Metal Film (Thin Film) Chip Resistors, High Reliability Type



Type: ERA 1A, 2A, 3A, 6A, 8A

Features

- High reliability ····· Stable at high temperature and humidity (85 °C 85 %RH rated load, Category temperature range : –55 to +155 °C)
- High accuracy ····· Small resistance tolerance and Temperature Coefficient of Resistance
- High performance ····· Low current noise, excellent linearity
- Reference Standard ····· IEC 60115-8, JIS C 5201-8, EIAJ RC-2133B
- AEC-Q200 qualified
- RoHS compliant

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

Explanation of Part Numbers

- E24 Series

1	2	3	4	5	6	7	8	9	10	11
E	R	A	3	A	E	B	1	0	2	V

Product Code

Metal Film Chip Resistors

Size, Power Rating

Code	Inch	Power Rating
1A	0201	0.05 W
2A	0402	0.063 W
3A	0603	0.1 W
6A	0805	0.125 W
8A	1206	0.25 W

Temperature Coefficient

Code	T.C.R.
R	±10×10^{-6}/°C
P	±15×10^{-6}/°C
E	±25×10^{-6}/°C
H	±50×10^{-6}/°C
K	±100×10^{-6}/°C

Resistance Tolerance

Code	Tolerance
W	±0.05 %
B	±0.1 %
C	±0.25 %
D	±0.5 %

Packaging Methods

Code	Packaging	Part No.
C	Pressed Carrier Taping 2 mm pitch, 15000 pcs.	ERA1A
X	Punched Carrier Taping 2 mm pitch, 10000 pcs.	ERA2A
V	Punched CarrierTaping 4 mm pitch, 5000 pcs.	ERA3A ERA6A ERA8A

Resistance Value

Consist of three figures for E24 series resistance value. The first two digits are significant figures of resistance and the third one denotes number of zeros following.
(example) 102 : 1 kΩ

- E96 Series and other Resistance values

1	2	3	4	5	6	7	8	9	10	11	12
E	R	A	3	A	E	B	1	0	5	1	V

Product Code

Metal Film Chip Resistors

Size, Power Rating

Code	Inch	Power Rating
1A	0201	0.05 W
2A	0402	0.063 W
3A	0603	0.1 W
6A	0805	0.125 W
8A	1206	0.25 W

Temperature Coefficient

Code	T.C.R.
R	±10×10^{-6}/°C
P	±15×10^{-6}/°C
E	±25×10^{-6}/°C
H	±50×10^{-6}/°C
K	±100×10^{-6}/°C

Resistance Tolerance

Code	Tolerance
W	±0.05 %
B	±0.1 %
C	±0.25 %
D	±0.5 %

Packaging Methods

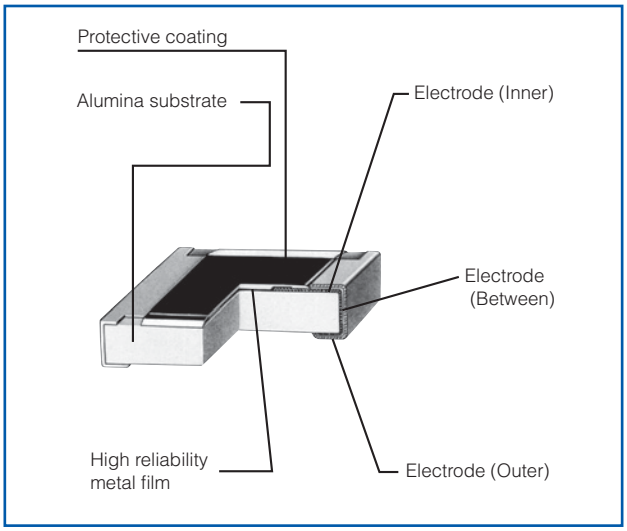
Code	Packaging	Part No.
C	Pressed Carrier Taping 2 mm pitch, 15000 pcs.	ERA1A
X	Punched Carrier Taping 2 mm pitch, 10000 pcs.	ERA2A
V	Punched CarrierTaping 4 mm pitch, 5000 pcs.	ERA3A ERA6A ERA8A

