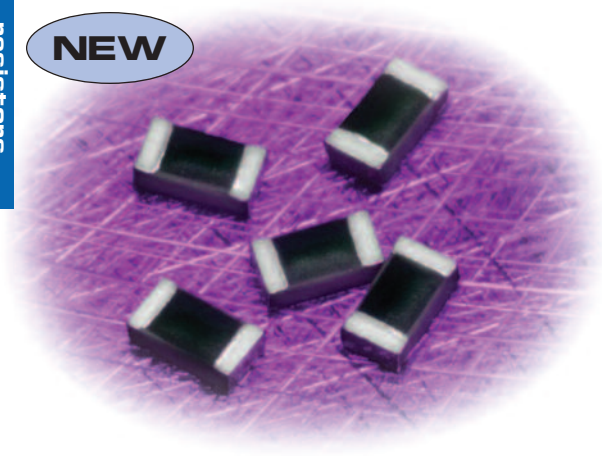
THE DATASHEET OF

RN73R2ATTD1002B10

KOA SPEER ELECTRONICS, INC.

RN73R

metal film flat chip resistors (high reliability)

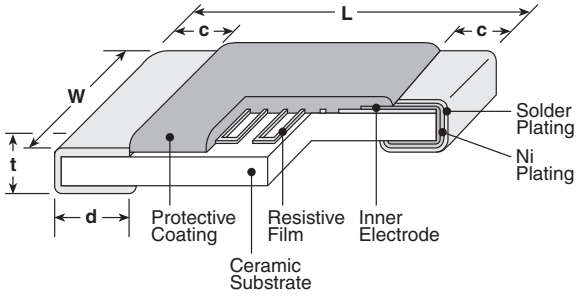


EU RoHS COMPLIANT

features

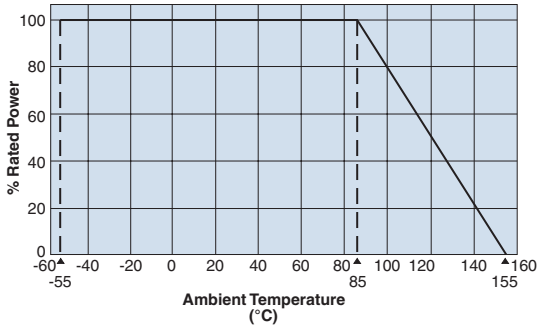
- SMD metal film resistors
- High precision type ±0.05% is also available as standard
- High performance T.C.R. ±5×10^{-6}/K is also available as standard
- Low current noise
- Improved moisture resistance by high humidity protective coating
- Suitable for control circuits in various industrial equipment
- Suitable for both flow and reflow solderings
- Products meet EU-RoHS requirements

dimensions and construction

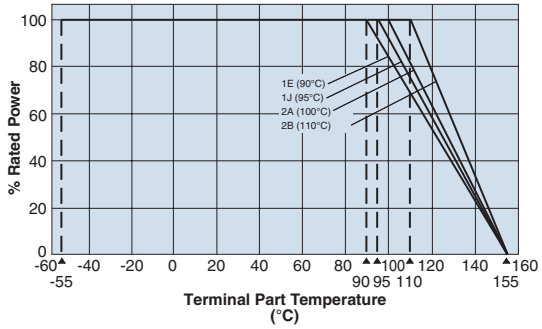


Type (Inch Size Code)	Dimensions inches (mm) L	W	c	d	t
1E (0402)	.039 $^{+.004}_{-.002}$ ($1.0^{+0.1}_{-0.05}$)	.020±.002 (0.5±0.05)	.010±.004 (0.25±0.1)	.010 $^{+.002}_{-.004}$ ($0.25^{+0.05}_{-0.1}$)	.014±.002 (0.35±0.05)
1J (0603)	.063±.008 (1.6±0.2)	.031±.004 (0.8±0.1)	.012±.004 (0.3±0.1)	.012±.004 (0.3±0.1)	.018±.004 (0.45±0.1)
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)
2B (1206)	.126±.063 (3.2±1.6)	.063±.008 (1.6±0.2)	.02±.012 (0.5±0.3)	.012 $^{+.008}_{-.004}$ ($0.3^{+0.2}_{-0.1}$)	.024±.004 (0.6±0.1)

Derating Curve



For resistors operated at an ambient temperature of 85°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 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

RN73R	2B	T	TD	1002	B	25
Type	Size	Termination Material	Packaging	Nominal Resistance	Resistance Tolerance	T.C.R. (ppm/°C)
	1E: 0.063W 1J: 0.1W 2A: 0.125W 2B: 0.25W	T: Sn	TP: 2mm pitch punched paper TD: 4mm pitch punched paper TE: 4mm pitch plastic embossed 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.

