

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

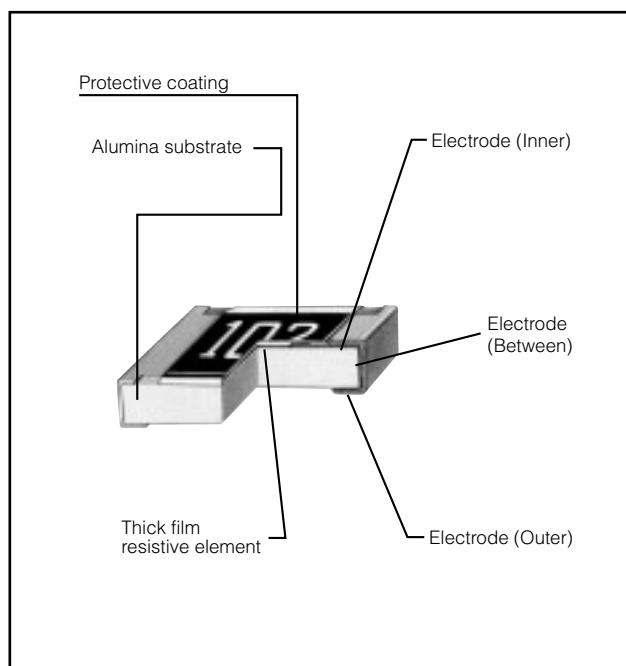
- ERJXGN, 1GN, 2GE, 3GE, 6GE, 8GE, 14, 12, 12Z, 1T Series, ±5 % type

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 Thick Film Chip Resistors	Size, Power Rating		Marking		Resistance Tolerance		Packaging Methods				
	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			*Nil	No marking	C	Pressed Carrier Taping 2 mm pitch, 15,000 pcs.	ERJ1GN		
	3GE : 0603	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.					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										

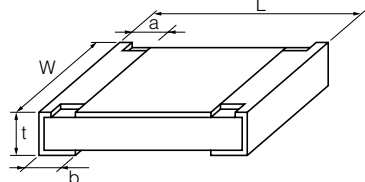
* When omitted, the rest of the P/N factors shall be moved up respectively.
(Only XGN, 1GN, 2GE type)

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

■ 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. ($\times 10^{-6}/^{\circ}\text{C}$)	Category Temperature Range ($^{\circ}\text{C}$)
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)	1 M Ω < : -400 to +150	-55 to +155
ERJ1T (2512)	1	200	500	± 5	1 to 1 M (E24)		-55 to +155

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

(2) Overload (Short-time Overload) Test Voltage (SOTV) shall be determined from $\text{SOTV} = 2.5 \times \text{Power Rating}$ 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)		
ERJ14 (1210)	2	4
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.

