

Anti-Sulfurated Thick Film Chip Resistors

ERJ S : 0402, 0603, 0805, 1206, 1210,
1812, 2010, 2512

ERJ S6 : 0805

ERJ U : 0201, 0402, 0603, 0805, 1206,
1210, 1812, 2010, 2512

Type: ERJ S02, S03, S06, S08, S14
S12, S1D, S1T (Au-based inner electrode type)

Type: ERJ S6S, S6Q (Ag-Pd-based inner electrode type)

Type: ERJ U01, U02, U03, U06, U08, U14,
U12, U1D, U1T (Ag-Pd-based inner electrode type)

■ Features

- High resistance to sulfurization achieved by adopting an Au-based inner electrode (ERJS0/S1 type) and Ag-Pd-based inner electrode (ERJS6, ERJU type)
- High reliability
Metal glaze thick film resistive element and three layers of electrodes
- Suitable for both reflow and flow soldering
- Low Resistance type...ERJS6S, S6Q : 0.1 Ω to 1.0 Ω
- Reference Standard...IEC 60115-8, JIS C 5201-8, EIAJ RC-2134B
- AEC-Q200 qualified (Exemption ERJU01)
- RoHS compliant

■ Packaging Methods, Land Pattern, Soldering Conditions and Safety Precautions

Please see Data Files

■ Explanation of Part Numbers

- ERJS0, S1, U0, U1 Series

1	2	3	4	5	6	7	8	9	10	11	12
E	R	J	S	0	6	F	1	0	0	2	V

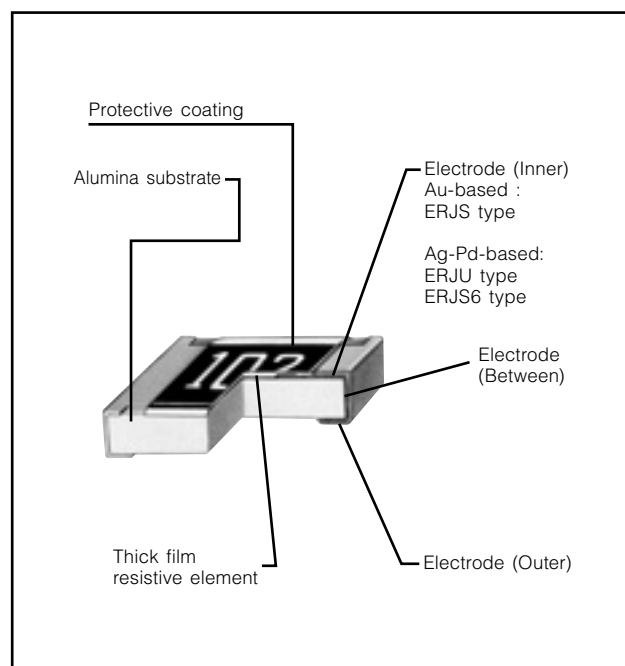
Product Code Thick Film Chip Resistors				Resistance Tolerance				Packaging Methods			
Size, Power Rating				Code				Code			
Type: inch	Power R.	Type: inch	Power R.	Code	Tolerance			Code	Packaging	Type	
U01 : 0201	0.05 W	S14 : 1210	0.5 W	F	$\pm 1\%$			C	Pressed Carrier Taping 2 mm pitch, 15,000 pcs.	ERJU01	
S02 : 0402	0.1 W	S12 : 1812	0.75 W	J	$\pm 5\%$			X	Punched Carrier Taping 2 mm pitch, 10,000 pcs.	ERJS02, ERJU02	
S03 : 0603	0.1 W	S1D : 2010	0.75 W	0	Jumper			V	Punched Carrier Taping 4 mm pitch, 5,000 pcs.	ERJS03, ERJU03 ERJS06, ERJU06 ERJS08, ERJU08	
S06 : 0805	0.125 W	S1T : 2512	1 W	Resistance Value				U	Embossed Carrier Taping 4 mm pitch, 5,000 pcs.	ERJS14, ERJU14 ERJS12, ERJU12 ERJS1D, ERJU1D	
S08 : 1206	0.25 W			The first two or three digits are significant figures of resistance and the third or 4th one denotes number of zeros following. Jumper is expressed by R00. Three digit type ($\pm 5\%$), four digit type ($\pm 1\%$) Example: 222 $\rightarrow$ 2.2 k Ω , 1002 $\rightarrow$ 10 k Ω					Embossed Carrier Taping 4 mm pitch, 4,000 pcs.	ERJS1T, ERJU1T	

- ERJS6S, S6Q Series

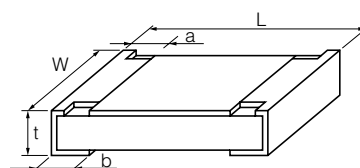
1	2	3	4	5	6	7	8	9	10	11
E	R	J	S	6	S	J	R	2	0	V

Size, Power Rating		Resistance Value		Resistance Tolerance		Resistance Value		Packaging Methods		
Type: inch	Power R.	Code	Res. Value	Code	Tolerance	Shown by 3 digits or letters. (Example) R20 : 0.20 Ω =200 m Ω 1R0 : 1.00 Ω =1000 m Ω		Code	Packaging	Type
S6: 0805	0.25 W	S	0.1 Ω to 0.2 Ω	F	$\pm 1\%$			V	Punched Carrier Taping 4 mm pitch, 5,000 pcs.	ERJS6
		Q	0.22 Ω to 1 Ω	G	$\pm 2\%$					
				J	$\pm 5\%$					

■ Construction



■ Dimensions in mm (not to scale)



