KOA SPEER ELECTRONICS, INC.

CN___K/N

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, 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

CN1E2K, CN1J2K

CN1E4K, CN1J4K, CN1F8K, CN1FN8K

Size Code	Dimensions inches (mm)								
	L	W	c	d	t	a	a 2	b	P
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**
	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.

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applications and ratings

Part Designation	Power Rating @ 70°C (Per Element)	Rated Ambient Temp.	Rated Terminal Temp.	Resistance Range E-24, E-96 (F±1%)	Resistance Range E-24 (J±5%)	T.C.R. (ppm/°C) Max. (F±1%)	T.C.R. (ppm/°C) Max. (J±5%)	Absolute Maximum Working Voltage	Maximum Overload Voltage (5 Secs. Max.)	Operating Temp Range
CN1E2K	1/16W (.063W)	+70°C	+125°C	10Ω - 100kΩ	10Ω - 1MΩ	±200:R≥10Ω	±200:R>10Ω ±400:R<10Ω	25V	50V	-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										

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

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 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

CN1E2K, CN1J2K

R1 = R2

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%: CN1F8K +0.25: All others	+125°C, 100 hours: CN1F8K +155°C, 100 hours: CN1E2K, CN1E4K, CN1J2K, CN1J4K

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