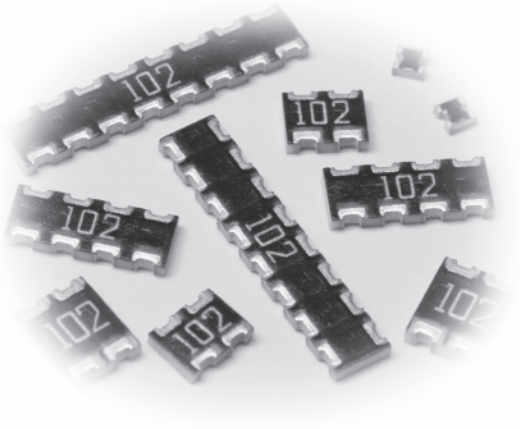
KOA SPEER ELECTRONICS, INC.

CN

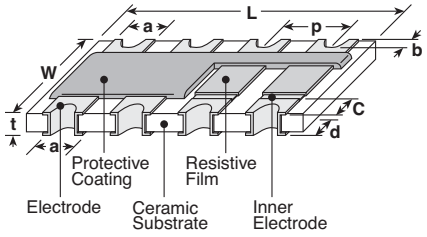
concave termination with square corners resistor array



features

- Manufactured to type RK73 standards
- Less board space than individual chips
- Isolated resistor elements
- Marking: Marked with resistance value
  1E, no marking
- Products with lead-free terminations meet EU RoHS requirements. EU RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- AEC-Q200 Qualified: CN1J4 only

dimensions and construction



Size Code	Dimensions inches (mm)								
	L	W	C	d	t	a (top)	a (bot.)	b	p (ref.)
1E2 (0402x2)	.039±.004 (1.0±0.1)	.039±.004 (1.0±0.1)	.008±.004 (0.2±0.1)	.010±.004 (0.25±0.1)	.014±.004 (0.35±0.1)	.012±.004 (0.3±0.1)	.012±.006 (0.3±0.1)	.003±.002 (0.07±0.05)	.020 (0.5)
1E4 (0402x4)	.079±.004 (2.0±0.1)				.018±.004 (0.45±0.1)				
1J2 (0603x2)	.063±.008 (1.6±0.2)	.063±.008 (1.6±0.2)	.012±.008 (0.3±0.2)	.016±.004 (0.4±0.1)	.024±.004 (0.6±0.1)	.020±.004 (0.5±0.1)	.016±.006 (0.4±0.15)	.006±.004 (0.15±0.1)	.031 (0.8)
1J4 (0603x4)	.126±.008 (3.2±0.2)								
1J8 (0603x8)	.252±.008 (6.4±0.2)								
2A2 (0805x2)	0.1±.008 (2.54±0.2)	.079±.008 (2.0±0.2)	.016±.008 (0.4±0.2)	.022±.004 (0.55±0.1)		.031±.004 (0.8±0.1)	.030±.006 (0.75±0.15)		.050 (1.27)
2A4 (0805x4)	0.2±.008 (5.08±0.2)								
2A8 (0805x8)	0.4±.008 (10.16±0.2)								
2B2 (1206x2)	0.1±.008 (2.54±0.2)	.126±.008 (3.2±0.2)	.020±.012 (0.5±0.3)						
2B4 (1206x4)	0.2±.008 (5.08±0.2)								
2B8 (1206x8)	0.4±.008 (10.16±0.2)								

ordering information

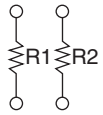
New Part #

CN	1J	4	T	TD	101	J
Type	Size	Elements	Termination Material	Packaging	Nominal Resistance	Tolerance
	1E 1J 2A 2B	2 4 8	T: Sn (Other termination styles may be available, please contact factory for options)	TE: 7" embossed plastic TD: 7" paper tape TED: 10" embossed plastic TDD: 10" paper tape	2 significant figures + 1 multiplier for ±2 & ±5% 3 significant figures + 1 multiplier for ±1%	F: ±1% G: ±2% J: ±5%

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

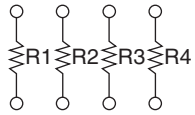
circuit schematic

CN1E2, CN1J2, CN2A2, CN2B2



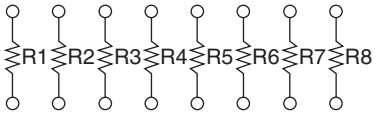
R1 = R2

CN1E4, CN1J4, CN2A4, CN2B4



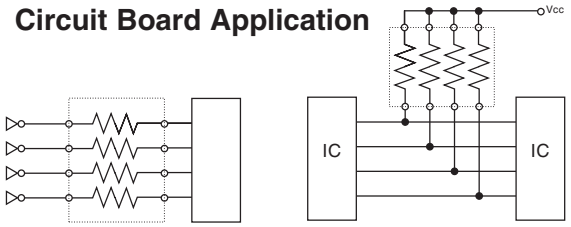
R1 = R2 = R3 = R4

CN1J8, CN2A8, CN2B8



R1 = R2 = R3 = R4 = R5 = R6 = R7 = R8

Circuit Board Application



applications and ratings

Part Designation	Power Rating @ 70°C (Per Element)	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (ppm/°C) Max.		Resistance Range (Ω)			Absolute Maximum Working Voltage	Maximum Overload Voltage (5 Secs. Max.)
				F:±1%	J:±5%, G:±2%	E-24, E-96 (F:±1%)	E-24 (G:±2%)	E-24 (J:±5%)		
CN1E2	1/16W (.063W)	+70°C	—	—	±200: R≥10Ω ±400: R<10Ω	—	—	10 - 100k	25V	50V
CN1E4										
CN1J2	1/16W (.063W)		+125°C	±100: R≥10Ω		10 - 1M	10 - 1M	10 - 1M	50V	100V
CN1J4								1 - 1M		
CN1J8				±200: R≥10Ω				10 - 1M		
CN2A2	1/10W (.100W)					10 - 1M			100V	200V
CN2A4										
CN2A8				—		—				
CN2B2	1/8W (.125W)			±200: R≥10Ω		10 - 1M			200V	400V
CN2B4										
CN2B8				—		—				

