

# AXIAL LEADED CERAMIC-HOUSED POWER RESISTORS NPW1 TO NPW25

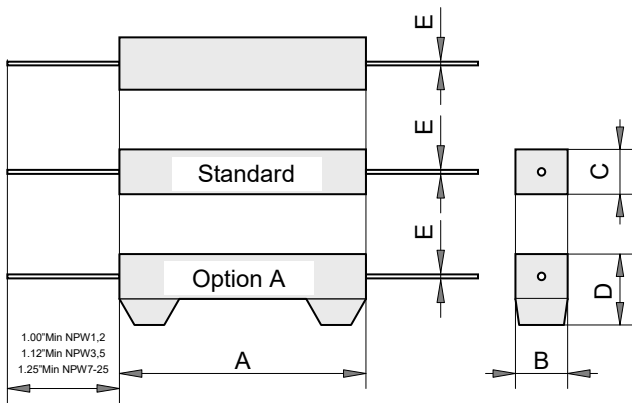
## Features and Applications

Low cost and the industry's broad selection, tolerance to  $\pm 0.05\%$ , TCR to  $\pm 5$  ppm/ $^{\circ}\text{C}$ .  
Wide resistance range covers  $05\Omega$  to  $1\text{Meg}\Omega$  and rated power of  $1\text{W}$  to  $25\text{W}$ .  
Tape & Reel is available up to  $10\text{W}$  size.

PW resistors are designed for general purpose and semi-precision power applications. The fireproof ceramic construction provides excellent thermal conductivity and resistance to moisture & solvents.  
Typical marking is 'NIKKOHM', resistance value, tol. type. The resistance element is wirewound on lower values, & power film on higher values.

Temperature Rise Power resistors reach elevated temperatures (typically  $125^{\circ}\text{C}$  to  $250^{\circ}\text{C}$ ) when operated at full wattage, so when utilizing above 50% power rating, the bodies should be mounted off the PCB with adequate clearance from heat sensitive components. Opt. A standoffs are helpful in preventing heat transfer to PCB.

## Dimensions and Structure



## Performance

Temperature Coefficient, $>1\Omega$	100ppm/ $^{\circ}\text{C}$ typ., 300ppm max. <sup>1</sup>
Temperature Coefficient, $<1\Omega$	200ppm/ $^{\circ}\text{C}$ typ., 600ppm max. <sup>1</sup>
Operating Temperature	$-55^{\circ}$ to $+235^{\circ}\text{C}$ <sup>2</sup>
Terminal Strength	5 lbs. minimum
Dielectric Strength	1000V
5 Sec. overload ( $\leq 1.5x$ max V)	3X rated watt.
5 Sec. overload ( $\leq 1.5x$ max V)	5X rated watt. (wire wound)
Moisture Resistance	3.0% <sup>3</sup>
High Temp. Exposure	1.0% <sup>3</sup>
Load Life (1000 hours)	3.0% <sup>3</sup>
Temperature Cycling	2.0% <sup>3</sup>
Shock and Vibration	1.0% <sup>3</sup>

1/ TC to 5ppm available  $>10\Omega$ , 10ppm  $1-10\Omega$ , 20ppm  $0.1-1\Omega$

2/  $275^{\circ}\text{C}$  avail

3/ Tightened performance avail

Type	Wattage (W)		Resistance Range ( $\Omega$ )	Rated Continuous Working Voltage (V)	Dimensions (mm)				
	Standard	Option B			A max.	B+/-0.81	C+/-1.3	D max.	E+/-0.1
NPW1	1	2	0.05 - 1M	100	15.8	6.4	6.4	N/A	0.7
NPW2	2	3	0.05 - 1M	100	18.3	6.6	6.8	4.9	0.7
NPW3	3	5	0.05 - 1M	150	23.1	7.9	7.9	10.9	0.8
NPW5	5	7	0.05 - 1M	200	23.1	9.7	8.9	11.9	0.8
NPW7	7	10	0.05 - 1M	350	36.0	9.7	8.9	13.2	0.8
NPW10	10	-	0.05 - 1M	500	50.0	9.7	9.7	13.2	0.8
NPW15	15	-	0.05 - 20k	540	50.0	12.7	12.7	17.2	0.8
NPW20	20	-	0.05 - 40k	600	65.0	14.7max	12.7	17.8	0.8
NPW22	22	-	0.05 - 40k	650	65.0	14.7max	12.7	17.8	0.8
NPW25	25	-	0.05 - 40k	700	65.0	14.7max	12.7	17.8	0.8

1. Maximum working voltage is determined by  $E=\sqrt{(PR)}$ . E should not exceed value listed.

## Ordering Information

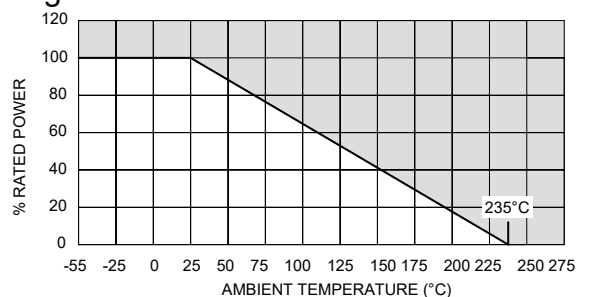
TYPE	OPT.	RES	TOL	PACK	TCR	TERMINAL
NPW25	A	100	J	B	-	W
NPW1	-	R05	K	B	-	W
	A	1M0	J	T	50	Q
NPW20			G		100	
NPW22			F		200	
NPW25			D			

TOL: D(0.5%), F(1%), G(2%), J(5%), K(10%)

PACKAGE: BULK(B), TAPE(T)

TERMINALS: W(Lead-free), Q(Tin/Lead)

## Derating



20171001