



Features

- Thick film technology
- Power rating up to 1 watt @ 70 °C
- RoHS compliant*
- Halogen free**
- AEC-Q200 compliant

Additional Information

Click these links for more information:



CR-A Series - AEC-Q200 Compliant Chip Resistors

Electrical Characteristics

| Characteristic | Model No. | | | |
|--|--|--|--|--|
| | CR0201A | CR0402A | CR0603A | CR0805A |
| Power Rating @ 70 °C | 0.05 W | 0.063 W | 0.1 W | 0.125 W |
| Operating Temp. Range | -55 to +125 °C | -55 to +155 °C | | |
| Derated to Zero Load at | +125 °C | +155 °C | | |
| Maximum Working Voltage | 25 V | 50 V | 50 V | 150 V |
| Maximum Overload Voltage | 50 V | 100 V | 100 V | 300 V |
| Resistance Tolerance | ±1 %, ±5 % | | | |
| Temperature Coefficient @ 1 % (E24 + E96) | 1 Ω ~ 9.76 Ω -200 ~ +600 ppm/°C 10 Ω ~ 3M Ω +200 ppm/°C | 1 Ω ~ 9.76 Ω -200 ~ +500 ppm/°C 100 Ω ≤ R ≤ 1M Ω ±100 ppm/°C 10 Ω ≤ R < 100 Ω 1M Ω < R ≤ 10M Ω ±200 ppm/°C | 1 Ω ~ 9.76 Ω ±400 ppm/°C 10 Ω ≤ R ≤ 1M Ω ±100 ppm/°C 1M Ω < R ≤ 10M Ω ±200 ppm/°C | 1 Ω ~ 9.76 Ω ±400 ppm/°C 10 Ω ≤ R ≤ 1M Ω ±100 ppm/°C 1M Ω < R ≤ 10M Ω ±200 ppm/°C |
| Temperature Coefficient @ 5 % (E24) | 1 Ω ~ 9.1 Ω -200 ~ +600 ppm/°C 10 Ω ~ 10M Ω +200 ppm/°C | 1 Ω ~ 9.1 Ω -200 ~ +500 ppm/°C 10 Ω ≤ R ≤ 10M Ω ±200 ppm/°C 10M Ω ≤ R ≤ 20M Ω ±400 ppm/°C | 1 Ω ~ 9.1 Ω 10M < R ≤ 20M Ω ±400 ppm/°C 10 Ω ≤ R ≤ 10M Ω ±200 ppm/°C | 1 Ω ~ 9.1 Ω 10M < R ≤ 20M Ω ±400 ppm/°C 10 Ω ≤ R ≤ 10M Ω ±200 ppm/°C |
| Zero Ohm Jumper ≤ 0.05 Ω Rated / Max. Current | 0.5 A / 1 A | 1 A / 2.5 A | 1 A / 2.5 A | 2 A / 5 A |

Environmental Characteristics

Moisture Sensitivity Level..... 1



WARNING Cancer and Reproductive Harm

www.P65Warnings.ca.gov

* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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CR-A Series - AEC-Q200 Compliant Chip Resistors

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Electrical Characteristics (continued)

| Characteristic | Model No. | | | |
|--|---|---------|---------|---------|
| | CR1206A | CR1210A | CR2010A | CR2512A |
| Power Rating @ 70 °C | 0.25 W | 0.33 W | 0.5 W | 1 W |
| Operating Temp. Range | -55 to +155 °C | | | |
| Derated to Zero Load at | +155 °C | | | |
| Maximum Working Voltage | 200 V | | | |
| Maximum Overload Voltage | 400 V | | | |
| Resistance Tolerance | ±1 %, ±5 % | | | |
| Temperature Coefficient @ 1 % (E24 + E96) | 1 Ω ~ 9.76 Ω ±400 ppm/°C | | | |
| | 10 Ω ≤ R ≤ 1M Ω ±100 ppm/°C | | | |
| | 1M Ω < R ≤ 10M Ω ±200 ppm/°C | | | |
| Temperature Coefficient @ 5 % (E24) | 1 Ω ~ 9.1 Ω 10M < R ≤ 20M Ω ±400 ppm/°C | | | |
| | 10 Ω ≤ R ≤ 10M Ω ±200 ppm/°C | | | |
| Zero Ohm Jumper ≤ 0.05 Ω Rated / Max. Current | 2 A / 5 A | | | |

