

Thick Film Chip Resistors

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
- AEC-Q200 qualified (Exemption ERJXG)
- RoHS compliant

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

Explanation of Part Numbers

- ERJXGN, 1GN, 2GE, 3GE, 6GE, 8GE, 14, 12, 12Z, 1T Type, $\pm 5\%$

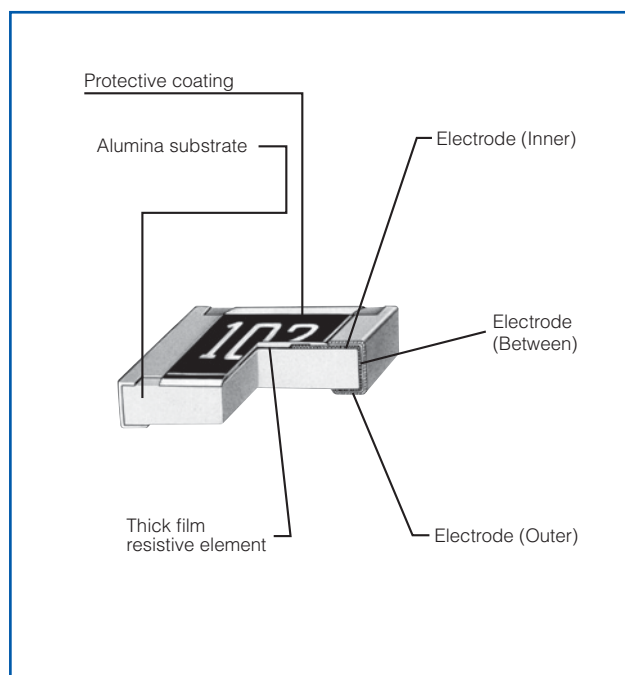
1	2	3	4	5	6	7	8	9	10	11	12
E	R	J	3	G	E	Y	J	1	0	2	V

Product Code	Size, Power Rating			Marking		Resistance Tolerance		Packaging Methods					
Thick Film Chip Resistors	Code	Inch	Power R.	Code	Marking	Code	Tolerance	Code	Packaging	Part No.			
	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	<div>Resistance Value</div> <p>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.</p>									
	3GE	0603	0.1 W										
	6GE	0805	0.125 W										
	8GE	1206	0.25 W										
	14	1210	0.5 W										
	12	1812	0.75 W										
	12Z	2010	0.75 W										
	1T	2512	1 W										
							V	Punched Carrier Taping 4 mm pitch, 5,000 pcs.	ERJ3GE ERJ6GE ERJ8GE				
							U	Embossed Carrier Taping 4 mm pitch, 5,000 pcs.	ERJ14 ERJ12 ERJ12Z				
								Embossed Carrier Taping 4 mm pitch, 4,000 pcs.	ERJ1T				

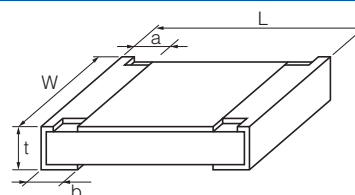
* When omitted, the rest of the P/N factors shall be moved up respectively.
(Only XGN, 1GN, 2GE type)

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Construction



Dimensions in mm (not to scale)



Part No. (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 0.15	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]

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. ($\times 10^{-6}/^{\circ}\text{C}$)	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)	1 M Ω <: -400 to +150	-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)		-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 $\text{SOTV} = 2.5$ (Only ERJ2G=2.0) \times Power Rating or max. Overload Voltage listed above whichever less.

[For Jumper]

Part No. (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.

