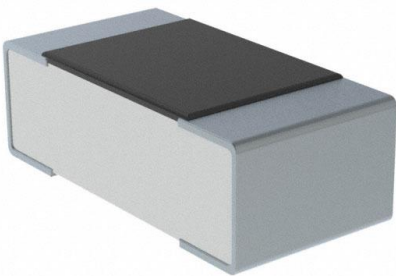


SR731JTTD2R43F Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	SR731JTTD2R43F-DG
Manufacturer	KOA Speer Electronics, Inc.
Manufacturer Product Number	SR731JTTD2R43F
Description	CURRENT SENSE RESISTOR
Detailed Description	2.43 Ohms \pm 1% 0.2W, 1/5W Chip Resistor 0603 (1608 Metric) Automotive AEC-Q200, Current Sense, Moisture Resistant Thick Film

This model SR731JTTD2R43F is available at DiGi Electronics.

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Purchase and inquiry

Manufacturer Product Number:

SR731JTTD2R43F

Series:

SR73

Resistance:

2.43 Ohms

Power (Watts):

0.2W, 1/5W

Features:

Automotive AEC-Q200, Current Sense, Moisture Resistant

Operating Temperature:

-55°C ~ 150°C

Supplier Device Package:

0603

Size / Dimension:

0.063" L x 0.031" W (1.60mm x 0.80mm)

Number of Terminations:

2

Base Product Number:

SR731J

Manufacturer:

KOA Speer Electronics, Inc.

Product Status:

Active

Tolerance:

±1%

Composition:

Thick Film

Temperature Coefficient:

±200ppm/°C

Package / Case:

0603 (1608 Metric)

Ratings:

AEC-Q200

Height - Seated (Max):

0.022" (0.55mm)

Failure Rate:

-

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8533.21.0030

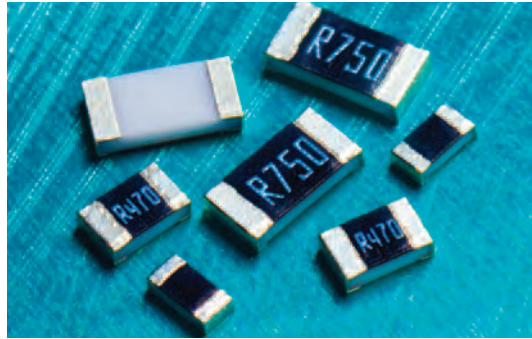
Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

10-ohm 0.5%, 1%, 2%, 5% tolerance thick film current sense resistor

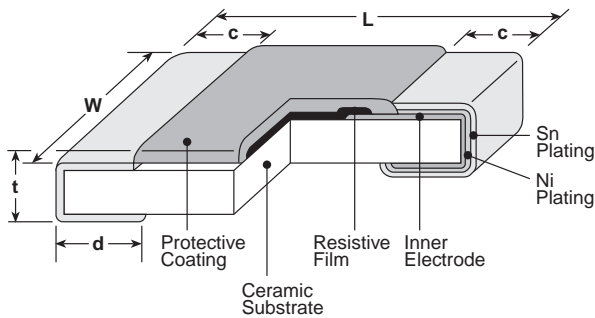


features

- Current detecting resistors for power supply, motor circuits, etc.
- High reliability and performance with resistance tolerance $\pm 0.5\%$, T.C.R. $\pm 100 \times 10^{-6} / K$
- Suitable for both reflow and flow solderings
- 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 Tested: 0402 (1E), 0603 (1J), 0805 (2A), 1206 (2B), 1210 (2E), 2010 (2H/W2H), 2512 (3A/W3A)



dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm)				
	L	W	c	d	t
1H (0201)	.024 \pm .001 (0.6 \pm 0.03)	.012 \pm .001 (0.3 \pm 0.03)	.004 \pm .002 (0.1 \pm 0.05)	.006 \pm .002 (0.15 \pm 0.05)	.009 \pm .001 (0.23 \pm 0.03)
1E (0402)	.039 $\begin{smallmatrix} +.004 \\ -.002 \end{smallmatrix}$ (1.0 $\begin{smallmatrix} +0.1 \\ -0.05 \end{smallmatrix}$)	.02 $\begin{smallmatrix} +.004 \\ -.002 \end{smallmatrix}$ (0.5 $\begin{smallmatrix} +0.1 \\ -0.05 \end{smallmatrix}$)	.01 \pm .004 (0.25 \pm 0.1)	.01 \pm .004 (0.25 \pm 0.1)	.014 \pm .002 (0.35 \pm 0.05)
1J (0603)	.063 \pm .008 (1.6 \pm 0.2)	.031 $\begin{smallmatrix} +.006 \\ -.004 \end{smallmatrix}$ (0.8 $\begin{smallmatrix} +0.15 \\ -0.1 \end{smallmatrix}$)	.014 \pm .004 (0.35 \pm 0.1)	.014 \pm .004 (0.35 \pm 0.1)	.018 \pm .004 (0.45 \pm 0.1)
2A (0805)	.079 \pm .008 (2.0 \pm 0.2)	.049 \pm .004 (1.25 \pm 0.1)	.016 \pm .008 (0.4 \pm 0.2)	.012 $\begin{smallmatrix} +.008 \\ -.004 \end{smallmatrix}$ (0.3 $\begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$)	.02 \pm .004 (0.5 \pm 0.1)
2B (1206)	.126 \pm .008 (3.2 \pm 0.2)	.063 \pm .008 (1.6 \pm 0.2)	.02 \pm .012 (0.5 \pm 0.3)	.016 $\begin{smallmatrix} +.008 \\ -.004 \end{smallmatrix}$ (0.4 $\begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$)	.024 \pm .004 (0.6 \pm 0.1)
2E (1210)		.102 \pm .008 (2.6 \pm 0.2)			
2H (2010)	.197 \pm .008 (5.0 \pm 0.2)	.098 \pm .008 (2.5 \pm 0.2)			
W2H (2010)				.026 \pm .006 (0.65 \pm 0.15)	
3A (2512)	.248 \pm .008 (6.3 \pm 0.2)	.122 \pm .008 (3.1 \pm 0.2)		.016 $\begin{smallmatrix} +.008 \\ -.004 \end{smallmatrix}$ (0.4 $\begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$)	
W3A (2512)				.026 \pm .006 (0.65 \pm 0.15)	

ordering information

SR73	2B	T	TD	1R00	F
Type	Size	Termination Material	Packaging	Nominal Resistance	Tolerance
1H 1E 1J 2A 2B 2E 2H W2H 3A W3A		T: Sn G: Au ² (L: Sn/Pb) ³	TCM: 2mm pitch press paper ⁴ TPL - TP: 2mm pitch punch paper TD: 4mm pitch punch paper TE: 4mm pitch plastic embossed For further information on packaging, please refer to Appendix A	$\pm 2\%$, $\pm 5\%$: 2 significant figures + 1 multiplier "R" indicates decimal on value <10 Ω $\pm 1\%$: 3 significant figures + 1 multiplier "R" indicates decimal on value <100 Ω All values less than 0.1 Ω (100m Ω) are expressed in m Ω with "L" as decimal Example: 20m Ω = 20L (3-digit)	D: $\pm 0.5\%$ F: $\pm 1\%$ G: $\pm 2\%$ J: $\pm 5\%$
		² Products with gold plated electrodes are also available only 1J, 2A and 2B type (0.1 Ω ~10 Ω , F: $\pm 1\%$, J: $\pm 5\%$), so please consult with us.			
		³ With type 1H, W2H and W3A, W3A2 only T is available as the terminal surface material.			
		⁴ Standard taping specification of 1H is TCM. Previously available. "TC (10,000pcs/Reel)" is not recommended for new designs.			