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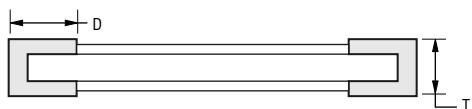
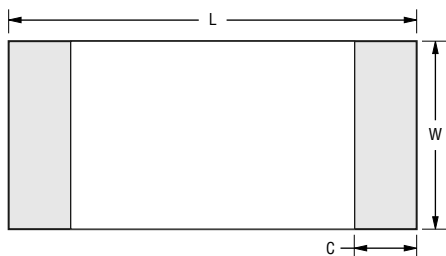
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CR-A Series - AEC-Q200 Compliant Chip Resistors

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Product Dimensions



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

| Model | L | W | C | D | T |
|---------|---|---|---|---|---|
| CR0201A | $\frac{0.60 \pm 0.03}{(.024 \pm .001)}$ | $\frac{0.30 \pm 0.03}{(.012 \pm .001)}$ | $\frac{0.10 \pm 0.05}{(.004 \pm .002)}$ | $\frac{0.15 \pm 0.05}{(.006 \pm .002)}$ | $\frac{0.23 \pm 0.03}{(.009 \pm .001)}$ |
| CR0402A | $\frac{1.00 \pm 0.10}{(.039 \pm .004)}$ | $\frac{0.50 \pm 0.05}{(.020 \pm .002)}$ | $\frac{0.20 \pm 0.10}{(.008 \pm .004)}$ | $\frac{0.25 \pm 0.10}{(.010 \pm .004)}$ | $\frac{0.32 \pm 0.05}{(.013 \pm .002)}$ |
| CR0603A | $\frac{1.60 \pm 0.10}{(.063 \pm .004)}$ | $\frac{0.80 \pm 0.10}{(.031 \pm .004)}$ | $\frac{0.30 \pm 0.20}{(.012 \pm .008)}$ | $\frac{0.30 \pm 0.20}{(.012 \pm .008)}$ | $\frac{0.45 \pm 0.10}{(.018 \pm .004)}$ |
| CR0805A | $\frac{2.00 \pm 0.10}{(.079 \pm .004)}$ | $\frac{1.25 \pm 0.10}{(.049 \pm .004)}$ | $\frac{0.40 \pm 0.20}{(.016 \pm .008)}$ | $\frac{0.40 \pm 0.20}{(.016 \pm .008)}$ | $\frac{0.50 \pm 0.10}{(.020 \pm .004)}$ |
| CR1206A | $\frac{3.10 \pm 0.10}{(.122 \pm .004)}$ | $\frac{1.55 \pm 0.10}{(.061 \pm .004)}$ | $\frac{0.50 \pm 0.30}{(.020 \pm .012)}$ | $\frac{0.40 \pm 0.20}{(.016 \pm .008)}$ | $\frac{0.55 \pm 0.10}{(.022 \pm .004)}$ |
| CR1210A | $\frac{3.10 \pm 0.10}{(.122 \pm .004)}$ | $\frac{2.55 \pm 0.10}{(.100 \pm .004)}$ | $\frac{0.50 \pm 0.30}{(.020 \pm .012)}$ | $\frac{0.40 \pm 0.20}{(.016 \pm .008)}$ | $\frac{0.60 \pm 0.10}{(.024 \pm .004)}$ |
| CR2010A | $\frac{5.00 \pm 0.15}{(.197 \pm .006)}$ | $\frac{2.50 \pm 0.15}{(.098 \pm .006)}$ | $\frac{0.60 \pm 0.30}{(.024 \pm .012)}$ | $\frac{0.50 \pm 0.25}{(.020 \pm .010)}$ | $\frac{0.60 \pm 0.10}{(.024 \pm .004)}$ |
| CR2512A | $\frac{6.30 \pm 0.20}{(.248 \pm .008)}$ | $\frac{3.20 \pm 0.20}{(.126 \pm .008)}$ | $\frac{0.60 \pm 0.30}{(.024 \pm .012)}$ | $\frac{0.50 \pm 0.25}{(.020 \pm .010)}$ | $\frac{0.60 \pm 0.10}{(.024 \pm .004)}$ |