Type (inch size)	Dimensions (mm)					Mass (Weight) [g/1000 pcs.]
	L	W	a	b	t	
ERJU01 (0201)	0.60 $\pm$ 0.03	0.30 $\pm$ 0.03	0.10 $\pm$ 0.05	0.15 $\pm$ 0.05	0.23 $\pm$ 0.03	0.15
ERJS02 ERJU02 (0402)	1.00 $\pm$ 0.05	0.50 $\pm$ 0.05	0.20 $\pm$ 0.10	0.25 $\pm$ 0.10	0.35 $\pm$ 0.05	0.8
ERJS03 ERJU03 (0603)	1.60 $\pm$ 0.15	0.80 $\pm$ 0.15	0.30 $\pm$ 0.20	0.30 $\pm$ 0.15	0.45 $\pm$ 0.10	2
ERJS06 ERJU06 (0805)	2.00 $\pm$ 0.20	1.25 $\pm$ 0.10	0.40 $\pm$ 0.20	0.40 $\pm$ 0.20	0.60 $\pm$ 0.10	4
ERJS6□ (0805)	2.00 $\pm$ 0.20	1.25 $\pm$ 0.10	0.45 $\pm$ 0.20	0.45 $\pm$ 0.20	0.55 $\pm$ 0.10	6
ERJS08 ERJU08 (1206)	3.20 $\pm$ 0.20	1.60 $\pm$ 0.15	0.50 $\pm$ 0.20	0.50 $\pm$ 0.20	0.60 $\pm$ 0.10	10
ERJS14 ERJU14 (1210)	3.20 $\pm$ 0.20	2.50 $\pm$ 0.20	0.50 $\pm$ 0.20	0.50 $\pm$ 0.20	0.60 $\pm$ 0.10	16
ERJS12 ERJU12 (1812)	4.50 $\pm$ 0.20	3.20 $\pm$ 0.20	0.50 $\pm$ 0.20	0.50 $\pm$ 0.20	0.60 $\pm$ 0.10	27
ERJS1D ERJU1D (2010)	5.00 $\pm$ 0.20	2.50 $\pm$ 0.20	0.60 $\pm$ 0.20	0.60 $\pm$ 0.20	0.60 $\pm$ 0.10	27
ERJS1T ERJU1T (2512)	6.40 $\pm$ 0.20	3.20 $\pm$ 0.20	0.65 $\pm$ 0.20	0.60 $\pm$ 0.20	0.60 $\pm$ 0.10	45

■ Ratings

Type (inch size)	Power Rating at 70 °C (W)	Limiting Element Voltage ⁽¹⁾ (V)	Maximum Overload Voltage ⁽²⁾ (V)	Resistance Tolerance (%)	Resistance Range (Ω)	T.C.R. (×10 ⁻⁶ /°C)	Category Temperature Range (°C)
ERJU01 (0201)	0.05	25	50	±1	10 to 1 M (E24, E96)	<10 Ω: -100 to +600	-55 to +125
ERJS02 ERJU02 (0402)	0.1	50	100	±5	1 to 1 M (E24)		-55 to +155
ERJS03 ERJU03 (0603)	0.1	75	150	±1	10 to 1 M (E24, E96)		-55 to +155
ERJS06 ERJU06 (0805)	0.125	150	200	±5	1 to 10 M (E24)		-55 to +155
ERJS08 ERJU08 (1206)	0.25	200	400	±1	10 to 1 M (E24, E96)	10 Ω to 1 MΩ: ±200(±5%)* ±100(±1%)*	-55 to +155
ERJS14 ERJU14 (1210)	0.5	200	400	±5	1 to 10 M (E24)		-55 to +155
ERJS12 ERJU12 (1812)	0.75	200	500	±1	10 to 1 M (E24, E96)		-55 to +155
ERJS1D ERJU1D (2010)	0.75	200	500	±5	1 to 10 M (E24)		-55 to +155
ERJS1T ERJU1T (2512)	1.0	200	500	±1	10 to 1 M (E24, E96)	1 MΩ<: -400 to +150	-55 to +155
				±5	1 to 10 M (E24)		-55 to +155

(1) Rated Continuous Working Voltage (RCWV) shall be determined from $RCWV = \sqrt{\text{Power Rating} \times \text{Resistance Values}}$, or Limiting Element Voltage listed above, whichever less.

(2) Overload (Short-time Overload) Test Voltage (SOTV) shall be determined from $SOTV = 2.5 \times \text{Power Rating}$ or max. Overload Voltage listed above whichever less.

<Low Resistance type>

Type (inch size)	Power Rating at 70 °C (W)	Resistance Tolerance (%)	Resistance Range (Ω)	T.C.R. (×10 ⁻⁶ /°C)	Category Temperature Range (°C)
ERJS6S (0805)	0.25	±1, ±2, ±5	0.1 to 0.2 (E24)	±150	-55 to +155
ERJS6Q (0805)			0.22 to 1 (E24)		

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.
Should a safety concern arise regarding this product, please be sure to contact us immediately.

<For Jumper>

Type (inch size)	Rated Current (A)	Maximum Overload Current (A)
ERJU01 (0201)	0.5	1
ERJS02 ERJU02 (0402)	1	2
ERJS03 ERJU03 (0603)		
ERJS06 ERJU06 ERJS6S/Q (0805)	2	4
ERJS08 ERJU08 (1206)		
ERJS14 ERJU14 (1210)		
ERJS12 ERJU12 (1812)		
ERJS1D ERJU1D (2012)		
ERJS1T ERJU1T (2512)		

Power Derating Curve

For resistors operated in ambient temperatures above 70 °C, power rating shall be derated in accordance with the figure below.

