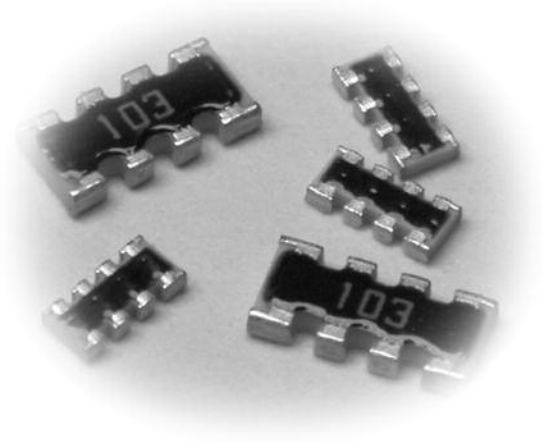
KOA SPEER ELECTRONICS, INC.

CN__KIN

convex termination with square corners resistor array

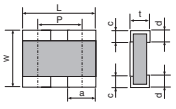


features

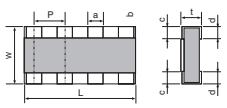
- Manufactured to type RK73 standards
- Less board space than individual chips
- Isolated resistor elements
- Convex terminations with square corners (CN_K)
- Flat termination with square corners (CN_N)
- Marking: Body color black
  1FN8K, 1H, 1E no marking
  1F8K: ±1%: white four-digit marking,
  ±5%: white three-digit marking
  1J white three-digit 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: CN1J4K only

dimensions and construction

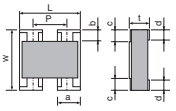
CN1H2N



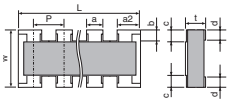
CN1H4N



CN1E2K, CN1J2K



CN1E4K, CN1J4K, CN1F8K, CN1FN8K



Size Code	Dimensions inches (mm) L	W	c	d	t	a	a 2	b	P
1H2N (0201x2)	.031±.004 (0.8±0.1)	.024±.004 (0.6±0.1)	.006±.004 (0.15±0.1)	.006±.004 (0.15±0.1)	.014±.004 (0.35±0.1)	.012±.004 (0.3±0.1)	—	—	.020 (0.5)
1H4N (0201x4)	.055±.004 (1.4±0.1)	.024±.003 (0.6±0.08)	.004±.003 (0.1±0.08)	.008±.003 (0.2±0.08)	.014±.004 (0.35±0.1)	.008±.004 (0.2±0.1)	—	—	.016 (0.4)
1E2K (0402x2)	.039±.004 (1.0±0.1)	.039±.004 (1.0±0.1)	.006±.004 (0.15±0.1)	.010±.004 (0.25±0.1)	.014±.004 (0.35±0.1)	.013±.004 (0.33±0.1)	—	.007±.002 (0.17±0.05)	.026 (0.67)
1E4K (0402x4)	.079±.004 (2.0±0.1)		.006±.004 (0.15±0.1)	.010±.008 (0.25±0.2)		.012±.006 (0.3±0.15)	.016±.006 (0.4±0.15)	.006±.004 (0.15±0.1)	.020 (0.5)
1J2K (0603x2)	.063±.006 (1.6±0.15)	.063±.006 (1.6±0.15)	.012±.008 (0.3±0.2)	.010±.004 (0.25±0.1)	.020±.004 (0.5±0.1)	.024±.006 (0.6±0.15)	—	.012±.004 (0.3±0.1)	0.031 (0.8)
1J4K (0603x4)	.126±.006 (3.2±0.15)					.020±.006 (0.5±0.15)	.026±.006 (0.65±0.15)		
1F8K 1FN8K (0602x8)	.149±.004 (3.8±0.1)	.063±.004 (1.6±0.1)	.012±.004 (0.3±0.1)	.012±.004 (0.3±0.1)	.018±.004 (0.45±0.1)	.012±.004 (0.30±0.1)	—	.006 (0.15)	.020 (0.5)

ordering information

New Part #

CN	1J	4	K	T	TD	101	J
Type	Size	Elements	Terminal Convex	Termination Material	Packaging	Nominal Resistance	Tolerance
	1H 1E 1J	2 4	K: Convex type with square corners N: Flat type with square corners	T: Sn (1E, 1J: Other termination styles may be available, please contact factory for options)	TD: 7" paper tape TDD: 10" paper tape	2 significant figures + 1 multiplier for ±5% 3 significant figures + 1 multiplier for ±1%	F: ±1% J: ±5%

