High Power Chip Resistors / Wide Terminal Type

Type: ERJ A1, B1, B2, B3

Features

- High solder-joint reliability by wide terminal construction
- Excellent heat dissipation characteristics by wide terminal construction
- AEC-Q200 qualified
- 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

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

Explanation of Part Numbers

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

Product Code

Thick Film Chip Resistors

Size, Power Rating

Code	Inch	Power R.
A1	1225	1.33 W
B1	1020	1 W, (2 W R ≦ 10 Ω)
B2	0612	0.75 W, (1 W R ≦ 10 Ω)
B3	0508	0.33 W, (0.5 W R ≦ 1 Ω)

Resistance Value Region

A	10 Ω ≦ R
B	0.22 Ω ≦ R <10 Ω
C	0.01 Ω ≦ R < 0.22 Ω
D	0.005 Ω ≦ R < 0.01 Ω

Resistance Tolerance

F	± 1 %
G	± 2 %
J	± 5 %

Packaging Methods

Code	Packaging	Part No.
V	Punched Carrier Taping 4 mm pitch, 5,000 pcs.	ERJB2 ERJB3
U	Embossed Carrier Taping 4 mm pitch, 5,000 pcs.	ERJB1
	Embossed Carrier Taping 4 mm pitch, 4,000 pcs.	ERJA1

Resistance Value

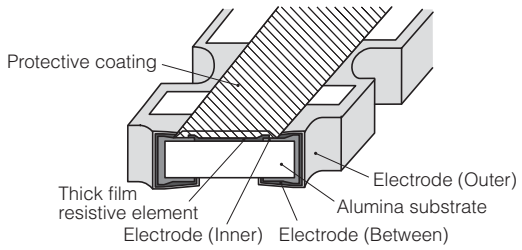
Shown by 3 digits or letters. Only when it is impossible, shown by 4 digits or letters.
(Ex.) 102 : 1.0 kΩ R01 : 0.01 Ω = 10 mΩ
4R7 : 4.7 Ω R015 : 0.015 Ω = 15 mΩ

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)
ERJA1 (1225)	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 (1020)	1 2(R ≦ 10 Ω)	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 (0612)	0.75 1(R ≦ 10 Ω)	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 (0508)	0.33 0.5(R ≦ 1 Ω)	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

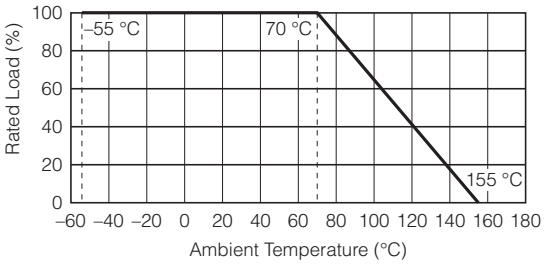
(1) Rated Continuous Working Voltage (RCWV) shall be determined from RCWV=$\sqrt{\text{Power Rating} \times \text{Resistance Values}}$, or Limiting Element Voltage listed above, whichever less.
(2) Overload (Short-time Overload) Test Voltage (SOTV) shall be determined from SOTV=2.5 × RCWV or max. Overload Voltage listed above whichever less.

Construction (Example : ERJA1 type)



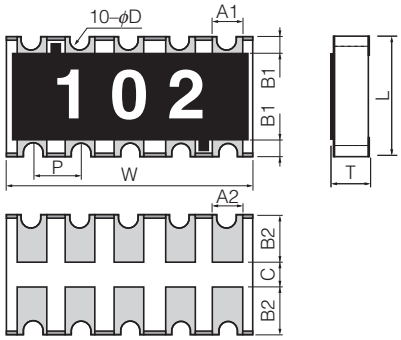
Power Derating Curve

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



Dimensions in mm (not to scale)

ERJA1 type



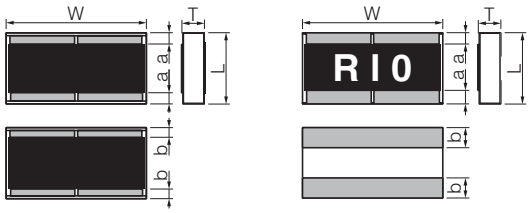
Mass (Weight) [1000 pcs.] : 40 g

Dimensions (mm)	L	W	T	A_1	B_1
	3.20±0.20	6.40±0.20	0.55±0.10	0.70±0.20	0.45±0.20

Dimensions (mm)	A_2	B_2	P	φD	C
	0.70±0.20	1.25±0.15	1.27±0.10	$0.30^{+0.10}_{-0.20}$	0.4 min.