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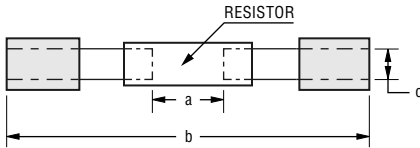
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CR-A Series - AEC-Q200 Compliant Chip Resistors

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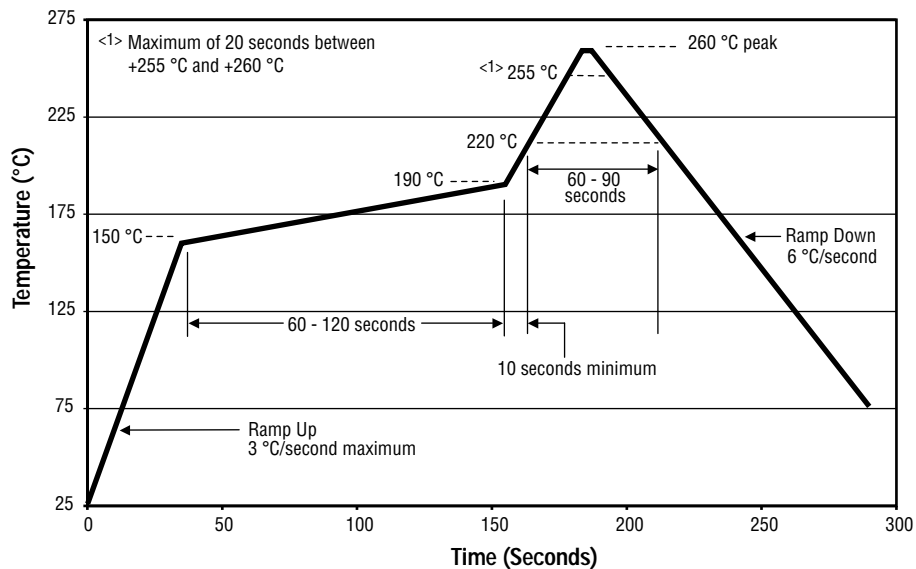
Recommended Pad Layout



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

| Model | a | b | c |
|---------|---|---|---|
| CR0201A | $\frac{0.25 \sim 0.30}{(.010 \sim .012)}$ | $\frac{0.70 \sim 0.90}{(.028 \sim .035)}$ | $\frac{0.30 \sim 0.40}{(.012 \sim .016)}$ |
| CR0402A | $\frac{0.50 \sim 0.60}{(.020 \sim .024)}$ | $\frac{1.40 \sim 1.60}{(.055 \sim .063)}$ | $\frac{0.40 \sim 0.60}{(.012 \sim .024)}$ |
| CR0603A | $\frac{0.70 \sim 0.90}{(.028 \sim .035)}$ | $\frac{2.00 \sim 2.20}{(.079 \sim .087)}$ | $\frac{0.80 \sim 1.00}{(.031 \sim .039)}$ |
| CR0805A | $\frac{1.00 \sim 1.40}{(.039 \sim .055)}$ | $\frac{3.20 \sim 3.80}{(.126 \sim .150)}$ | $\frac{0.90 \sim 1.40}{(.035 \sim .055)}$ |
| CR1206A | $\frac{2.00 \sim 2.40}{(.079 \sim .094)}$ | $\frac{4.40 \sim 5.00}{(.173 \sim .197)}$ | $\frac{1.20 \sim 1.80}{(.047 \sim .071)}$ |
| CR1210A | $\frac{2.00 \sim 2.40}{(.079 \sim .094)}$ | $\frac{4.50 \sim 5.00}{(.177 \sim .197)}$ | $\frac{2.30 \sim 3.50}{(.091 \sim .138)}$ |
| CR2010A | $\frac{3.30 \sim 3.70}{(.130 \sim .146)}$ | $\frac{5.70 \sim 6.50}{(.224 \pm .256)}$ | $\frac{2.30 \sim 3.50}{(.091 \sim .138)}$ |
| CR2512A | $\frac{3.60 \sim 4.00}{(.142 \sim .157)}$ | $\frac{7.60 \sim 8.60}{(.299 \sim .339)}$ | $\frac{2.30 \sim 3.50}{(.091 \sim .138)}$ |

Soldering Profile



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CR-A Series - AEC-Q200 Compliant Chip Resistors