New Part #

CN	1F	N	8	K	T	TD	101	J
Type	Size	Marking	Elements	Terminal Convex	Termination Material	Packaging	Nominal Resistance	Tolerance
		Blank: Marking N: No Marking		K: Convex type with square corners	T: Sn (Other termination styles may be available, please contact factory for options)	TD: 7" paper tape	2 significant figures + 1 multiplier for ±5% 3 significant figures + 1 multiplier for ±1%	F: ±1% J: ±5%

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

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

2/26/15

applications and ratings

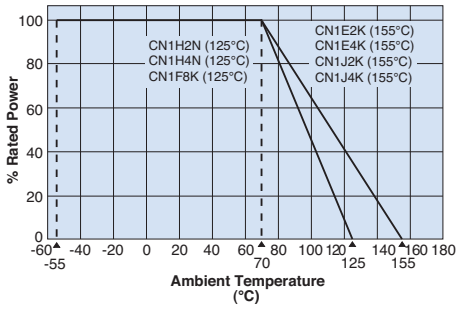
Part Designation	Power Rating @ 70°C (Per Element)	Resistance Range E-24, E-96 (F±1%)	Resistance Range E-24 (J±5%)	T.C.R. (ppm/°C) Max. E-24, E-96 (F±1%)	T.C.R. (ppm/°C) Max. E-24 (J±5%)	Absolute Maximum Working Voltage	Maximum Overload Voltage (5 Secs. Max.)	Rated Terminal Temperature	Operating Temperature Range
CN1H2N	1/32W (.031W)	—	10Ω - 1MΩ	—	±200:R>10Ω ±400:R<10Ω	12.5V	25V	—	-55°C to +125°C
CN1H4N									
CN1E2K	1/16W (.063W)	10Ω - 100kΩ		±200:R≥10Ω		25V	50V	+125°C	-55°C to +155°C
CN1E4K									
CN1J2K				±100:R≥10Ω		50V	100V		
CN1J4K			1Ω - 1MΩ						
CN1F8K	1/16W (.063W) 0.25W per package	10Ω - 100kΩ	10Ω - 1MΩ	±200:R≥10Ω		25V	50V	—	-55°C to +125°C
CN1FN8K									

Rated ambient temperature: +70°C

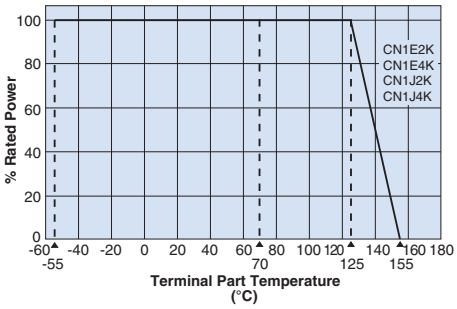
Note that network resistors generate higher heat rather than single flat chip resistor under rated power output

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.

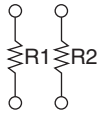


For resistors operated at a terminal part temperature of described for each size or above, a power rating shall be derated in accordance with the derating curve.

Please refer to "Introduction of the derating curve based on the terminal part temperature" on the beginning of our catalog before use.

