

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
- 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

Size, Power Rating

Type: inch	Power R.	Type: inch	Power R.
U01 : 0201	0.05 W	S14 U14 : 1210	0.5 W
S02 U02 : 0402	0.1 W	S12 U12 : 1812	0.75 W
S03 U03 : 0603	0.1 W	S1D U1D : 2010	0.75 W
S06 U06 : 0805	0.125 W	S1T U1T : 2512	1 W
S08 U08 : 1206	0.25 W		

Resistance Tolerance

Code	Tolerance
F	± 1 %
J	± 5 %
0	Jumper

Resistance Value

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 (±5%), four digit type (±1%)
Example: 222→2.2 kΩ, 1002→10 kΩ

Packaging Methods

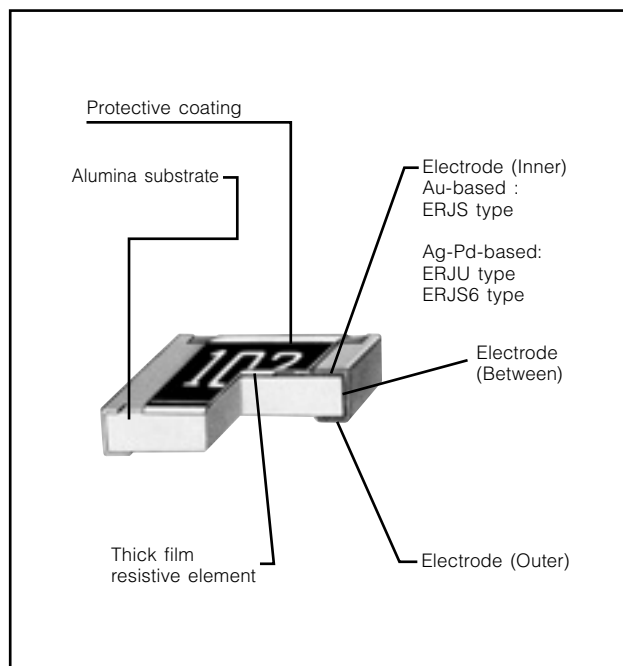
Code	Packaging	Type
C	Pressed Carrier Taping 2 mm pitch, 15,000 pcs.	ERJU01
X	Punched Carrier Taping 2 mm pitch, 10,000 pcs.	ERJS02, ERJU02
V	Punched Carrier Taping 4 mm pitch, 5,000 pcs.	ERJS03, ERJU03 ERJS06, ERJU06 ERJS08, ERJU08
U	Embossed Carrier Taping 4 mm pitch, 5,000 pcs.	ERJS14, ERJU14 ERJS12, ERJU12 ERJS1D, ERJU1D
	Embossed Carrier Taping 4 mm pitch, 4,000 pcs.	ERJS1T, ERJU1T

- ERJS6S, S6Q Series

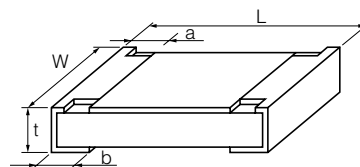
1	2	3	4	5	6	7	8	9	10	11
E	R	J	S	6	S	J	R	2	0	V

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 ±5	10 to 1 M (E24, E96) 1 to 1 M (E24)	<10 Ω: -100 to +600	-55 to +125
ERJS02 ERJU02 (0402)	0.1	50	100	±1 ±5	10 to 1 M (E24, E96) 1 to 3.3 M (E24)		-55 to +155
ERJS03 ERJU03 (0603)	0.1	75	150	±1 ±5	10 to 1 M (E24, E96) 1 to 10 M (E24)		-55 to +155
ERJS06 ERJU06 (0805)	0.125	150	200	±1 ±5	10 to 1 M (E24, E96) 1 to 10 M (E24)		-55 to +155
ERJS08 ERJU08 (1206)	0.25	200	400	±1 ±5	10 to 1 M (E24, E96) 1 to 10 M (E24)	10 Ω to 1 MΩ: ±200(±5%)* ±100(±1%)*	-55 to +155
ERJS14 ERJU14 (1210)	0.5	200	400	±1 ±5	10 to 1 M (E24, E96) 1 to 10 M (E24)	*ERJU01, ERJS02, ERJU02 : ±200	-55 to +155
ERJS12 ERJU12 (1812)	0.75	200	500	±1 ±5	10 to 1 M (E24, E96) 1 to 10 M (E24)	1 MΩ<: -400 to +150	-55 to +155
ERJS1D ERJU1D (2010)	0.75	200	500	±1 ±5	10 to 1 M (E24, E96) 1 to 10 M (E24)		-55 to +155
ERJS1T ERJU1T (2512)	1.0	200	500	±1 ±5	10 to 1 M (E24, E96) 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.

04 Aug. 2012

<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.