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Performance Characteristics (AEC-Q200)

| Test | Method | Procedure | Test Limits ΔR |
|-------------------------------------|--|--|---|
| Short Time Overload | IEC 60115-1 4.13 | 2.5 X rated voltage for 5 sec. | $\pm (1 \% + 0.05 \Omega)$ Remarks: 0201: $\pm (3 \% + 0.1 \Omega)$ 0402: $\pm (2 \% + 0.1 \Omega)$ 0 Ω : 50 m Ω or less |
| High Temperature Exposure (Storage) | AEC-Q200-REV D-Test 3 MIL-STD-202 Method 108 | 1000 hrs. @ T=125 °C. Unpowered. Measurement at 24 \pm 2 hours after test conclusion. | 1 %: $\pm (1.0 \% + 0.05 \Omega)$ 5 %: $\pm (2.0 \% + 0.1 \Omega)$ 0201: $\pm (3 \% + 0.1 \Omega)$ 0 Ω : 50 m Ω or less |
| Moisture Resistance | AEC-Q200-REV D-Test 6 MIL-STD-202 Method 106 | T=24 hours / Cycle, 10 Cycles. Notes: Steps 7a & 7b not required. Unpowered. | 1 %: $\pm (1.0 \% + 0.05 \Omega)$ 2 %, 5 %: $\pm (2.0 \% + 0.1 \Omega)$ 0201: $\pm (3 \% + 0.1 \Omega)$ 0 Ω : 50 m Ω or less |
| Biased Humidity | AEC-Q200-REV D-Test 7 MIL-STD-202 Method 103 | 1000 hours 85 °C / 85 % RH. Note: Specified conditions: 10 % of operating power (not exceeding max. working voltage). Measurement at 24 \pm 2 hours after test conclusion. | $\pm (3 \% + 0.1 \Omega)$ 0201: $\pm (5 \% + 0.1 \Omega)$ 0 Ω : 100 m Ω or less |
| Operational Life | AEC-Q200-REV D-Test 8 MIL-STD-202 Method 108 | 1000 hours T _A =70 °C at rated power. Measurement at 24 \pm 2 hours after test conclusion. | 1 %: $\pm (1 \% + 0.1 \Omega)$ 5 %: $\pm (3 \% + 0.1 \Omega)$ 0201: $\pm (5 \% + 0.1 \Omega)$ 0 Ω : 100 m Ω or less |
| External Visual | AEC-Q200-REV D-Test 9 MIL-STD-883 Method 2009 | Electrical test not required. Inspect device construction, marking and workmanship. | |
| Physical Dimension | AEC-Q200-REV D-Test 10 JESD22 Method JB-100 | Verify physical dimensions to the applicable device detail spec. Note: User(s) and Suppliers spec. Electrical test not required. | |
| Resistance to Solvents | AEC-Q200-REV D-Test 12 MIL-STD-202 Method 215 | a: Isopropyl Alcohol : Mineral Spirits = 1:3 b: Terpene Defluxer (Bioact EC-7R) c: Deionized water : Propylene Glycol Monomethyl Ether : monoethanolamine = 42:1:1 | Marking and protective layer cannot be detached |
| Mechanical Shock | AEC-Q200-REV D-Test 13 MIL-STD-202 Method 213 | Wave Form: Tolerance for half sine shock pulse. Peak value is 100 grams. Normal duration (D) is 6 ms. | $\pm (1 \% + 0.1 \Omega)$ 0 Ω : 50 m Ω or less |
| Vibration | AEC-Q200-REV D-Test 14 MIL-STD-202 Method 204 | 5 grams for 20 min., 12 cycles each of 3 orientations. Note: Test from 10-2000 Hz. | $\pm (1 \% + 0.1 \Omega)$ 0 Ω : 50 m Ω or less |
| Resistance to Soldering Heat | AEC-Q200-REV D-Test 15 MIL-STD-202 Method 210 | Condition B: Immerse the specimens in and eutectic solder at 260 \pm 5 °C for 10 \pm 1 S. | 1 %: $\pm (0.5 \% + 0.05 \Omega)$ 5 %: $\pm (1 \% + 0.1 \Omega)$ 0201: $\pm (2 \% + 0.1 \Omega)$ 0 Ω : 50 m Ω or less |
| Thermal Shock | AEC-Q200-REV D-Test 16 MIL-STD-202 Method 107 | -55 °C / +155 °C. Note: Number of cycles required: 300, Maximum transfer time: 20 seconds, Dwell time: 15 minutes. Air to Air. | $\pm (1 \% + 0.1 \Omega)$ 0201: $\pm (2 \% + 0.1 \Omega)$ 0 Ω : 50 m Ω or less |
| ESD | AEC-Q200-REV D-Test 17 | Verify the voltage setting at 500 V | $\pm (1 \% + 0.1 \Omega)$ 0201: $\pm (2 \% + 0.1 \Omega)$ |
| Solderability | AEC-Q200-REV D-Test 18 J-STD-002 | Method B, aging 4 hours at 155 °C dry heat Lead-free solder bath at 245 \pm 3 °C Dipping time: 3 \pm 0.5 seconds | > 95 % area covered with tin |
| Flammability | AEC-Q200-REV D-Test 17 UL-94 | V-0 or V-1 are acceptable. Electrical test not required. | V-0 or V-1 |
| Board Flex (Bending) | AEC-Q200-REV D-Test 21 | 3 mm deflection (0201~1210) 2 mm deflection (2010~2512) | 1 %: $\pm (0.5 \% + 0.05 \Omega)$ 5 %: $\pm (1 \% + 0.1 \Omega)$ 0201: $\pm (1 \% + 0.1 \Omega)$ 0 Ω : 50 m Ω or less |
| Terminal Strength (SMD) | IEC 60115-1 4.32 | Force of 1.02 kg for 10 \pm 1 seconds. Remarks: 0402, 0.51 kg Remarks: 0201, N/A | $\pm (0.5 \% + 0.05 \Omega)$ 0 Ω : 50 m Ω or less |

