

**Metal Film (Thin Film) Chip Resistors,
High Reliability Type
0201, 0402, 0603, 0805, 1206**

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

■ **Features**

- High reliabilityStable 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

■ **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	Size, Power Rating		Temperature Coefficient		Resistance Tolerance		Packaging Methods		
Metal Film Chip Resistors	Type: inch	Power Rating	Code	T.C.R.	Code	Tolerance	Code	Packaging	Type
	1A : 0201	0.05 W	R	±10×10 ⁻⁶ /°C	W	±0.05 %	C	Pressed Carrier Taping 2 mm pitch, 15000 pcs.	ERA1A
	2A : 0402	0.063 W	P	±15×10 ⁻⁶ /°C	B	±0.1 %	X	Punched Carrier Taping 2 mm pitch, 10000 pcs.	ERA2A
	3A : 0603	0.1 W	E	±25×10 ⁻⁶ /°C	C	±0.25 %	V	Punched CarrierTaping 4 mm pitch, 5000 pcs.	ERA3A ERA6A ERA8A
	6A : 0805	0.125 W	H	±50×10 ⁻⁶ /°C	D	±0.5 %			
	8A : 1206	0.25 W	K	±100×10 ⁻⁶ /°C					

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

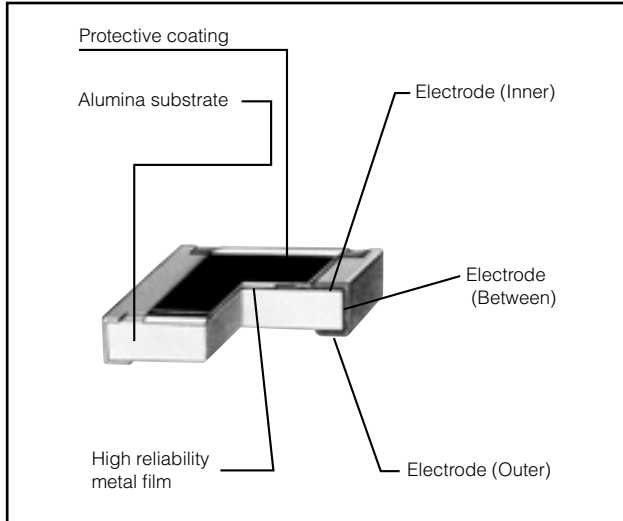
Product Code	Size, Power Rating		Temperature Coefficient		Resistance Tolerance		Packaging Methods		
Metal Film Chip Resistors	Type: inch	Power Rating	Code	T.C.R.	Code	Tolerance	Code	Packaging	Type
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	3A : 0603	0.1 W	E	±25×10 ⁻⁶ /°C	C	±0.25 %	V	Punched CarrierTaping 4 mm pitch, 5000 pcs.	ERA3A ERA6A ERA8A
	6A : 0805	0.125 W	H	±50×10 ⁻⁶ /°C	D	±0.5 %			
	8A : 1206	0.25 W	K	±100×10 ⁻⁶ /°C					

Resistance Value

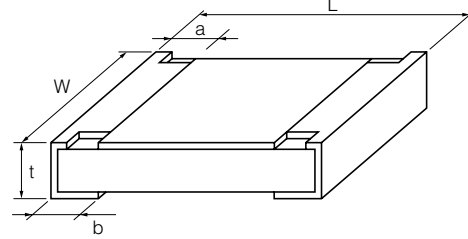
Consist of four figures for E96 series resistance value.
The first three digits are significant figures of resistance
and the fourth one denotes number of zeros following.
(example) 1051 : 1.05 kΩ

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)



Type (inch size)	Dimensions (mm)					Mass (Weight) [g/1000 pcs.]
	L	W	a	b	t	
ERA1A (0201)	0.60 ^{±0.03}	0.30 ^{±0.03}	0.15 ^{±0.05}	0.15 ^{±0.05}	0.23 ^{±0.03}	0.14
ERA2A (0402)	1.00 ^{±0.10}	0.50 ^{+0.10 -0.05}	0.15 ^{±0.10}	0.25 ^{±0.10}	0.35 ^{±0.05}	0.6
ERA3A (0603)	1.60 ^{±0.20}	0.80 ^{±0.20}	0.30 ^{±0.20}	0.30 ^{±0.20}	0.45 ^{±0.10}	2
ERA6A (0805)	2.00 ^{±0.20}	1.25 ^{±0.10}	0.40 ^{±0.25}	0.40 ^{±0.25}	0.50 ^{±0.10}	4
ERA8A (1206)	3.20 ^{±0.20}	1.60 ^{+0.05 -0.15}	0.50 ^{±0.25}	0.50 ^{±0.25}	0.60 ^{±0.10}	8

Ratings

Type (inch size)	Power Rating at 85 °C (W)	Limiting Element Voltage ⁽¹⁾ (V)	Maximum Overload Voltage ⁽²⁾ (V)	Type (detail)	Resistance Tolerance (%)	T.C.R. (×10 ⁻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	±15	200 to 47 k (E24, E96)	
				ERA2APB	±0.1	±10	200 to 47 k (E24, E96)	
				ERA2ARC	±0.25			
				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	±15	470 to 100 k (E24, E96)	
				ERA3APB	±0.1	±10	1 k to 100 k (E24, E96)	
				ERA3ARB	±0.1			
				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	±15	470 to 100 k (E24, E96)	
				ERA6APB	±0.1	±10	1 k to 100 k (E24, E96)	
				ERA6ARB	±0.1			
				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	±15	470 to 100 k (E24, E96)	
				ERA8APB	±0.1	±10	1 k to 100 k (E24, E96)	
				ERA8ARB	±0.1			
				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 $SOTV = 2.5 \times \text{Power Rating}$ 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.