ERJB2 type

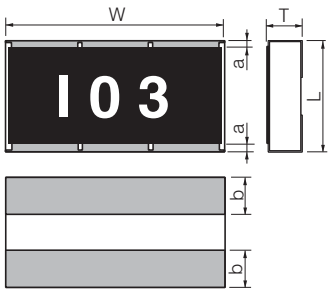
(R< 10 mΩ) (10 mΩ ≦ R ≦ 1 MΩ)



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

Dimensions (mm)	L	W	T	a	b
5 mΩ≦R<10 mΩ	1.60±0.15	3.20±0.20	0.65±0.15	0.30±0.20	0.30±0.20
10 mΩ≦R<220 mΩ			0.55±0.15		0.50±0.20
220 mΩ≦R≦1 MΩ				0.25±0.20	

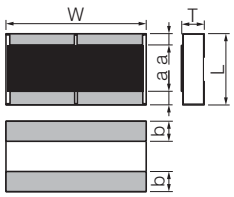
ERJB1 type



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

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

ERJB3 type

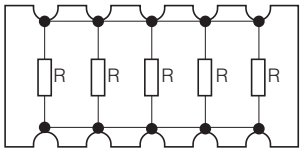


Mass (Weight) [1000 pcs.] : 4.8 g

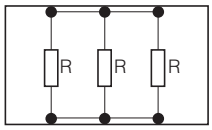
Dimensions (mm)	L	W	T	a	b
	1.25±0.10	2.00±0.15	0.50±0.10	0.25±0.20	0.40±0.20

Circuit Configuration

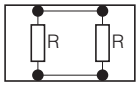
ERJA1 type



ERJB1 type

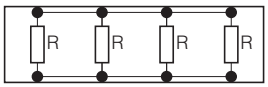


ERJB3 type

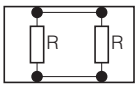


ERJB2 type

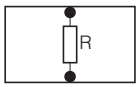
< Less than 10 mΩ >



< Low resistance zone >



< High resistance zone >



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Panasonic:

ERJ-A1AJ100U ERJ-A1BJ2R7U ERJ-A1CGR022U ERJ-A1CGR10U ERJ-B1BF1R0U ERJ-B1BF1R1U ERJ-B1BF1R2U ERJ-B1BF1R3U ERJ-B1BF1R5U ERJ-B1BF1R6U ERJ-B1BF1R8U ERJ-B1BF2R0U ERJ-B1BF2R2U ERJ-B1BF2R4U ERJ-B1BF2R7U ERJ-B1BF3R0U ERJ-B1BF3R3U ERJ-B1BF3R6U ERJ-B1BF3R9U ERJ-B1BF4R3U ERJ-B1BF4R7U ERJ-B1BF5R1U ERJ-B1BF5R6U ERJ-B1BF6R2U ERJ-B1BF6R8U ERJ-B1BF7R5U ERJ-B1BF8R2U ERJ-B1BF9R1U ERJ-B1BFR22U ERJ-B1BFR24U ERJ-B1BFR27U ERJ-B1BFR30U ERJ-B1BFR33U ERJ-B1BFR36U ERJ-B1BFR39U ERJ-B1BFR43U ERJ-B1BFR47U ERJ-B1BFR51U ERJ-B1BFR56U ERJ-B1BFR62U ERJ-B1BFR68U ERJ-B1BFR75U ERJ-B1BFR82U ERJ-B1BFR91U ERJ-B1AF121U ERJ-A1AF430U ERJ-A1BF7R5U ERJ-B1AF300U ERJ-B1AF390U ERJ-B1AF750U ERJ-B1CFR02U ERJ-B2AF513V ERJ-A1AF102U ERJ-B1AF102U ERJ-B1CFR20U ERJ-B2CFR02V ERJ-B3AF121U ERJ-B3AJ100U ERJ-B3AJ101U ERJ-B3AJ121U ERJ-B3AJ122U ERJ-B3AJ130U ERJ-B3AJ131U ERJ-B3AJ151U ERJ-B3AJ152U ERJ-B3AJ161U ERJ-B3AJ180U ERJ-B3AJ181U ERJ-B3AJ200U ERJ-B3AJ220U ERJ-B3AJ221U ERJ-B3AJ240U ERJ-B3AJ241U ERJ-B3AJ270U ERJ-B3AJ271U ERJ-B3AJ272U ERJ-B3AJ300U ERJ-B3AJ330U ERJ-B3AJ332U ERJ-B3AJ390U ERJ-B3AJ391U ERJ-B3AJ430U ERJ-B3AJ431U ERJ-B3AJ471U ERJ-B3AJ472U ERJ-B3AJ511U ERJ-B3AJ560U ERJ-B3AJ561U ERJ-B3AJ562U ERJ-B3AJ620U ERJ-B3AJ621U ERJ-B3AJ680U ERJ-B3AJ681U ERJ-B3AJ682U ERJ-B3AJ750U ERJ-B3AJ751U ERJ-B3AJ820U ERJ-B3AJ821U ERJ-B3AJ822U ERJ-B3AJ910U