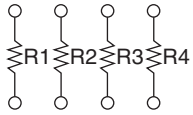
circuit schematic

CN1H2N, CN1E2K, CN1J2K



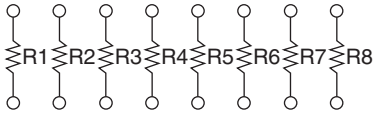
R1 = R2

CN1H4N, CN1E4K, CN1J4K



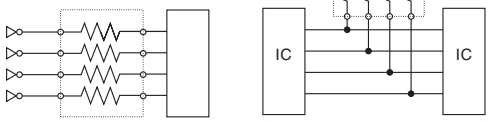
R1 = R2 = R3 = R4

CN1F8K, CN1FN8K



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

Circuit Board Application



Performance Characteristics

Parameter	Requirement Δ R Limit	Requirement Δ R Typical	Test Method
Resistance	Within regulated tolerance	—	25°C
T.C.R.	Within specified T.C.R.	—	+25°C/-55°C, +25°C/+125°C
Overload (Short time)	±2.0%	±0.25%	Rated voltage x 2.5 for 5 seconds
Resistance to Solder Heat	±1.0%	±0.75%	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%	±0.15%: CN1H2N, CN1H4N, CN1F8K ±0.25: All others	+125°C, 100 hours: CN1H2N, CN1H4N, CN1F8K +155°C, 100 hours: CN1E2K, CN1E4K, CN1J2K, CN1J4K

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KOA Speer:

CN1J4KLTD201J CN1E4KLTD472J CN1E4KLTD7R5J CN1E2KLTD430J CN1E4KLTD121J CN1E2KLTD161J CN1J4KLTD300J CN1E4KLTD331J CN1E4KLTD330J CN1E4KLTD333J CN1J4KLTD222J CN1J4KLTD221J CN1E2KLTD111J CN1E4KLTD510J CN1E2KLTD432J CN1E4KLTD201J CN1J4KLTD472J CN1F8KTTD105J CN1F8KTTD103J CN1J4KTTD681J CN1E4KTTD121J CN1J4KTTD472J CN1E4KTTD201J CN1E2KTTD123J CN1E2KTTD202J CN1E2KTTD201J CN1J4KTTD390J CN1E2KTTD240J CN1J4KTTD431J CN1E2KTTD161J CN1E4KTTD241J CN1E4KTTD240J CN1J4KTTD750J CN1J4KTTD510J CN1F8KTTD224J CN1E4KTTD560J CN1E2KTTD560J CN1E4KTTD620J CN1J4KTTD102J CN1J4KTTD104J CN1J4KTTD100J CN1J4KTTD103J CN1J4KTTD221J CN1J4KTTD222J CN1E4KTTD330J CN1E4KTTD333J CN1E4KTTD331J CN1E2KTTD333J CN1E2KTTD330J CN1E4KTTD272J CN1E4KTTD270J CN1E4KTTD150J CN1E4KTTD390J CN1E2KTTD390J CN1J4KLTD560J CN1E4KTTD474J CN1E4KTTD151J CN1F8KTTD560J CN1E2KTTD331J CN1E4KTTD1000F CN1E4KTTD152J CN1E4KTTD300J CN1E4KTTD332J CN1E4KTTD430J CN1E4KTTD511J CN1E4KTTD51R0F CN1F8KTTD121J CN1F8KTTD220J CN1F8KTTD510J CN1J4KTTD1000F CN1J4KTTD1002F CN1J4KTTD22R1F CN1J4KTTD274J CN1J4KTTD27R4F CN1J4KTTD333J CN1J4KTTD33R2F CN1J4KTTD471J CN1J4KTTD474J CN1J4KTTD56R2F CN1J4KTTD822J CN1J4KTTDD103J CN1J4KTTDD151J CN1J4KTTDD473J CN1J4KTTD2210F CN1J4KTTD4990F CN1J4KTTD430J CN1E2KLTD330J CN1E4KLTD680J CN1E4KLTD270J CN1E4KLTD272J CN1E2KLTD333J CN1E2KLTD472J CN1E2KLTD240J CN1J4KLTD510J CN1E4KLTD241J CN1E4KLTD240J CN1J4KLTD431J CN1E2KLTD181J CN1E2KLTD180J CN1E4KLTD104J