

# HIGH SURGE NON-INDUCTIVE COMPOSITION RESISTORS UP TO 400 WATT, 160KV & 150,000 JOULES

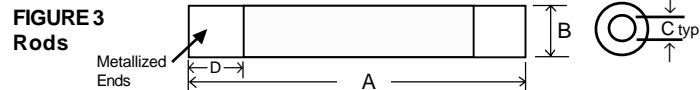
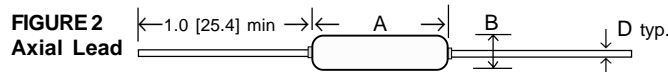
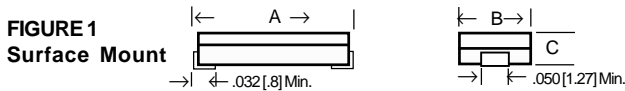
## PCN SERIES



- Industry's widest range of composition resistors!
- High energy and voltage capability, non-inductive
- Standard tolerances of 10% & 20% (5% avail.)

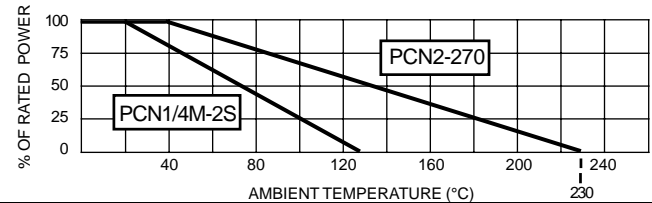
### OPTIONS

- Option HC: special coating for oil immersion (+175°C max)
- Option 37: Group A screening per Mil-R-39008
- Custom rod and disk sizes, expanded resistance range, custom metallization, increased voltage/dielectric/joule ratings avail. End caps, lug terminals, & mounting clips avail.



Type PCN resistors are manufactured from carbon and ceramic granules into a solid bulk composition enabling pulse capabilities unmatched by wirewound or film resistors. Marking is alpha-numeric or color band. Flexible manufacturing process enables customized rod or disk sizes up to 5" diameter and 18" long. Typical applications include snubber circuits, lightning surge, grounding resistors, RFI suppression, dummy loads, etc. Depending on the application, PCN resistors can often satisfy requirements of UL217, 268, 294, 497A, 508, 913, 943, 991, 1459, & 1971; IEEE587, C37.90, & Bellcore TR357 & 1089; EN61000-4, 60601, & 50082.