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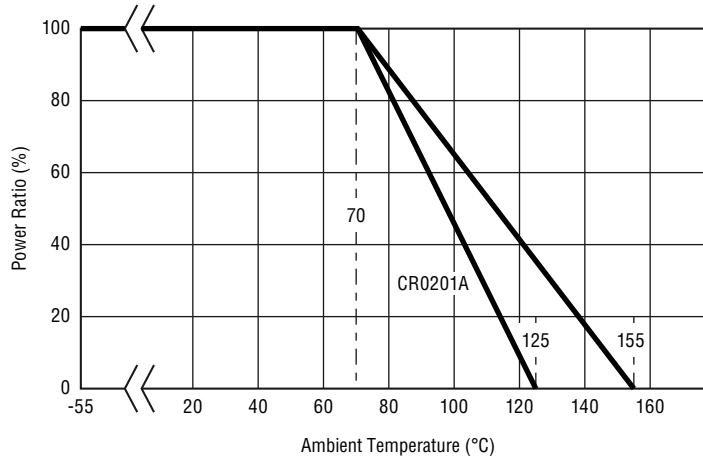
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CR-A Series - AEC-Q200 Compliant Chip Resistors

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Derating Curve



Packaging Dimensions (Conforms to EIA RS-481A)

| Model | Tape Type | A | B | W | F | E | P1 | P2 | P0 | T |
|---------|-------------------------------|---|---|--|---|---|---|---|---|---|
| CR0201A | Paper Tape (2 mm pitch) | $\frac{0.37 \pm 0.05}{(.010 \pm .002)}$ | $\frac{0.67 \pm 0.10}{(.026 \pm .004)}$ | | | | $\frac{2.00 \pm 0.10}{(.079 \pm .004)}$ | $\frac{2.00 \pm 0.05}{(.079 \pm .002)}$ | | $\frac{0.37 \pm 0.10}{(.015 \pm .004)}$ |
| CR0402A | | $\frac{0.70 \pm 0.05}{(.028 \pm .002)}$ | $\frac{1.20 \pm 0.05}{(.047 \pm .002)}$ | | | | $\frac{2.00 \pm 0.10}{(.079 \pm .004)}$ | $\frac{0.45 \pm 0.10}{(.018 \pm .004)}$ | | |
| CR0603A | Paper Tape (4 mm pitch) | $\frac{1.10 \pm 0.10}{(.043 \pm .004)}$ | $\frac{1.90 \pm 0.10}{(.075 \pm .004)}$ | $\frac{8.00 \pm 0.20}{(.315 \pm .008)}$ | $\frac{3.50 \pm 0.05}{(.138 \pm .002)}$ | $\frac{1.75 \pm 0.10}{(.069 \pm .004)}$ | $\frac{4.00 \pm 0.10}{(.157 \pm .004)}$ | $\frac{2.00 \pm 0.05}{(.079 \pm .002)}$ | $\frac{4.00 \pm 0.10}{(.157 \pm .004)}$ | $\frac{0.64 \pm 0.10}{(.025 \pm .004)}$ |
