

### High Power Chip Resistors / Wide Terminal Type 2512, 2010, 1206, 0805

Type: **ERJ A1, B1, B2, B3**



#### ■ Features

- High solder-joint reliability by wide terminal construction
- Excellent heat dissipation characteristics by wide terminal construction
- RoHS compliant

#### ■ Recommended Applications

- Automotive electronic circuits including ECUs (Electrical control unit), anti-lock breaking systems and air-bag systems
- Current sensing for power supply circuits in a variety of equipment

■ 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



#### ■ Construction (Example : ERJA1 type)



■ Dimensions in mm (not to scale)

ERJA1 type



Mass (Weight) [1000 pcs.] : 40 g

Dimensions (mm)	L	W	T	A <sub>1</sub>	B <sub>1</sub>
	6.40±0.20	3.20±0.20	0.55±0.10	0.70±0.20	0.45±0.20
Dimensions (mm)	A <sub>2</sub>	B <sub>2</sub>	P	φD	C
	0.70±0.20	1.25±0.15	1.27±0.10	0.30 <sup>+0.10</sup> <sub>-0.20</sub>	0.4 min.

ERJB1 type



Mass (Weight) [1000 pcs.] : 27 g

Dimensions (mm)	L	W	T	a	b
	5.00±0.20	2.50±0.20	0.55±0.20	0.25±0.20	0.90±0.20

ERJB2 type

( R < 10 mΩ )



( 10 mΩ ≤ R ≤ 1 MΩ )



Mass (Weight) [1000 pcs.] : 11 g

Dimensions (mm)	L	W	T	a	b
5 mΩ ≤ R < 10 mΩ				0.30±0.20	0.30±0.20
10 mΩ ≤ R < 220 mΩ	3.20±0.20	1.60±0.15	0.65±0.15	0.30±0.20	0.50±0.20
220 mΩ ≤ R ≤ 1 MΩ				0.20±0.20	0.50±0.20

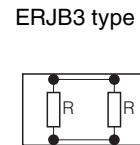
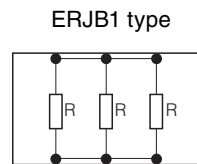
ERJB3 type



Mass (Weight) [1000 pcs.] : 4.8 g

Dimensions (mm)	L	W	T	a	b
	2.00±0.10	1.25±0.10	0.50±0.10	0.25±0.15	0.40±0.15

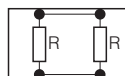
■ Circuit Configuration



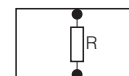
< Less than 10 mΩ >



< Low resistance zone >



< High resistance zone >



### ■ Ratings

Type (inch size)	Power Rating at 70 °C (W)	Limiting Element Voltage <sup>(1)</sup> (V)	Maximum Overload Voltage <sup>(2)</sup> (V)	Resistance Tolerance (%)	Resistance Range (Ω)	T.C.R. ( $\times 10^{-6}/^{\circ}\text{C}$ )	Category Temperature Range (°C)
ERJA1 (2512)	1.33	200	400	±1	100 m to 10 k (E24)	R < 100 mΩ : ±350 100 mΩ ≤ R : ±100 (±1%) ±200 (±2%, ±5%)	-55 to +155
				±2, ±5	10 m to 10 k (E24)		
ERJB1 (2010)	$\frac{1}{2}(R \leq 10 \Omega)^{(3)}$	200	400	±1, ±2, ±5	10 m to 10 k (E24)	R < 22 mΩ : ±350 22 mΩ ≤ R < 47 mΩ : ±200 47 mΩ ≤ R < 100 mΩ : ±150 (±1%) ±200 (±2%, ±5%) 100 mΩ ≤ R : ±100 (±1%) ±200 (±2%, ±5%)	-55 to +155
ERJB2 (1206)	$\frac{0.75}{1}(R \leq 10 \Omega)^{(3)}$	200	400	±1, ±2	10 m to 1 M (E24)	R < 22 mΩ : 0 to +300 22 mΩ ≤ R < 47 mΩ : 0 to +200 47 mΩ ≤ R < 100 mΩ : 0 to +150 100 mΩ ≤ R < 220 mΩ : 0 to +150 (±1%) 0 to +200 (±2%, ±5%) 220 mΩ ≤ R : ±100 (±1%) ±200 (±2%, ±5%)	-55 to +155
				±5	5 m to 1 M (5 m to 9 m : 1mΩ step) 10 m to 1 M : E24		
ERJB3 (0805)	$\frac{0.33}{0.5}(R \leq 1 \Omega)^{(3)}$	150	200	±1, ±2, ±5	20 m to 10 (E24)	R < 47 mΩ : 0 to +300 47 mΩ ≤ R ≤ 1 Ω : 0 to +200 1 Ω < R : ±100 (±1%) ±200 (±2%, ±5%)	-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.

(3) Please contact us when resistors with guaranteed high power are needed.

### Power Derating Curve

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