Resistance Value

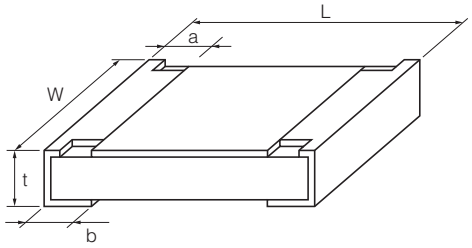
Consist of four figures for E96 series resistance value. The first three digits are significant figures of resistance and the fourth one denotes number of zeros following.
(example) 1051 : 1.05 kΩ

note : Duplicated resistance values as E24 series part numbers shall follow E24 part numbers.
(apply three digit resistance value)

Construction



Dimensions in mm (not to scale)



Part No. (inch size)	Dimensions (mm)					Mass (Weight) [g/1000 pcs.]
	L	W	a	b	t	
ERA1A (0201)	$0.60^{\pm0.03}$	$0.30^{\pm0.03}$	$0.15^{\pm0.05}$	$0.15^{\pm0.05}$	$0.23^{\pm0.03}$	0.14
ERA2A (0402)	$1.00^{\pm0.10}$	$0.50^{+0.10}_{-0.05}$	$0.15^{\pm0.10}$	$0.25^{\pm0.10}$	$0.35^{\pm0.05}$	0.6
ERA3A (0603)	$1.60^{\pm0.20}$	$0.80^{\pm0.20}$	$0.30^{\pm0.20}$	$0.30^{\pm0.20}$	$0.45^{\pm0.10}$	2
ERA6A (0805)	$2.00^{\pm0.20}$	$1.25^{\pm0.10}$	$0.40^{\pm0.25}$	$0.40^{\pm0.25}$	$0.50^{\pm0.10}$	4
ERA8A (1206)	$3.20^{\pm0.20}$	$1.60^{+0.05}_{-0.15}$	$0.50^{\pm0.25}$	$0.50^{\pm0.25}$	$0.60^{\pm0.10}$	8

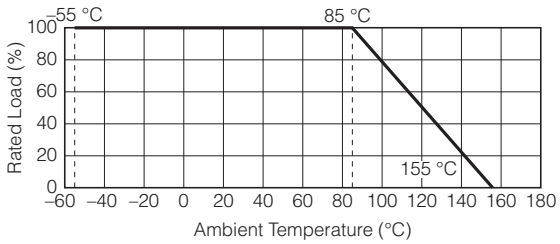
Ratings

Part No. (inch size)	Power Rating at 85 °C (W)	Limiting Element Voltage[1] (V)	Maximum Overload Voltage[2] (V)	Part No. (detail)	Resistance Tolerance (%)	T.C.R. ($\times10^{-6}$/°C)	Resistance Range[3][4] (Ω)	Category Temperature Range (°C)
ERA1A (0201)	0.05	25	50	ERA1AEB	±0.1	±25	100 to 10 k (E24, E96)	–55 to +155
				ERA1AEC	±0.25			
ERA2A (0402)	0.063	50	100	ERA2AKD	±0.5	±100	10 to 46.4 (E24, E96)	
				ERA2AED	±0.5	±25	47 to 100 k (E24, E96)	
				ERA2AEB	±0.1			
				ERA2APB	±0.1	±15	200 to 47 k (E24, E96)	
				ERA2ARC	±0.25	±10	200 to 47 k (E24, E96)	
				ERA2ARB	±0.1			
ERA3A (0603)	0.1	75	150	ERA3AHD	±0.5	±50	10 to 46.4 (E24, E96)	
				ERA3AED	±0.5	±25	47 to 330 k (E24, E96)	
				ERA3AEB	±0.1			
				ERA3APB	±0.1	±15	470 to 100 k (E24, E96)	
				ERA3ARB	±0.1	±10	1 k to 100 k (E24, E96)	
				ERA3ARW	±0.05			
ERA6A (0805)	0.125	100	200	ERA6AHD	±0.5	±50	10 to 46.4 (E24, E96)	
				ERA6AED	±0.5	±25	47 to 1 M (E24, E96)	
				ERA6AEB	±0.1			
				ERA6APB	±0.1	±15	470 to 100 k (E24, E96)	
				ERA6ARB	±0.1	±10	1 k to 100 k (E24, E96)	
				ERA6ARW	±0.05			
ERA8A (1206)	0.25	150	300	ERA8AHD	±0.5	±50	10 to 46.4 (E24, E96)	
				ERA8AED	±0.5	±25	47 to 1 M (E24, E96)	
				ERA8AEB	±0.1			
				ERA8APB	±0.1	±15	470 to 100 k (E24, E96)	
				ERA8ARB	±0.1	±10	1 k to 100 k (E24, E96)	
				ERA8ARW	±0.05			