| CR0805A | | $\frac{1.65 \pm 0.15}{(.065 \pm .006)}$ | $\frac{2.40 \pm 0.20}{(.094 \pm .008)}$ | | | | | | | $\frac{0.84 \pm 0.10}{(.033 \pm .004)}$ |
| CR1206A | | $\frac{2.00 \pm 0.15}{(.079 \pm .006)}$ | $\frac{3.60 \pm 0.20}{(.142 \pm .008)}$ | | | | | | | $\frac{0.84 \pm 0.10}{(.033 \pm .004)}$ |
| CR1210A | | $\frac{2.80 \pm 0.20}{(.110 \pm .008)}$ | $\frac{3.60 \pm 0.20}{(.142 \pm .008)}$ | | | | | | | $\frac{0.84 \pm 0.10}{(.033 \pm .004)}$ |
| CR2010A | Embossed Tape (4 mm pitch) | $\frac{2.80 \pm 0.20}{(.110 \pm .008)}$ | $\frac{5.30 \pm 0.20}{(.209 \pm .008)}$ | $\frac{12.00 \pm 0.20}{(.472 \pm .008)}$ | $\frac{5.50 \pm 0.05}{(.217 \pm .002)}$ | | | | | $\frac{0.85 \pm 0.15}{(.033 \pm .006)}$ |
| CR2512A | | $\frac{3.60 \pm 0.20}{(.142 \pm .008)}$ | $\frac{6.90 \pm 0.20}{(.272 \pm .008)}$ | | | | | | | $\frac{0.85 \pm 0.15}{(.033 \pm .006)}$ |

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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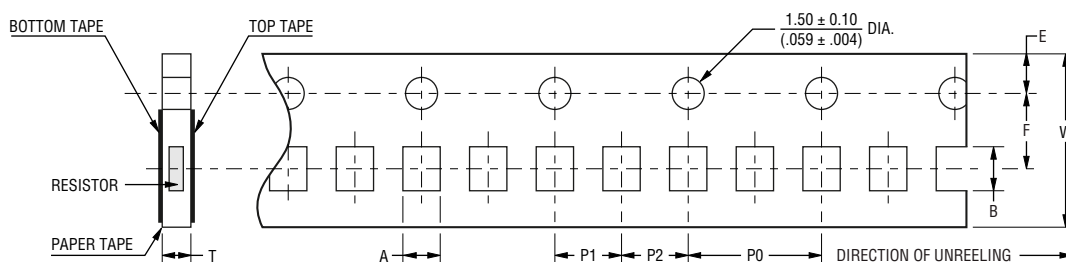
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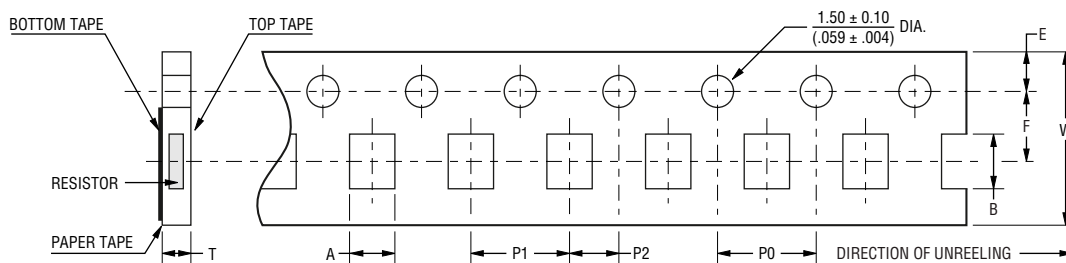
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Packaging Dimensions (Conforms to EIA RS-481A)