10-ohm 0.5%, 1%, 2%, 5% tolerance thick film current sense resistor

applications and ratings

current sense

Part Designation	Power Rating	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (ppm/°C) Max.	Resistance Range				
					E-24, E-96 (D±0.5%)	E-24, E-96 (F±1%)	E-24 (G±2%)	E-24 (J±5%)	
SR731H (0201)	0.1W	70°C	—	0 ~ +400	—	1Ω - 10Ω*	—	0.27Ω - 10Ω	
				0 ~ +500	—	—	—	0.18Ω - 0.24Ω	
SR731E (0402)	0.166W	70°C	125°C	±200	—	0.51Ω - 10Ω*	0.51Ω - 10Ω	0.51Ω - 10Ω	
				±300	—	0.2Ω - 0.47Ω*	0.2Ω - 0.47Ω	0.2Ω - 0.47Ω	
				±500	—	0.1Ω - 0.18Ω*	0.1Ω - 0.18Ω	0.1Ω - 0.18Ω	
SR731J (0603)	0.2W	70°C	125°C	±200	—	1.02Ω - 10Ω	1.1Ω - 10Ω	1.1Ω - 10Ω	
	0.25W	70°C	125°C	±200	—	0.1Ω - 1Ω	0.1Ω - 1Ω	0.1Ω - 1Ω	
SR732A (0805)	0.33W	70°C	125°C	±100	0.15Ω - 10Ω	0.1Ω - 10Ω	—	—	
				±200	—	—	0.1Ω - 10Ω	0.1Ω - 10Ω	
				±500	—	—	—	0.051Ω - 0.091Ω	
	0.5W ¹	70°C	105°C	±800	—	—	—	0.030Ω - 0.047Ω	
				±100	0.15Ω - 10Ω	0.1Ω - 10Ω	—	—	
				±200	—	—	0.1Ω - 10Ω	0.1Ω - 10Ω	
SR732B (1206)	0.33W	70°C	125°C	±500	—	—	—	0.051Ω - 0.091Ω	
				±800	—	—	—	0.030Ω - 0.051Ω	
				±100	0.15Ω - 10Ω	0.1Ω - 10Ω	—	—	
	0.5W ¹	70°C	110°C	±200	—	—	0.1Ω - 10Ω	0.1Ω - 10Ω	
				±500	—	—	—	0.056Ω - 0.091Ω	
				±800	—	—	—	0.030Ω - 0.051Ω	
SR732E (1210)	0.5W	70°C	125°C	±100	—	0.1Ω - 10Ω	—	—	
				±200	—	—	0.1Ω - 10Ω	0.047Ω - 10Ω	
				±500	—	—	—	0.036Ω - 0.043Ω	
	0.66W ¹	70°C	110°C	±1000	—	—	—	0.024Ω - 0.033Ω	
				±100	—	0.1Ω - 10Ω	—	—	
				±200	—	—	0.1Ω - 10Ω	0.047Ω - 10Ω	
SR732H/W2H (2010)	0.75W	70°C	125°C	±500	—	—	—	0.036Ω - 0.043Ω	
				±800	—	—	—	0.024Ω - 0.033Ω	
				±100	—	0.1Ω - 10Ω	—	—	
	SR733A/W3A (2512)	1W	70°C	125°C	±200	—	—	0.1Ω - 10Ω	0.1Ω - 10Ω
					±500	—	—	—	0.056Ω - 0.091Ω
					±800	—	—	—	0.030Ω - 0.051Ω

* 1H, 1E (F: ±1%) E-24 values only.

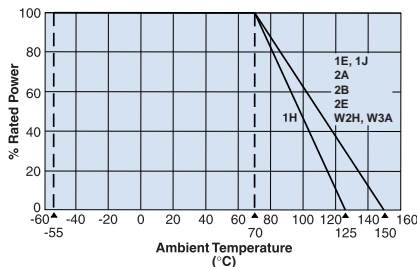
Operating Temp: -55°C to +125°C (SR731H only), -55°C to +150°C

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.

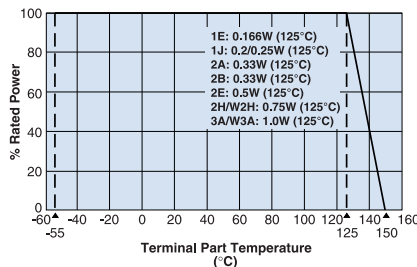
¹ Prior to use, refer to the "Higher Power Ratings" in the beginning of catalog. Rated voltage = $\sqrt{\text{Power rating} \times \text{resistance value}}$ or max. working voltage, whichever is lower

environmental applications

Derating Curve



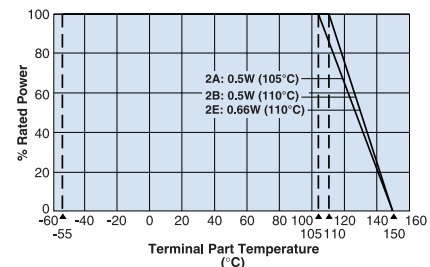
For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the derating curve.



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.