(1) Rated Continuous Working Voltage (RCWV) shall be determined from RCWV=$\sqrt{\text{Rated Power} \times \text{Resistance Values}}$, 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.
(3) E192 series resistance values are also available. Please contact us for details.
(4) Duplicated resistance values between E96, E192 and E24 series shall follow E24 Part Numbers. (apply three digit resistance value)

Power Derating Curve

For resistors operated in ambient temperatures above 85 °C, power rating shall be derated in accordance with the figure on the right.



Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.
Should a safety concern arise regarding this product, please be sure to contact us immediately.

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ERA-2AED1182X ERA-2AED1210X ERA-2AED1270X ERA-2AED4422X ERA-1AEC1781C ERA-1AEC2150C ERA-1AEC221C ERA-1AEC241C ERA-1AEC2610C ERA-2AED3832X ERA-1AEC2940C ERA-1AEC3921C ERA-1AEC472C ERA-1AEC8871C ERA-1AEC6190C ERA-1AEC1691C ERA-2ARB5900X ERA-2ARB8661X ERA-1AEC162C ERA-1AEC201C ERA-1AEC2550C ERA-1AEC271C ERA-2ARC1371X ERA-2ARC1542X ERA-2ARB3091X ERA-2ARB6810X ERA-2ARB7150X ERA-2ARB4222X ERA-1AEC2490C ERA-1AEC2740C ERA-1AEC302C ERA-1AEC3320C ERA-1AEC4530C ERA-2ARC1332X ERA-1AEC3160C ERA-1AEB241C ERA-1AEC362C ERA-1AEC4120C ERA-1AEC112C ERA-1AEC1961C ERA-1AEC1331C ERA-1AEC1620C ERA-1AEC1690C ERA-1AEB471C ERA-1AEC1181C ERA-1AEC1540C ERA-1AEC4751C ERA-1AEC752C ERA-1AEC9090C ERA-1AEC101C ERA-1AEC1211C ERA-1AEC1051C ERA-2ARB3160X ERA-2ARB6650X ERA-1AEC1740C ERA-1AEC242C ERA-1AEC4021C ERA-1AEC4750C ERA-2ARC1071X ERA-2APB1052X ERA-2APB1542X ERA-2ARB3092X ERA-2ARB1622X ERA-2ARB2432X ERA-1AEC512C ERA-1AEC3010C ERA-1AEC3240C ERA-1AEC3400C ERA-1AEC2320C ERA-2ARC1021X ERA-1AEB122C ERA-1AEB181C ERA-1AEC3481C ERA-1AEC4320C ERA-1AEC4990C ERA-1AEC4991C ERA-1AEB301C ERA-1AEB362C ERA-1AEB432C ERA-1AEB511C ERA-1AEC1130C ERA-1AEB121C ERA-1AEC4870C ERA-1AEC111C ERA-1AEC1131C ERA-1AEC1270C ERA-1AEC1471C ERA-1AEB222C ERA-2APB1781X ERA-2ARB3090X ERA-1AEC222C ERA-1AEC2741C ERA-1AEC332C ERA-1AEC361C ERA-1AEC9761C ERA-2ARB2100X ERA-2APB1182X ERA-2ARB2610X ERA-2ARB2941X ERA-2APB1132X

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