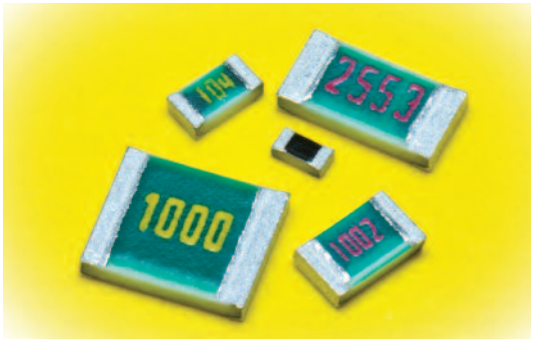
KOA SPEER ELECTRONICS, INC.

RN73

thin (metal) film flat chip resistors



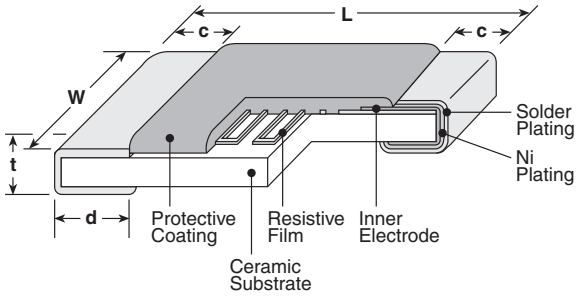
features

- Nickel chromium thin film resistor element
- Products with lead-free terminations meet EU RoHS requirements

EU RoHS COMPLIANT

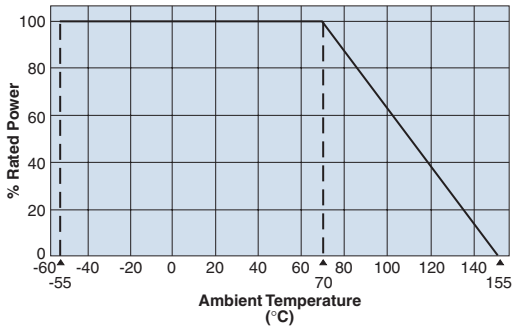
Not Recommended For New Design
Recommended For New Design Replacement RN73R

dimensions and construction

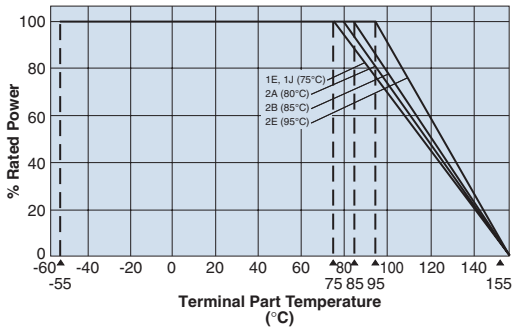


Type (Inch Size Code)	Dimensions inches (mm) L	W	c	d	t
RN73 1E (0402)	.039 +.004 -.002 (1.0 +0.1 -0.05)	.02±.002 (0.5±0.05)	.008±.004 (0.2±0.1)	.01 +.002 -.004 (0.25 +0.05 -0.1)	.014±.002 (0.35±0.05)
RN73 1J (0603)	.063±.008 (1.6±0.2)	.031±.004 (0.8±0.1)	.012±.004 (0.3±0.1)	.012±.004 (0.3±0.1)	.018±.004 (0.45±0.1)
RN73 2A (0805)	.079±.008 (2.0±0.2)	.049±.008 (1.25±0.2)	.016±.008 (0.4±0.2)	.012 +.008 -.004 (0.3 +0.2 -0.1)	.02±.004 (0.5±0.1)
RN73 2B (1206)	.126±.008 (3.2±0.2)	.063±.008 (1.6±0.2)	.02±.012 (0.5±0.3)	.016 +.008 -.004 (0.4 +0.2 -0.1)	.024±.004 (0.6±0.1)
RN73 2E (1210)		.098±.008 (2.5±0.2)			

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 terminal part temperature of described for each size or above, a power rating shall be derated in accordance with derating curve. Please refer to "Introduction of the derating curves based on the terminal part temperature" in the beginning of our catalog before use.

ordering information

RN73	2B	T	TE	1002	B	25
Type	Size	Termination Material	Packaging	Nominal Resistance	Tolerance	T.C.R. (ppm/°C)
	1E 1J 2A 2B 2E	T: Sn L: SnPb	TP: 0402: 7" 2mm pitch punch paper TD: 0603, 0805, 1206, 1210: 7" 4mm pitch punched paper TDD: 0603, 0805, 1206, 1210: 10" paper tape TE: 0805, 1206, 1210: 7" embossed plastic TED: 0805, 1206, 1210: 10" embossed plastic For further information on packaging, please refer to Appendix A	3 significant figures + 1 multiplier "R" indicates decimal on value <100Ω	A: ±0.05% B: ±0.1% C: ±0.25% D: ±0.5% F: ±1.0%	05 10 25 50 100