11/06/18

applications and ratings

Part Designation	Power Rating @ 85°C	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (x10⁻⁶/K)	Resistance Range (Ω) E-24, E-96, E-192 (A±0.05%)	(B±0.1%)	(C±0.25%)	(D±0.5%)	(F±1.0%)	Maximum Working Voltage	Maximum Overload Voltage
RN73R1E	1/16W (.063W)	85°C	90°C	±10	—	47 - 10k	47 - 10k	47 - 10k	47 - 10k	50V	100V
				±25	—	47 - 300k	47 - 300k	47 - 300k	47 - 300k		
				±50	—	47 - 300k	47 - 300k	10 - 300k	10 - 300k		
RN73R1J	1/10W (.10W)	85°C	95°C	±5	100 - 59k	100 - 59k	—	—	—	75V	150V
				±10	47 - 59k	47 - 59k	47 - 59k	47 - 59k	47 - 59k		
				±25	47 - 59k	15 - 1M	15 - 1M	10 - 1M	10 - 1M		
				±50	—	15 - 1M	15 - 1M	10 - 1M	10 - 1M		
				±100	—	—	—	10 - 1M	10 - 1M		
RN73R2A	1/8W (.125W)	85°C	100°C	±5	100 - 100k	100 - 100k	—	—	—	150V	300V
				±10	47 - 100k	47 - 100k	47 - 100k	47 - 100k	47 - 100k		
				±25	47 - 100k	15 - 1.5M	15 - 1.5M	10 - 1.5M	10 - 1.5M		
				±50	—	15 - 1.5M	15 - 1.5M	10 - 1.5M	10 - 1.5M		
				±100	—	—	—	10 - 1.5M	10 - 1.5M		
RN73R2B	1/4W (.25W)	85°C	110°C	±5	100 - 110k	100 - 110k	—	—	—	200V	400V
				±10	47 - 110k	47 - 110k	47 - 110k	47 - 110k	47 - 110k		
				±25	47 - 110k	15 - 1M	15 - 1M	10 - 1M	10 - 1M		
				±50	—	15 - 1M	15 - 1M	10 - 1M	10 - 1M		
				±100	—	—	—	10 - 1M	10 - 1M		

Operating Temperature: -55°C to +155°C

Rated voltage = $\sqrt{\text{Power rating x resistance value}}$ or max. working voltage, whichever is lower

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/+155°C: another
Overload (Short time)	±0.05%	±0.01%	Rated Voltage x 2.5 or Max. overload voltage, whichever is less for 5 seconds
Resistance to Solder Heat	±0.05%*	±0.01%	260°C ± 5°C, 10 seconds ± 1 second
Rapid Change of Temperature	±0.1%*	±0.04%	1E, 1J, 2A: -55°C (30 minutes), +155°C (30 minutes), 1000 cycles 2B: -55°C (30 minutes), +155°C (30 minutes), 500 cycles
Moisture Resistance	±0.25%	±0.07%	85°C ± 2°C, 85%±5%RH, 1000 hours; 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 85°C	±0.1%	±0.04%	85°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
High Temperature Exposure	±0.25%	±0.10%	+155°C, 1000 hours

* Depends on resistance value, please contact KOA Speer for details.

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 (1J, 2A, 2B: 1kV and more, 1E: 0.5kV and more at 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.
- When heat-resistant masking tapes are attached to the chip resistors at the time of mounting and then detached, there is a possibility of exfoliation of the top electrodes. It is known that the heat applied in the mounting process will enhance the adhesion strength of the tape adhesive so please avoid the use. If the use of masking tapes are unavoidable, then please be sure not to attach the tape adhesives directly on the products.
  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

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use. 10/23/18

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- View RN73R2ATTD1002B10 on WIN SOURCE
- KOA Speer Information

Optimize Your Supply Chain with WIN SOURCE Solutions

- Global Sourcing Solution
- Obsolete Management
- Cost Control Management
- Shortage Management
- Alternative Solution
- Excess Inventory Management