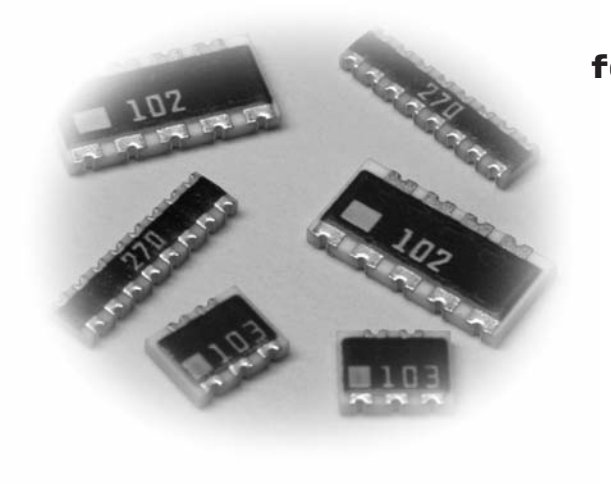
KOA SPEER ELECTRONICS, INC.

CNB

bussed concave termination square corner resistor array

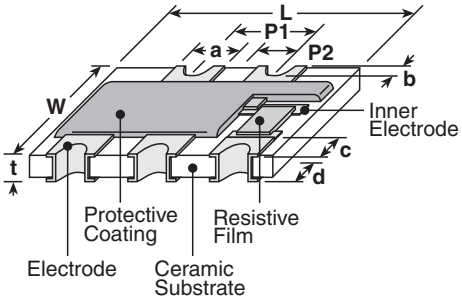


features

- Manufactured to type RK73 standards
- Less board space than individual chips
- Four or eight bussed resistor elements included in one array, concave terminations
- Marking: Black body, white three digits + pin number
- Products with lead-free terminations meet RoHS requirements. Pb located in glass material, electrode and resistor element is exempt per Annex 1, exemption 5 of EU directive 2005/95/EC

RoHS COMPLIANT

dimensions and construction



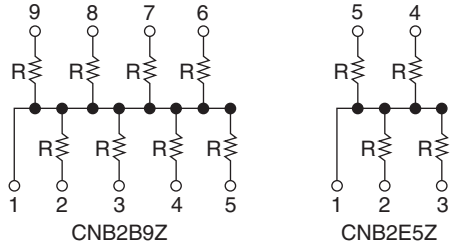
Size Code	Dimensions inches (mm)								
	L	W	t	P1	P2	a (ref.)	b (ref.)	c (ref.)	d
2B9Z	.252±.008 (6.4±0.2)	.126±.008 (3.2±0.2)	.024±.004 (0.6±0.1)	.051±.004 (1.3±0.1)	.026±.004 (0.65±0.1)	.033 (0.85)	.006 (0.15)	.018 (0.45)	.024±.006 (0.6±0.15)
2E5Z	.126±.008 (3.2±0.2)	.098±.008 (2.5±0.2)	.024±.004 (0.6±0.1)	.039±.004 (1.0±0.1)	.020±.004 (0.50±0.1)	.026 (0.65)	.006 (0.15)	.012 (0.3)	.020±.006 (0.5±0.15)

ordering information

New Part #	CNB	2B	9	Z	T	TE	103	J
	Type	Size	Elements	Circuit Symbol	Termination Material	Packaging	Nominal Resistance	Tolerance
		2B 2E	5 9		T: Sn (Other termination styles may be available, please contact factory for options)	TE: 7" embossed plastic	2 significant figures + 1 multiplier	J: ±5%

For further information on packaging, please refer to Appendix A.

circuit schematics



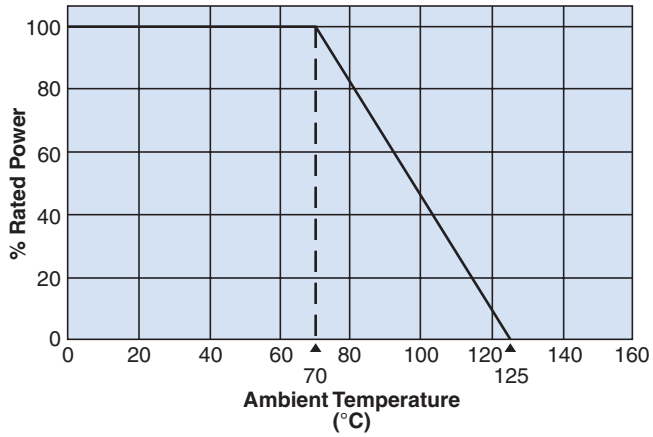
applications and ratings

Part Designation	Power Rating @ 70°C (Per Element)	T.C.R. (ppm/°C) Max.	Resistance Range E-3*	Resistance Tolerance	Absolute Maximum Working Voltage	Maximum Overload Voltage (5 Secs. Max.)	Operating Temperature Range
CNB2B9Z	1/16W (.063W)	±200	1KΩ - 470KΩ	J: ±5%	50V	100V	-55°C to +125°C
CNB2E5Z							

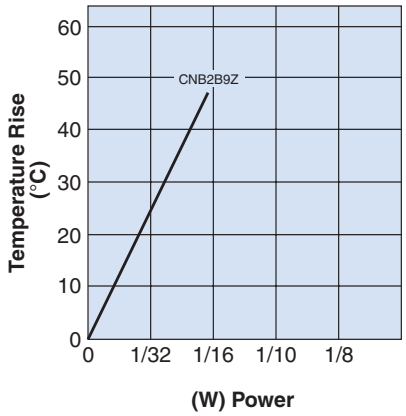
* E-3 significant figures (per decade) are 1.0, 2.2 and 4.7.

environmental applications

Derating Curve



Surface Temperature Rise



Performance Characteristics

Parameter	Maximum Δ R	Test Method
Thermal Shock	±(1.0% + 0.1Ω)	MIL-STD-202, Method 107, -55°C to +125°C, 5 cycles
Low Temperature Operation		MIL-R-55342 π 4.7.4, 1 hour @ -55°C followed by 45 minutes of RCWV*
High Temperature Exposure		MIL-R-55342 π 4.7.6, 100 hours @ 125°C
Short Time Overload	±(2.0% + 0.05Ω)	MIL-R-55342 π 4.7.5, 2.5 x RCWV for 5 seconds
Resistance to Solder Heat	±(1.0% + 0.1Ω)	MIL-R-55342 π 4.7.7, 260°C for 10 seconds
Terminal Strength-Push		1.2 Kg for 1 minute
Terminal Strength-Bend	±(0.5% + 0.05Ω)	5mm deflection in either direction for 10 seconds
Moisture Resistance	±5.0%	MIL-STD-202, Method 103, 40°C, 90 - 95% RH, 1000 hours
Life		MIL-STD-202, Method 108, 70°C, 1000 hours @ RCWV, 1.5 hr ON, 0.5 hr OFF
Pulse		2.5 x RCWV, not exceeding max. overload voltage, 1 sec. ON, 25 sec. OFF, 10,000 cycles
Temperature Cycling	±1.0%	30 min. @ -55°C, 15 min. @ +25°C, 30 min. @ +125°C, 15 min. @ +25°C, 5 cycles
Terminal Adhesion	15 Grams Minimum	Axial pull, one terminal at a time
Dielectric Withstanding Voltage	400V	1 minute minimum, MIL-STD-202, Method 301
Insulation Resistance	1,000 MΩ Minimum	—

* RCWV = Rated Continuous Working Voltage.