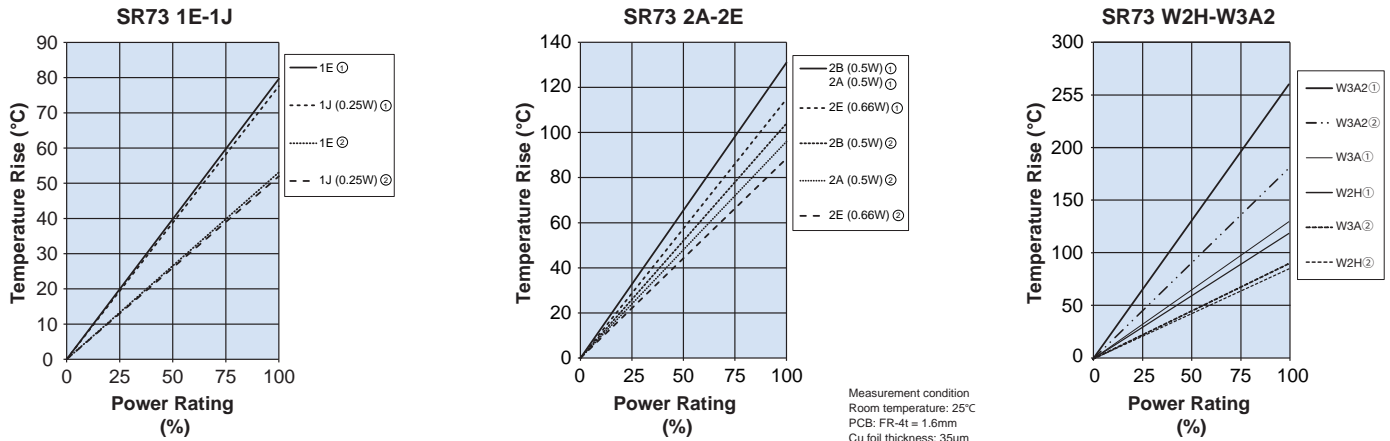
SR73 2A (0.5W), SR73 2B (0.5W), SR73 2E (0.66W)





10-ohm 0.5%, 1%, 2%, 5% tolerance thick film current sense resistor

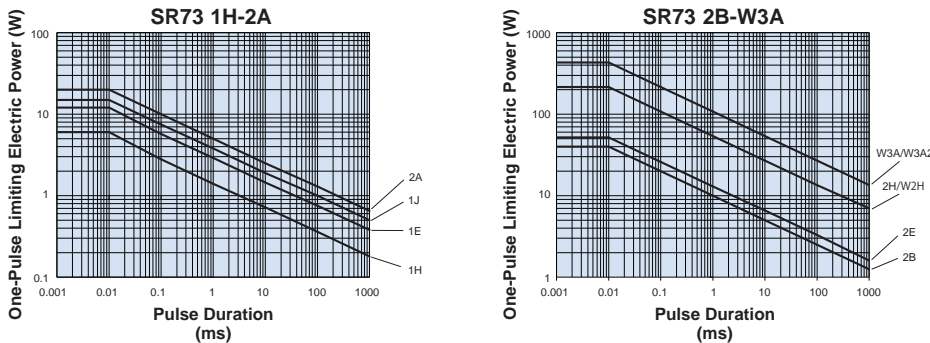
Temperature Rise



Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions.

current sense

One-Pulse Limiting Electric Power



Please ask us about the resistance characteristic of continuous applied pulse. The pulse endurance values are not assured values, so be sure to check the products on actual equipment when you use them.

Performance Characteristics

Parameter	Requirement $\Delta R \pm(\%+0.005\Omega)$		Test Method
	Limit	Typical	
Resistance	Within specified tolerance	—	25°C
T.C.R.	Within specified T.C.R.	—	+25°C/-55°C and +25°C/+125°C
Overload (Short time)	±2%	±0.5%	Rated voltage x 2.5 for 5 seconds
Resistance to Solder Heat	1H: ±3%, 1E~W3A: ±1%	1H: ±0.75% 1E~W3A: ±0.3%	260°C ± 5°C, 10 seconds ± 1 second
Rapid Change of Temperature	±1%	±0.3%	-40°C (30 minutes) / +125°C (30 minutes), 100 cycles
Moisture Resistance	1H: ±3% 1E~W3A: ±2%	±1%	40°C ± 2°C, 90%-95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 70°C	1H: ±3% 1E~W3A: ±2%	±1%	70°C ± 2°C or rated terminal part temperature ±2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
High Temperature Exposure	±1%	±0.3%	1H: +125°C, 1000 hours; 1E, 1J, 2A, 2B, 2E, 2H/W2H, 3A/W3A: +150°C, 1000 hours

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