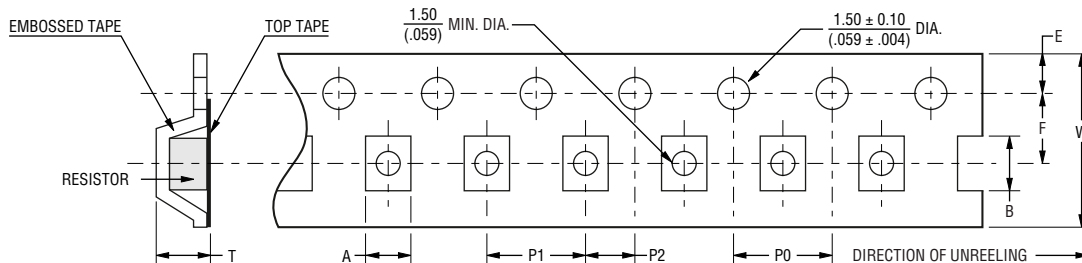
PAPER TAPE (2 mm PITCH)



PAPER TAPE (4 mm PITCH)



EMBOSSED TAPE (4 mm PITCH)



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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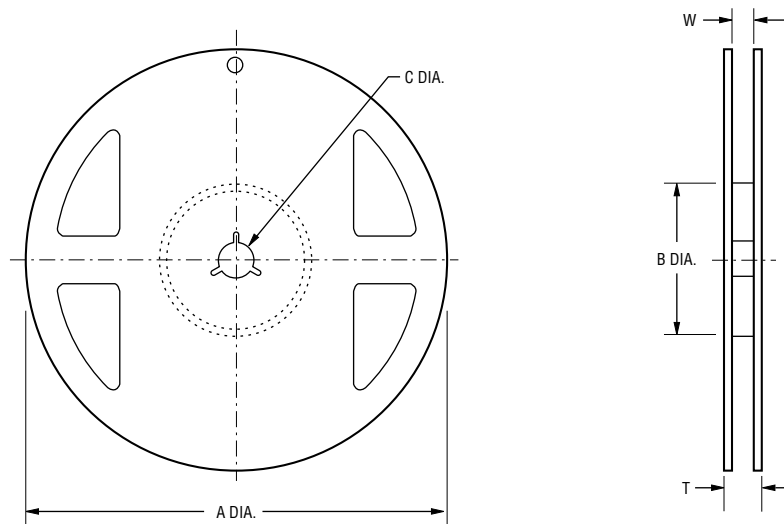
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CR-A Series - AEC-Q200 Compliant Chip Resistors



Packaging Dimensions (Conforms to EIA RS-481A)



| Model | Packaging Quantity | A | B | C | W | T |
|---------|--------------------|-------------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| CR0201A | 10K pcs/reel | | | | | |
| CR0402A | | | | | | |
| CR0603A | 5K pcs/reel | 178 ± 2.0 $(7.008 \pm .079)$ | 60 ± 1.0 $(2.362 \pm .039)$ | 13.0 ± 1.0 $(.512 \pm .039)$ | 9.0 ± 1.0 $(.354 \pm .039)$ | 11.5 ± 1.0 $(.453 \pm .039)$ |
| CR0805A | | | | | | |
| CR1206A | | | | | | |
| CR1210A | | | | | | |
| CR2010A | 4K pcs/reel | 178 ± 2.0 $(7.008 \pm .079)$ | 60 ± 0.5 $(2.362 \pm .020)$ | 13.0 ± 0.5 $(.512 \pm .020)$ | 13.0 ± 1.0 $(.512 \pm .039)$ | 15.5 ± 1.0 $(.610 \pm .039)$ |
| CR2512A | | | | | | |

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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CR-A Series - AEC-Q200 Compliant Chip Resistors

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How to Order

CR 0603 A F X - 1002 E LF

Model

(CR = Fixed Resistor)

Size

0201 = 0201 size
0402 = 0402 size
0603 = 0603 size
0805 = 0805 size
1206 = 1206 size
1210 = 1210 size
2010 = 2010 size
2512 = 2512 size

Feature

A = AEC-Q200 Compliant

Resistance Tolerance

F = $\pm 1\%$
J = $\pm 5\%$

TCR (ppm/°C) – See Electrical Characteristics Chart

X = ± 100
W = ± 200
Z = ± 400
/ = Used for zero Ω (jumper) and values from 1 Ω through 9.76 Ω .

Resistance Value

For 1% Tolerance:

<100 Ω "R" represents decimal point (example: 24R3 = 24.3 Ω).

>100 Ω First three digits are significant, fourth digit represents number of zeros to follow (example: 8252 = 82.5K Ω).

