

Anti-Sulfurated Thick Film Chip Resistors



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

Type: **ERJ U01, U02, U03, U06, U08, U14, U12, U1D, U1T, U6S, U6Q**
(Ag-Pd-based inner electrode type)

Features

- High resistance to sulfurization achieved by adopting an Au-based inner electrode (ERJS type) and Ag-Pd-based inner electrode (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...ERJU6S, U6Q : 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

■ **As for Packaging Methods, Land Pattern, Soldering Conditions and Safety Precautions,**
Please see Data Files

Explanation of Part Numbers

- ERJS0, S1, U0, U1 Type

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					
Code	Inch	Power R.	Code	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	Part No.
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

- ERJU6S, U6Q Type

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

Size, Power Rating

Code	Inch	Power R.
U6	0805	0.25 W

Resistance Value

Code	Res. Value
S	0.1 Ω to 0.2 Ω
Q	0.22 Ω to 1 Ω

Resistance Tolerance

Code	Tolerance
F	±1 %
G	±2 %
J	±5 %

Resistance Value

Shown by 3 digits or letters.
(Example)
R20 : 0.20 Ω=200 mΩ
1R0 : 1.00 Ω=1000 mΩ

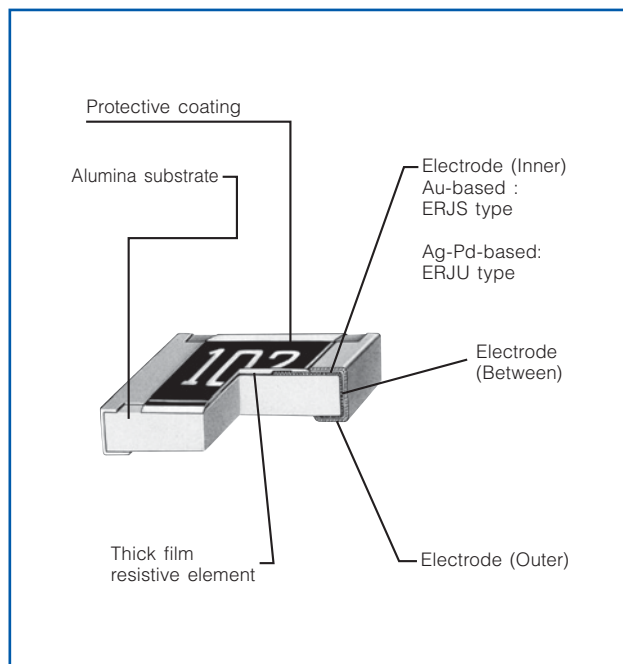
Packaging Methods

Code	Packaging	Part No.
V	Punched Carrier Taping 4 mm pitch, 5,000 pcs.	ERJU6S ERJU6C

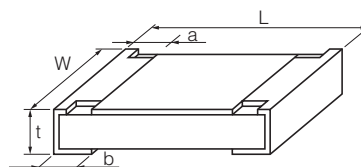
Product Code

Thick Film Chip Resistors

Construction



Dimensions in mm (not to scale)



Part No. (inch size)	Dimensions (mm)					Mass (Weight) [g/1000 pcs.]
	L	W	a	b	t	
ERJU01 (0201)	0.60 ^{+0.03}	0.30 ^{+0.03}	0.10 ^{+0.05}	0.15 ^{+0.05}	0.23 ^{+0.03}	0.15
ERJS02 ERJU02 (0402)	1.00 ^{+0.05}	0.50 ^{+0.05}	0.20 ^{+0.10}	0.25 ^{+0.10}	0.35 ^{+0.05}	0.8
ERJS03 ERJU03 (0603)	1.60 ^{+0.15}	0.80 ^{+0.15}	0.30 ^{+0.20}	0.30 ^{+0.15}	0.45 ^{+0.10}	2
ERJS06 ERJU06 (0805)	2.00 ^{+0.20}	1.25 ^{+0.10}	0.40 ^{+0.20}	0.40 ^{+0.20}	0.60 ^{+0.10}	4
ERJU6□ (0805)	2.00 ^{+0.20}	1.25 ^{+0.10}	0.45 ^{+0.20}	0.45 ^{+0.20}	0.55 ^{+0.10}	6
ERJS08 ERJU08 (1206)	3.20 ^{+0.05}	1.60 ^{+0.05}	0.50 ^{+0.20}	0.50 ^{+0.20}	0.60 ^{+0.10}	10
ERJS14 ERJU14 (1210)	3.20 ^{+0.20}	2.50 ^{+0.20}	0.50 ^{+0.20}	0.50 ^{+0.20}	0.60 ^{+0.10}	16
ERJS12 ERJU12 (1812)	4.50 ^{+0.20}	3.20 ^{+0.20}	0.50 ^{+0.20}	0.50 ^{+0.20}	0.60 ^{+0.10}	27
ERJS1D ERJU1D (2010)	5.00 ^{+0.20}	2.50 ^{+0.20}	0.60 ^{+0.20}	0.60 ^{+0.20}	0.60 ^{+0.10}	27
ERJS1T ERJU1T (2512)	6.40 ^{+0.20}	3.20 ^{+0.20}	0.65 ^{+0.20}	0.60 ^{+0.20}	0.60 ^{+0.10}	45

Ratings

Part No. (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 $SOTV = 2.5 \times RCWV$ or max. Overload Voltage listed above whichever less.