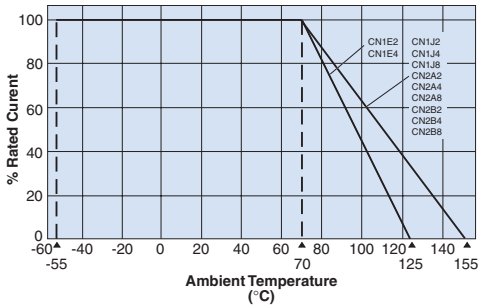
* Note that network resistors generate higher heat rather than single flat chip resistor under rated power output.

Operating Temperature Range: -55°C to +125°C (CN1E), -55°C to +155°C

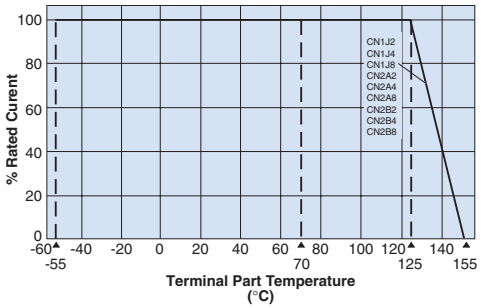
If any questions should arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature," please give priority to the "Rated Terminal Part Temperature." Prior to use and for more details refer to "Introduction of the derating curves on the terminal part temperature" in the beginning of the catalog.

environmental applications

Derating Curve



For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the above derating curve.



For resistors operated at a terminal temperature of described for each size or above, a power rating shall be derated in accordance with the above derating curve.

Performance Characteristics

Parameter	Requirement Δ R ±%		Test Method
	Limit	Typical	
Resistance	Within specified tolerance	—	25°C
T.C.R.	Within specified T.C.R.	—	+25°C/-55°C, +25°C/+125°C
Overload (Short time)	±2.0%	±0.5%	Rated voltage x 2.5 for 5 seconds
Resistance to Solder Heat	±1.0%	±0.25%	260°C ± 5°C, 10 seconds ± 1 second
Rapid Change of Temperature	±1.0%	±0.5%	-55°C (30 minutes), +125°C (30 minutes), 5 cycles
Moisture Resistance	±5.0%	±1.0%	40°C ± 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 70°C	±5.0%	±0.5%	70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
High Temperature Exposure	±1.0%	±0.2%	+125°C, 1000 hours

11/04/15

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KOA Speer:

CN1J4LTD1004F CN2B4LTE1002F CN1J8LTE121J CN1J4LTDD330J CN2A2LTE1270F CN1J4LTD64R9F CN2A2LTE510J CN1J4LTD270J CN2A4LTE510J CN1J8LTE270J CN1J8LTE272J CN1J2LTD3322F CN1J8LTE271J CN1J4LTD433J CN2A4LTE751J CN1J4LTD430J CN1J4LTD12R0F CN1J4LTD333J CN1J4LTDD103J CN1J4LTD620J CN1J2LTD2000F CN2B4LTE2200F CN2B8LTE272J CN2B4LTE270J CN2B8LTE271J CN2B8LTE270J CN2B4LTE621J CN1J4LTD182J CN1J4LTD181J CN1J4LTD180J CN1J4LTD183J CN1J4LTD184J CN1J4LTD202J CN2B4LTE680J CN1J4LTD200J CN1J4LTD51R1F CN2B8LTE510J CN2B4LTE510J CN1J8LTE561J CN1J8LTE560J CN2A8LTE390J CN2A4LTE390J CN2A4LTE270J CN2A4LTE272J CN2B8LTE151J CN2B4LTE151J CN2B4LTE152J CN2B4LTE121J CN1J2LTD3010F CN1J2LTD330J CN1J2LTD331J CN1J4LTD332J CN1J4LTD331J CN1J4LTD393J CN2A8LTE474J CN2A4LTE470J CN2A4LTE1002F CN1J4LTD240J CN1J2LTD1333F CN2B4LTE204J CN2B4LTE200J CN1J4LTD823J CN1J4LTD821J CN2B8LTE301J CN1J8LTE511J CN1J8LTE512J CN2B4LTE302J CN2A2LTE82R5F CN1J2LTD49R9F CN1J4LTD820J CN1J8TTE121J CN2B8TTE270J CN2B4TTE270J CN2B8TTE272J CN2B8TTE271J CN2B4TTE152J CN2B8TTE151J CN2B4TTE151J CN1J8TTE200J CN1J2TTD510J CN1J4TTD510J CN1J4TTD512J CN1J2TTD8060F CN2A4TTE270J CN1J2TTD82R5F CN1J4TTD511J CN2A4TTE272J CN1J4TTD513J CN1J2TTD1333F CN2A4TTE161J CN1J8TTE331J CN2B4TTE121J CN1J8TTE332J CN1J8TTE330J CN1J8TTE334J CN2A4TTE201J CN1J4TTD822J CN1J4TTD821J CN1J4TTDD330J CN1J4TTD823J