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

4/17/20

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Not Recommended For New Design
Recommended For New Design Replacement RN73R

applications and ratings

Part Designation	Power Rating[1] @ 70°C		Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (ppm/°C) Max.	Resistance Range (Ω) E-24, E-96, E-192*					Absolute Max. Working Voltage	Absolute Max. Overload Voltage
	General	High Power				(A±0.05%)	(B±0.1%)	(C±0.25%)	(D±0.5%)	(F±1.0%)		
RN731E	.063W	—	70°C	75°C	±25	—	100 - 100k	100 - 100k	10 - 120k	10 - 120k	50V	100V
					±50	—	100 - 100k	100 - 100k	10 - 120k	10 - 120k		
RN731J	.063W	.1W	70°C	75°C	±5	1K - 47k	100 - 47k	—	—	—	75V	150V
					±10	1K - 47k	100 - 47k	100 - 47k	100 - 47k	100 - 47k		
					±25	1K - 47k	15 - 360k	15 - 360k	10 - 360k	10 - 360k		
					±50	—	15 - 360k	15 - 360k	10 - 360k	10Ω - 360k		
					±100	—	—	—	10 - 360k	10 - 360k		
RN732A	.1W	.125W	70°C	80°C	±5	100 - 100k	100 - 100k	—	—	—	150V	300V
					±10	100 - 100k	100 - 100k	100 - 100k	100 - 100k	100 - 100k		
					±25	51 - 100k	15 - 1M	15 - 1M	10 - 1M	10 - 1M		
					±50	—	15 - 1M	15 - 1M	10 - 1M	10 - 1M		
					±100	—	—	—	10 - 1M	10 - 1M		
RN732B	.125W	.25W	70°C	85°C	±5	100 - 300k	100 - 300k	—	—	—	200V	400V
					±10	100 - 300k	100 - 300k	100 - 300k	100 - 300k	100 - 300k		
					±25	51 - 300k	15 - 1M	15 - 1M	10 - 1M	10 - 1M		
					±50	—	15 - 1M	15 - 1M	10 - 1M	10 - 1M		
					±100	—	—	—	10 - 1M	10 - 1M		
RN732E	.25W	—	70°C	95°C	±10	100 - 510k	100 - 510k	100 - 510k	100 - 510k	100 - 510k	200V	400V
					±25	51 - 510k	15 - 1M	15 - 1M	10 - 1M	10 - 1M		
					±50	—	15 - 1M	15 - 1M	10 - 1M	10 - 1M		
					±100	—	—	—	10 - 1M	10 - 1M		

* No marking on E-192 values Operating Temperature Range: -55°C to +155°C [1] Reliability performance is different. Please confirm the performance table.
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

Performance Characteristics

Parameter	Requirement Δ R ±(%+0.05Ω) Limit	Typical	Test Method
Resistance	Within specified tolerance	—	25°C
T.C.R.	Within specified T.C.R.	—	+25°C/+125°C: T.C.R. = ±5 (X10^{-6}/K) +25°C/-55°C and +25°C/+125°C: all others
Overload (Short time)	General: ±0.1%	±0.01%	Rated Voltage x 2.5 or Max. overload voltage, whichever is less for 5 seconds
	High Power: ±0.5%	±0.03%	
Resistance to Solder Heat	±0.1%	±0.04%	260°C ± 5°C, 10 seconds ± 1 second
Rapid Change of Temperature	±0.25%	±0.03%	-55°C (30 minutes), +125°C (30 minutes), 300 cycles
Moisture Resistance	General: ±0.5%	±0.06%	40°C ± 2°C, 90%-95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
	High Power: ±0.5%	±0.07%	
Endurance at 70°C	General: ±0.25%	±0.02%	70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
	High Power: ±0.5%	±0.1%	
High Temperature Exposure	±0.25%	±0.1%	+125°C, 1000 hours
	±0.5%	±0.25%	+155°C, 1000 hours

Precautions for Use

- The properly and electrostatically measured taping materials are used for the components, but attention should be paid to the fact that there is some danger the parts absorb on the top tapes to cause a failure in the mounting and the parts are destructed by static electricity (1kV and more: 1J, 2A, 2B, 2E 0.5kV and more: 1E, Human Body Model 100pF 1.5kΩ) to change the resistance in the conditions of an excessive dryness or after the parts are given vibration for a long time as they are packaged on the tapes. Similarly, care should be given not to apply the excessive static electricity when mounting on the boards.
- Ionic impurities such as flux etc. that are attached to these products or those mounted onto a PCB, negatively affect their moisture resistance, corrosion resistance, etc. The flux may contain ionic substances like chlorine, acid, etc. while perspiration and saliva include ionic impurities like sodium (Na), chlorine (Cl–) etc. Therefore these kinds of ionic substances may induce electrical corrosion when they invade into the products. Either thorough washing or using RMA solder and flux are necessary since lead free solder contains ionic substances. Washing process is needed, before putting on moisture proof material in order to prevent electrical corrosion.
- The upper electrodes could be peeled off when a heat-resistant masking tape is attached to the mounted chip resistors and then detached from them. It is confirmed that the adhesiveness gets stronger due to the exposure to heat under mounting. Accordingly, we recommend the use of masking tape be refrained. If the use of heat-resistant masking tape is unavoidable, please make sure that the adhesives on the tape do not directly come in contact with the product.
- When high-pressure shower cleaning is implemented, there is a possibility of exfoliation of the top electrodes caused by the water pressure stress so please avoid the implementation.
- If the implementation is unavoidable, then please evaluate the products beforehand.

For Surface Temperature Rise Graph see Environmental Applications. Additional environmental applications can also be found at www.koaspeer.com

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