

Thick Film Chip Resistors 01005, 0201, 0402, 0603, 0805, 1206, 1210, 1812, 2010, 2512

Type: **ERJ XG, 1G, 2G, 3G, 6G, 8G,
14, 12, 12Z, 1T**



■ Features

- Small size and lightweight
- High reliability
Metal glaze thick film resistive element and three layers of electrodes
- Compatible with placement machines
Taping packaging available
- Suitable for both reflow and flow soldering
- Reference Standards
IEC 60115-8, JIS C 5201-8, EIAJ RC-2134B

- RoHS compliant

■ Packaging Methods Please see Pages 40 to 43

■ Recommended Land Pattern Please see Pages 44 to 45

■ Recommended Soldering Conditions Please see Page 46

■ Safety Precautions Please see Page 47

■ Explanation of Part Numbers

- ERJXGN, 1GN, 2GE, 3GE, 6GE, 8GE, 14, 12, 12Z, 1T Series, ±5 % type

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

Product Code	Size, Power Rating		Marking		Resistance Tolerance		Packaging Methods				
Thick Film Chip Resistors	Type : inch	Power R.	Code	Marking	Code	Tolerance	Code	Packaging	Type		
	XGN : 01005	0.031 W	Y	Value Marking on black side	J	±5 %	Y	Pressed Carrier Taping W8P2, 20,000 pcs.	ERJXGN		
	1GN : 0201	0.05 W		0	Jumper	U	Embossed Carrier Taping W4P1, 40,000 pcs.				
	2GE : 0402	0.1 W	Resistance Value The first two digits are significant figures of resistance and the third one denotes number of zeros following. Decimal Point is expressed by R as 4.7 = 4R7. Jumper is expressed by R00.						C	Pressed Carrier Taping 2 mm pitch, 15,000 pcs.	ERJ1GN
	3GE : 0603	0.1 W							X	Punched Carrier Taping 2 mm pitch, 10,000 pcs.	ERJ2GE
	6GE : 0805	0.125 W							Y	Punched Carrier Taping 2 mm pitch, 20,000 pcs.	
	8GE : 1206	0.25 W							V	Punched Carrier Taping 4 mm pitch, 5,000 pcs.	ERJ3GE ERJ6GE ERJ8GE
	14 : 1210	0.5 W							U	Embossed Carrier Taping 4 mm pitch, 5,000 pcs.	ERJ14 ERJ12 ERJ12Z
	12 : 1812	0.75 W								Embossed Carrier Taping 4 mm pitch, 4,000 pcs.	ERJ1T
	12Z : 2010	0.75 W									
	1T : 2512	1 W									

* When omitted, the rest of the P/N factors shall be moved up respectively.
(Only XGN, 1GN, 2GE type)

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Construction



Dimensions in mm (not to scale)



Type (inch size)	Dimensions (mm)					Mass (Weight) (g/1000 pcs.)
	L	W	a	b	t	
ERJXG (01005)	0.40 $\pm$ 0.02	0.20 $\pm$ 0.02	0.10 $\pm$ 0.03	0.10 $\pm$ 0.03	0.13 $\pm$ 0.02	0.04
ERJ1G (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
ERJ2G (0402)	1.00 $\pm$ 0.05	0.50 $\pm$ 0.05	0.20 $\pm$ 0.10	0.25 $\pm$ 0.05	0.35 $\pm$ 0.05	0.8
ERJ3G (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
ERJ6G (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
ERJ8G (1206)	3.20 $\pm$ 0.05	1.60 $\pm$ 0.05	0.50 $\pm$ 0.20	0.50 $\pm$ 0.20	0.60 $\pm$ 0.10	10
ERJ14 (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
ERJ12 (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
ERJ12Z (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
ERJ1T (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

<For Resistor>

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)
ERJXG (01005)	0.031	15	30	±5	4.7 to 1 M (E24)	<10 Ω : -100 to +600 10 Ω to 100 Ω : ±300 100 Ω < : ±200	-55 to +125
ERJ1G (0201)	0.05	25	50	±5	1 to 10 M (E24)	<10 Ω : -100 to +600	-55 to +125
ERJ2G (0402)	0.1	50	100	±5	1 to 10 M (E24)		-55 to +155
ERJ3G (0603)	0.1	75	150	±5	1 to 10 M (E24)		-55 to +155
ERJ6G (0805)	0.125	150	200	±5	1 to 10 M (E24)		-55 to +155
ERJ8G (1206)	0.25	200	400	±5	1 to 10 M (E24)		-55 to +155
ERJ14 (1210)	0.5	200	400	±5	1 to 10 M (E24)	10 Ω to 1 M Ω : ±200	-55 to +155
ERJ12 (1812)	0.75	200	500	±5	1 to 10 M (E24)		-55 to +155
ERJ12Z (2010)	0.75	200	500	±5	1 to 10 M (E24)		-55 to +155
ERJ1T (2512)	1	200	500	±5	1 to 1 M (E24)	1 M Ω < : -400 to +150	-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.

<For Jumper>

Type (inch size)	Rated Current (A)	Maximum Overload Current (A)
ERJXG (01005)	0.5	1
ERJ1G (0201)		
ERJ2G (0402)		
ERJ3G (0603)	1	2
ERJ6G (0805)		
ERJ8G (1206)	2	4
ERJ14 (1210)		
ERJ12 (1812)		
ERJ12Z (2010)		
ERJ1T (2512)		

Power Derating Curve

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