### DERATING



RCD Type	Fig.	Wattage	Max Working Voltage <sup>1</sup>	Pulse Voltage <sup>2</sup>	Joule Rating <sup>3</sup>	Resistance Range <sup>4</sup>	A	B	C	D
PCN1/4M	1	.25W	250V	2KV	2	1Ω - 10M	.450±.032 [11.4±0.8]	.225±.015 [5.7±.38]	.180 ±.020 [4.6±.50]	-
PCN1/2M	1	.5W	350V	2.5KV	7	1Ω - 10M	.625±.032 [15.9±0.8]	.276±.015 [7.0±.38]	.245±.025 [6.22±.64]	-
PCN1M	1	1W	500V	3KV	18	2Ω - 1M	.811±.020 [20.6±0.5]	.283±.025 [7.2±.63]	.283 ±.025 [7.2±.63]	-
PCN1/2S	2	.5W	250V	2KV	2	1Ω - 10M	.250 ±.024 [6.5 ±.60]	.100±.028 [2.5±.70]	-	.025 [.64]
PCN1S	2	1W	350V	2.5KV	7	1Ω - 10M	.394 ±.032 [10 ±.80]	.140±.028 [3.6±.70]	-	.032 [.81]
PCN2S	2	2W	500V	8KV	16	2Ω - 1M	.610±.06 [15.5±1.5]	.220±.04 [5.59±1.0]	-	.034 [.86]
PCN2	2	2W	500V	4KV	25	5.6Ω to 51K	.775 ±.06 [19.7±1.5]	.225±.05 [5.72±1.27]	-	.032 [.81]
PCN3	2	3W	600V	5KV	96	10Ω to 20K	1.00±.05 [25.4±1.27]	.339±.05 [8.61±1.27]	-	.032 [.81]
PCN5	2	5W	700V	10KV	160	10Ω to 30K	1.58±.05 [40.1±1.27]	.339±.05 [8.61±1.27]	-	.032 [.81]
PCN10	3	10W	800V	20KV	370	18Ω to 23K	2.36 ±.05 [60 ±1.27]	.551±.05 [14±1.27]	.31 [.8]	.4 [.10]
PCN20	3	20W	900V	30KV	560	26Ω to 28K	3.15 ±.05 [80 ±1.27]	.551±.05 [14±1.27]	.31 [.8]	.4 [.10]
PCN30	3	30W	1000V	35KV	1060	21Ω to 23K	3.94±.05 [100±1.27]	.788±.05 [20±1.27]	.55 [.14]	.5 [.13]
PCN30S	3	30W	1200V	50KV	10,000	10Ω to 45K	5.0 ±.062 [127±1.57]	.750±.05 [19±1.27]	std=solid, opt.T=.24 [6]	.6 [.15]
PCN50	3	50W	1700V	70KV	2450	45Ω to 58K	7.87±.08 [200 ± 2]	.788±.05 [20±1.27]	.55 [.14]	.6 [.15]
PCN50S	3	50W	1700V	60KV	20,000	5.6Ω to 30K	6.0 ±.062 [152±1.57]	1.0 ±.05 [25.4±1.27]	std=solid, opt.T=.48[12]	.5 [.13]
PCN75S	3	75W	1800V	80KV	30,000	8Ω to 41K	8.0 ±.062 [203±1.57]	1.0 ±.05 [25.4±1.27]	std=solid, opt.T=.48[12]	.87 [.22]
PCN80	3	80W	2000V	80KV	4360	45Ω to 50K	9.84±.08 [250 ± 2]	.985±.05 [25±1.27]	.71 [.18]	.87 [.22]
PCN100	3	100W	2400V	100KV	5430	55Ω to 100K	11.81±.08 [300 ± 2]	.985±.05 [25±1.27]	.71 [.18]	.87 [.22]
PCN100S	3	100W	2400V	120KV	40,000	12Ω to 60K	12.0 ±.062 [305±1.6]	1.0 ±.05 [25.4±1.27]	std=solid, opt.T=.48[12]	.87 [.22]
PCN150	3	150W	2500V	100KV	14,760	26Ω to 28K	11.81±.08 [300 ± 2]	1.575±.06 [40±1.52]	1.10 [.28]	.87 [.22]
PCN150S	3	150W	2500V	160KV	60,000	15Ω to 80K	16.0 ±.062 [406±1.6]	1.0 ±.05 [25.4±1.27]	std=solid, opt.T=.48[12]	.87 [.22]
PCN270	3	270W	2600V	160KV	30,000	21Ω to 23K	17.72±.08 [450 ± 2]	1.969±.06 [50±1.52]	1.50 [.38]	1.0 [.25]
PCN400S	3	400W	2600V	160KV	150,000	6Ω to 30K	16.0 ±.062 [406±1.6]	1.63±.06 [41.4±1.52]	std=solid, opt.T=.48[12]	.87 [.22]

<sup>1</sup> Max. continuous voltage is determined by  $E = (PR)^{1/2}$ , E not to exceed the Max. Working Voltage. <sup>2</sup> Peak pulse voltage is dependent on resistance and pulse waveform. Levels listed are based on 10X160 nS pulse, 10KΩ. Increased voltage available. Consult factory on each application. <sup>3</sup> Joule rating is dependent on resis. value, pulse duration, and repetition rate. Levels listed are based on 10ms pulse width X 20,000 cycles, 150Ω, full cooling between pulses. Increased joule ratings available. Consult factory on each application. <sup>4</sup> Expanded resistance range available.

### PERFORMANCE\*

Specification	PCN1/4M-PCN2S	PCN2- PCN400S
Temperature Cycling	1%	1%
Temperature Coefficient	.15%/°C Max.	.15%/°C Max.
Moisture Resistance	5%	5%
Load Life (500 hrs)	±10%	±5%
Operating Temp. Range	-55 to +125°C	-55 to +230°C
Dielectric Strength (V-block)	500V, 60S	0V**
Overload (nte 2.5xRCWV)	3x Rated W, 5S	10x Rated W, 5S
Derating (W, V, & E)	.952%/°C >20°C	.526%/°C >40°C

\*Typical performance 10Ω to 1MΩ (consult factory for requirements outside this range)  
\*\* Specify Opt. HC for 500V dielectric or Opt.33 for 1KV (derate pulse voltage 50% & max temp to +175°C)

### P/N DESIGNATION: PCN30 - 102 - K B W

**RCD Type** \_\_\_\_\_  
**Options:** T, HC, 37, 33 (other options as assigned by RCD. Leave blank if standard)  
**3-Digit Resis. Code:** 2 signif. digits & multiplier (1R0=1Ω, 100=10Ω, 101=100Ω, 102=1K, etc.)  
**Tolerance Code:** J=5%, K=10%, M=20%  
**Packaging:** B = Bulk, T = T&R (PCN1/4M through PCN5 only)  
**Termination:** W = Lead-free, Q = Tin/Lead (leave blank if either is acceptable)