KOA SPEER ELECTRONICS, INC.

End of Life – last time to buy 2/28/23

RD412A/2D

fixed carbon film melf resistor

RD412A/RD412D
Recommended Replacement
SG73_2A Series, RD412ES, SG73_2B Series

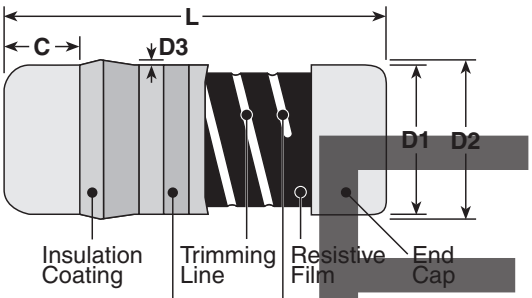
EU RoHS COMPLIANT

resistors

features

- Suitable for reflow and wave soldering
- Metal plate terminals
- Meets or exceeds IEC 60115-8, EIAJ RC-2131A
- Products with lead-free terminations meet EU RoHS and China RoHS requirements

dimensions and construction



Type (Inch/DIN Size Code)	Dimensions inches (mm) L	C	D1	D2 (max.)	D3 (max.)
2A (0805/0102)	.079±.004 (2.0±0.1)	.012 (0.3 min.)	.049±.002 (1.25±0.05)	.053 (1.35)	.003 (0.07)
2D (1206/0203)	.126±.008 (3.2±0.2)	.02 (0.5 min.)	.061±.006 (1.55±0.15)	.069 (1.75)	.004 (0.1)

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ordering information

RD41	2ES	T	TE	103	J
Type	Size	Termination Material	Packaging	Nominal Resistance	Tolerance
	2A 2D	T: Sn	TE: 7" embossed plastic (2A - 3,000 pieces/reel) (2D - 2,000 pieces/reel)	2 significant figures + 1 multiplier. "R" indicates decimal on value <10Ω	G: ±2% J: ±5%

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

7/15/22

applications and ratings

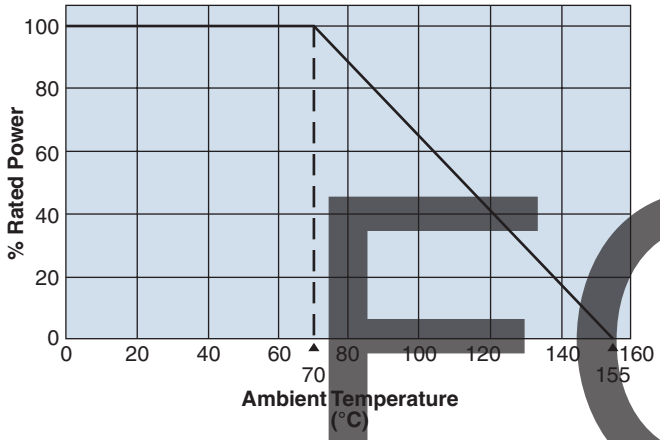
Part Designation	Power Rating @ 70°C	Resistance Range E-24 ( )	T.C.R. (x10^{-6}/K)				Resistance Tolerance	Absolute Maximum Working Voltage	Absolute Maximum Overload Voltage	Rated Ambient Temperature
			+350 – -450	0 – -700	0 – -1000	0 – -1300				
RD412A	0.125W	2.2 - 1.0M	2.2 - 47k	51k - 220k	240k - 470k	510k - 1.0M	G: ±2% J: ±5%	150V	200V	+70°C
RD412D	0.2W	1.0 - 1.0M	1.0 - 47k	51k - 220k	240k - 470k	510k - 1.0M		200V	400V	

* 1 – 2Ω: +650 – 0 x 10^{-6}/K 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

Derating Curve



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

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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/-55°C, +25°C/+125°C
Overload (Short time)	±1.0%	±0.5%	Rated voltage x 2.5 for 5 seconds
Intermittent Overload	±1.0%	—	Rated voltage x 4 (2Ax3) or Max. intermittent overload voltage, whichever is lower, 10,000 cycles. Max. intermittent overload voltage: 2A: 300V, 2ES: 400V, 2D: 500V, 2E: 600V
Resistance to Solder Heat	±1.0%	±0.5%	260°C ± 5°C, 10 seconds ± 1 second
Rapid Change of Temperature	±1.0%	±0.75%	-55°C (30 minutes), +125°C (30 minutes), 5 cycles
Moisture Resistance	±5.0%	±2.5%	40°C ± 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 70°C	±2.0%	±1.0%	70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Low Temperature Exposure	±1.0%	±0.75%	-55°C, 1 hour
High Temperature Exposure	±2.0%	±1.0%	+155°C, 2 hours