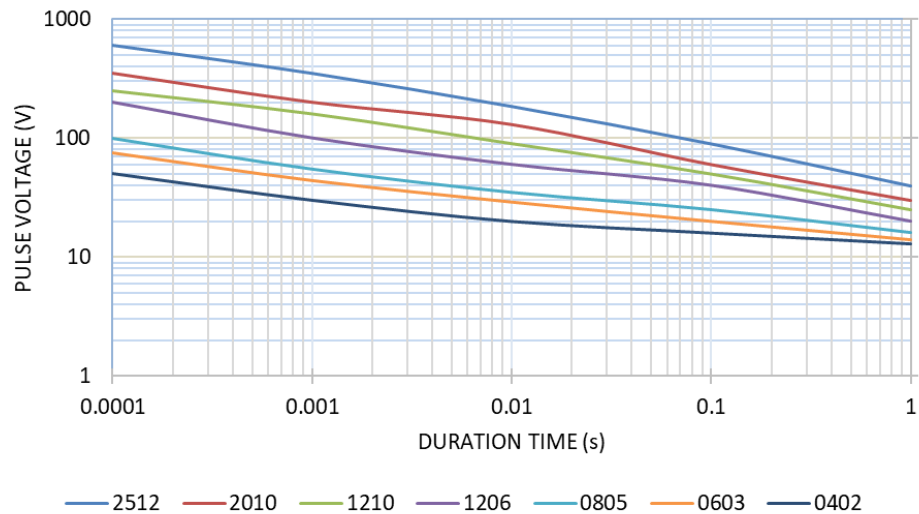
Continuous Pulse Power (100 ohms)
RPCA (Standard Power)
Tolerances of 5%, 10% and 20%



Pulse Voltage (100 ohms)
RPCA (Standard Power) tolerances of 0.5% and 1%
RPCA-HP (High Power) all tolerances
RPCA-UP (Ultra High Power) all tolerances



Pulse Voltage (100 ohms)
RPCA (Standard Power)
Tolerances of 5%, 10% and 20%



Part Marking

E96 and E24 Values 0805-2512

The nominal resistance is marked on the surface of the overcoating with the use of four character markings. Values below 10Ω will use "R" as the decimal holder.



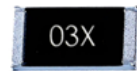
E24 Values for 0603 (5% tolerance)

The nominal resistance is marked on the surface of the overcoating with the use of three character markings.



E96 Values for 0603 (0.5% and 1% tolerances)

A two character number is assigned to each standard R-Value (E96) as shown in the chart below. This is followed by one alpha character which is used as a multiplier. Each letter from "Y" - "F" represents a specific multiplier.



Alpha Character = Multiplier	
Y = 0.1	C = 1000
X = 1	D = 10000
A = 10	E = 100000
B = 100	F = 1000000

Chip Marking	Value
01B	10.0 x 100 = 1 KΩ
25C	17.8 x 1000 = 17.8 KΩ
93D	90.9 x 10000 = 909 KΩ

E96											
#	R-Value	#	R-Value	#	R-Value	#	R-Value	#	R-Value	#	R-Value
01	10.0	17	14.7	33	21.5	49	31.6	65	46.4	81	68.1
02	10.2	18	15.0	34	22.1	50	32.4	66	47.5	82	69.8
03	10.5	19	15.4	35	22.6	51	33.2	67	48.7	83	71.5
04	10.7	20	15.8	36	23.2	52	34.0	68	49.9	84	73.2
05	11.0	21	16.2	37	23.7	53	34.8	69	51.1	85	75.0
06	11.3	22	16.5	38	24.3	54	35.7	70	52.3	86	76.8
07	11.5	23	16.9	39	24.9	55	36.5	71	53.6	87	78.7
08	11.8	24	17.4	40	25.5	56	37.4	72	54.9	88	80.6
09	12.1	25	17.8	41	26.1	57	38.3	73	56.2	89	82.5
10	12.4	26	18.2	42	26.7	58	39.2	74	57.6	90	84.5
11	12.7	27	18.7	43	27.4	59	40.2	75	59.0	91	86.6
12	13.0	28	19.1	44	28.0	60	41.2	76	60.4	92	88.7
13	13.3	29	19.6	45	28.7	61	42.2	77	61.9	93	90.9
14	13.7	30	20.0	46	29.4	62	43.2	78	63.4	94	93.1
15	14.0	31	20.5	47	30.1	63	44.2	79	64.9	95	95.3
16	14.3	32	21.0	48	30.9	64	45.3	80	66.5	96	97.6

Note: 0402 sizes are unmarked.

RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

RoHS Compliance Status						
Standard Product Series	Description	Package / Termination Type	Standard Series RoHS Compliant	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/MM)
RPCA	Pulse Withstanding Thick Film Surface Mount Chip Resistor	SMD	YES(1)	100% Matte Sn over Ni	Jan-03	03/01

Note (1): RoHS Compliant by means of exemption 7c-l.

“Conflict Metals” Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the “conflict region” of the eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

Compliance to “REACH”

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, “The Registration, Evaluation, Authorization and Restriction of Chemicals”, otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

How to Order

R	P	C	A	1	2	0	6	F	T	1	R	2	0	-	H	P
Product Series		Power Rating		Tolerance			Packaging				Resistance Value		Special			
RPCA		Size	W	Code	Tol	Value	Code	Description	Size	Quantity	Four characters with the multiplier used as the decimal holder.		Code	Description		
		0402	0.2	D	0.5%	E96	T	7" Reel Paper Tape	0402	10000	300 ohm = 300R 10.2 Kohm = 10K2 1 Mohm = 1M00 Zero ohm jumper = 0R00		blank	Standard		
		0603	0.1	F	1%	E24			0603	5000						
		0603	0.125	J	5%	E24	0805		5000							
		0603-HP	0.25	K	10%		1206		1210							
		0603-UP	0.33	M	20%		2010		4000							
		0805	0.125	Z	Jumper		7" Reel Plastic Tape	2010	4000	2512	4000	-HP	High Power			
		0805	0.25						0805-HP	0.4			-UP	Ultra High Power		
		0805-HP	0.4						0805-UP	0.5						
		0805-UP	0.5						1206	0.33						
		1206	0.33						1206-HP	0.5						
		1206-HP	0.5						1206-UP	0.75						
		1206-UP	0.75						1210	0.5						
		1210	0.5						1210-HP	0.75						
		1210-HP	0.75						2010	0.75						
		2010	0.75						2010-HP	1						
		2010-HP	1						2512	1.5						
		2512	1.5						2512-HP	2						
		2512-HP	2													