[Low Resistance type]

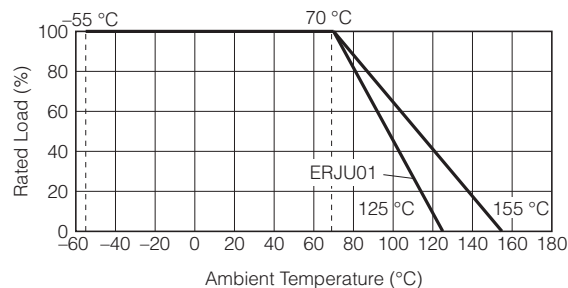
Part No. (inch size)	Power Rating at 70 °C (W)	Resistance Tolerance (%)	Resistance Range (Ω)	T.C.R. (×10 ⁻⁶ /°C)	Category Temperature Range (°C)
ERJU6S (0805)	0.25	±1, ±2, ±5	0.1 to 0.2 (E24)	±150	-55 to +155
ERJU6Q (0805)			0.22 to 1 (E24)		

[For Jumper]

Part No. (inch size)	Rated Current (A)	Maximum Overload Current (A)
ERJU01 (0201)	0.5	1
ERJS02 ERJU02 (0402)	1	2
ERJS03 ERJU03 (0603)		
ERJS06 ERJU06 (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.



Mouser Electronics

Authorized Distributor

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Panasonic:

ERJ-S02F12R0X	ERJ-S02F4300X	ERJ-S14F2210U	ERJ-S12F47R0U	ERJ-S14F2003U	ERJ-S14F2050U	ERJ-
S14F2051U	ERJ-S14F2052U	ERJ-S14F2053U	ERJ-S14F20R0U	ERJ-S14F20R5U	ERJ-S14F2100U	ERJ-
S14F2101U	ERJ-S14F2102U	ERJ-S14F2103U	ERJ-S14F2150U	ERJ-S14F2151U	ERJ-S14F2152U	ERJ-
S14F2153U	ERJ-S14F21R0U	ERJ-S14F21R5U	ERJ-S14F2200U	ERJ-S14F2201U	ERJ-S14F2202U	ERJ-
S14F2203U	ERJ-S14F2211U	ERJ-S14F2212U	ERJ-S14F2213U	ERJ-S14F2260U	ERJ-S14F2261U	ERJ-
S14F2262U	ERJ-S14F2263U	ERJ-S14F22R0U	ERJ-S14F22R1U	ERJ-S14F22R6U	ERJ-S14F2320U	ERJ-
S14F2321U	ERJ-S14F2322U	ERJ-S14F2323U	ERJ-S14F2370U	ERJ-S14F2371U	ERJ-S14F2372U	ERJ-
S14F2373U	ERJ-S14F23R2U	ERJ-S14F23R7U	ERJ-S14F2400U	ERJ-S14F2401U	ERJ-S14F2402U	ERJ-
S14F2403U	ERJ-S14F2430U	ERJ-S14F2431U	ERJ-S14F2432U	ERJ-S14F2433U	ERJ-S14F2490U	ERJ-
S14F2491U	ERJ-S14F2492U	ERJ-S14F2493U	ERJ-S14F24R0U	ERJ-S14F24R3U	ERJ-S14F24R9U	ERJ-
S14F2550U	ERJ-S14F2551U	ERJ-S14F2552U	ERJ-S14F2553U	ERJ-S14F25R5U	ERJ-S14F2610U	ERJ-
S14F2611U	ERJ-S14F2612U	ERJ-S14F2613U	ERJ-S14F2670U	ERJ-S14F2671U	ERJ-S14F2672U	ERJ-
S14F2673U	ERJ-S14F26R1U	ERJ-S14F26R7U	ERJ-S14F2700U	ERJ-S14F2701U	ERJ-S14F2702U	ERJ-
S14F2703U	ERJ-S14F2740U	ERJ-S14F2741U	ERJ-S14F2742U	ERJ-S14F2743U	ERJ-S14F27R0U	ERJ-
S14F27R4U	ERJ-S14F2800U	ERJ-S14F2801U	ERJ-S14F2802U	ERJ-S14F2803U	ERJ-S14F2870U	ERJ-
S14F2871U	ERJ-S14F2872U	ERJ-S14F2873U	ERJ-S14F28R0U	ERJ-S14F28R7U	ERJ-S14F2940U	ERJ-
S14F2941U	ERJ-S14F2942U	ERJ-S14F2943U	ERJ-S14F29R4U			