For 5% Tolerance:

<10 Ω "R" represents decimal point (example: 4R7 = 4.7 Ω).

>10 Ω First two digits are significant, third digit represents number of zeros to follow (example: 474 = 470K Ω).

Packaging

G = Paper Tape (10,000 pcs.) on 7" Reel – CR0201A, CR0402A
E = Paper Tape (5,000 pcs.) on 7" Reel – CR0603A, CR0805A, CR1206A, CR1210A
E = Embossed Tape (4,000 pcs) on 7" Reel – CR2010A, CR2512A

Termination

LF = Tin-plated (RoHS Compliant)

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CR-A Series - AEC-Q200 Compliant Chip Resistors

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Symbol for E96 Series Nominal Resistance Value

| Symbol | E96 | Symbol | E96 | Symbol | E96 | Symbol | E96 |
|--------|-----|--------|-----|--------|-----|--------|-----|
| 01 | 100 | 25 | 178 | 49 | 316 | 73 | 562 |
| 02 | 102 | 26 | 182 | 50 | 324 | 74 | 576 |
| 03 | 105 | 27 | 187 | 51 | 332 | 75 | 590 |
| 04 | 107 | 28 | 191 | 52 | 340 | 76 | 604 |
| 05 | 110 | 29 | 196 | 53 | 348 | 77 | 619 |
| 06 | 113 | 30 | 200 | 54 | 357 | 78 | 634 |
| 07 | 115 | 31 | 205 | 55 | 365 | 79 | 649 |
| 08 | 118 | 32 | 210 | 56 | 374 | 80 | 665 |
| 09 | 121 | 33 | 215 | 57 | 383 | 81 | 681 |
| 10 | 124 | 34 | 221 | 58 | 392 | 82 | 698 |
| 11 | 127 | 35 | 226 | 59 | 402 | 83 | 715 |
| 12 | 130 | 36 | 232 | 60 | 412 | 84 | 732 |
| 13 | 133 | 37 | 237 | 61 | 422 | 85 | 750 |
| 14 | 137 | 38 | 243 | 62 | 432 | 86 | 768 |
| 15 | 140 | 39 | 249 | 63 | 442 | 87 | 787 |
| 16 | 143 | 40 | 255 | 64 | 453 | 88 | 806 |
| 17 | 147 | 41 | 261 | 65 | 464 | 89 | 825 |
| 18 | 150 | 42 | 267 | 66 | 475 | 90 | 845 |
| 19 | 154 | 43 | 274 | 67 | 487 | 91 | 866 |
| 20 | 158 | 44 | 280 | 68 | 499 | 92 | 887 |
| 21 | 162 | 45 | 287 | 69 | 511 | 93 | 909 |
| 22 | 165 | 46 | 294 | 70 | 523 | 94 | 931 |
| 23 | 169 | 47 | 301 | 71 | 536 | 95 | 953 |
| 24 | 174 | 48 | 309 | 72 | 549 | 96 | 976 |

Symbol for Multipliers

| Symbol | A | B | C | D | E | F | G | H | X | Y | Z |
|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| Multiplier | 10 ⁰ | 10 ¹ | 10 ² | 10 ³ | 10 ⁴ | 10 ⁵ | 10 ⁶ | 10 ⁷ | 10 ⁻¹ | 10 ⁻² | 10 ⁻³ |

Marking Explanation



±5 % (E24): CR0603A / CR0805A / CR1206A / CR1210A / CR2010A / CR2512A

Resistance value is expressed by 3 digits. The first two digits represent the significant figures of nominal resistance value in Ω. And the third digit represents exponent for base of 10.

EX: 102 = 10 x 10² = 1000 Ω = 1K Ω

±1 % (E96): CR0805A / CR1206A / CR1210A / CR2010A / CR2512A

Resistance value is expressed by 3 digits. The first two digits represent the significant figures of nominal resistance value in Ω. And the third digit represents exponent for base of 10.

EX: 102 = 10 x 10² = 1000 Ω = 1K Ω



±1 % (E96): CR0603A

When the marking space is too small in such small-sized resistors as CR0603A, the marking cannot be made by 4 digits and may be made by two digits combined with one English capital.

EX: 01A = 100 x 10⁰ = 100 Ω

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REV. 08/21

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Users should verify actual device performance in their specific applications.

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