

Features

- Ultra-tight tolerance
- Wide resistance range
- RoHS compliant*
- Four package sizes available

Applications

- Current sense
- Precision circuits
- Medical equipment**
- Printers
- Automation equipment
- Navigation equipment

CRT Series - Thin Film Precision Chip Resistors

Electrical Characteristics

Characteristic	Model CRT0402	Model CRT0603	Model CRT0805	Model CRT1206
Power Rating @ 70 °C	1/16 watt	1/10 watt	1/8 watt	1/4 watt
Operating Temperature Range	-55 to +155 °C			
Derated to Zero Load at	+155 °C			
Maximum Working Voltage	25 V	75 V	150 V	200 V
Maximum Overload Voltage	50 V	150 V	300 V	400 V
Resistance Range (E-96 + E-24 Values)	(See Standard Values Table)			
Temperature Coefficient of Resistance (TCR)	2 to 50 PPM/°C (See Value - TCR Table on Page 2)			

Environmental Characteristics

Specification	Test (MIL STD 202)	Limit (ΔR) (Tol. ≤ 0.05 %)	Limit (ΔR) (Tol. > 0.05 %)
Short Time Overload	2.5 x Max. Operating Voltage for 5 seconds	±0.05 %	±0.2 %
Load Life	1000 Hours at Rated Power	±0.05 %	±0.2 %
Humidity (Steady State)	Method 103B	±0.05 %	±0.3 %
Thermal Shock	Method 107	±0.05 %	±0.3 %
Solderability	Method 208H		
Resistance to Soldering Heat	Method 210E	±0.05 %	±0.2 %

How to Order

CRT 0603 - C V - 1003 E LF

Model
(CRT = Thin Film Precision Chip Resistor

Size
0402
0603
0805
1206

Resistance Tolerance
F = ±1 % B = ±0.1 %
D = ±0.5 % A = ±0.05 %
C = ±0.25 % P = ±0.01 %

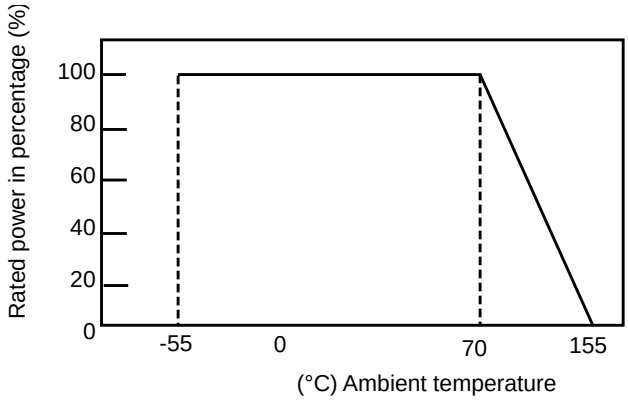
TCR (PPM/°C)
Z = ±50 V = ±5
Y = ±25 U = ±3
X = ±15 T = ±2
W = ±10

Resistance Value
<100 ohms: "R" represents decimal point (example: 24R3 = 24.3 ohms)
≥100 ohms: First three digits are significant, fourth digit represents number of zeroes to follow (example: 8252 = 82.5K ohms)

Packaging
G = Paper tape (10K pcs.) on 7˝ plastic reel (CRT0402)
E = Paper tape (5K pcs.) on 7˝ plastic reel (CRT0603, CRT0805, CRT1206)

Termination
LF = Tin-plated (RoHS compliant)

Derating Curve



WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.
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CRT Series - Thin Film Precision Chip Resistors

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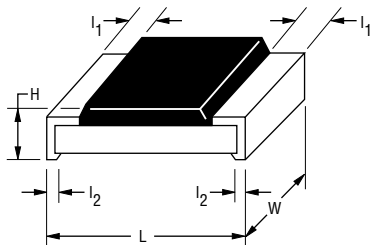
Value - TCR Table

Model	TCR		Resistance Tolerance (Code)					
	(PPM/°C)	(Code)	±0.01 % (P)	±0.05 % (A)	±0.1 % (B)	±0.25 % (C)	±0.5 % (D)	±1 % (F)
CRT0402	±2	(T)	49.9 to 4.99K Ω			N/A		
	±3	(U)						
	±5	(V)	49.9 to 4.99K Ω					
	±10	(W)	49.9 to 12K Ω		49.9 to 60K Ω			
	±15	(X)			49.9 to 69.8K Ω			
	±25	(Y)			10 to 255K Ω	4.7 to 511K Ω		
	±50	(Z)						
CRT0603	±2	(T)	24.9 to 15K Ω			N/A		
	±3	(U)						
	±5	(V)	24.9 to 15K Ω					
	±10	(W)	24.9 to 100K Ω	4.7 to 332K Ω				
	±15	(X)						
	±25	(Y)		4.7 to 332K Ω	4.7 to 1M Ω			
	±50	(Z)						
CRT0805	±2	(T)	24.9 to 30K Ω			N/A		
	±3	(U)						
	±5	(V)	24.9 to 30K Ω					
	±10	(W)	24.9 to 200K Ω	4.7 to 511K Ω	4.7 to 511K Ω			
	±15	(X)				4.7 to 1M Ω		
	±25	(Y)			4.7 to 1M Ω	1 to 1M Ω***		
	±50	(Z)						
CRT1206	±2	(T)	24.9 to 49.9K Ω			N/A		
	±3	(U)						
	±5	(V)	24.9 to 49.9K Ω					
	±10	(W)	24.9 to 499K Ω	4.7 to 1M Ω***				
	±15	(X)						
	±25	(Y)						
	±50	(Z)						

***Select part numbers listed below are not available:
CRT0805-DZ-1504ELF, CRT1206-CY-1R00ELF, CRT1206-DZ-1R74ELF, CRT1206-DZ-2004ELF

Chip Dimensions

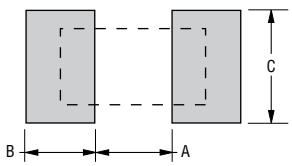
Dimension	Model CRT0402	Model CRT0603	Model CRT0805	Model CRT1206
L	1.00 ± 0.10 (0.040 ± 0.004)	1.55 ± 0.10 (0.061 ± 0.004)	2.00 ± 0.15 (0.079 ± 0.006)	3.05 ± 0.15 (0.120 ± 0.006)
W	0.50 ± 0.05 (0.020 ± 0.002)	0.80 ± 0.10 (0.031 ± 0.004)	1.25 ± 0.15 (0.049 ± 0.006)	1.55 ± 0.15 (0.061 ± 0.006)
H	0.30 ± 0.05 (0.012 ± 0.002)	0.45 ± 0.15 (0.018 ± 0.006)	0.55 ± 0.10 (0.022 ± 0.004)	0.55 ± 0.10 (0.022 ± 0.004)
I_1	0.20 ± 0.10 (0.008 ± 0.004)	0.30 ± 0.20 (0.012 ± 0.008)	0.30 ± 0.20 (0.012 ± 0.008)	0.42 ± 0.20 (0.017 ± 0.008)
I_2	0.20 ± 0.10 (0.008 ± 0.004)	0.30 ± 0.20 (0.012 ± 0.008)	0.40 ± 0.25 (0.016 ± 0.010)	0.35 ± 0.25 (0.014 ± 0.010)



DIMENSIONS: MM (INCHES)

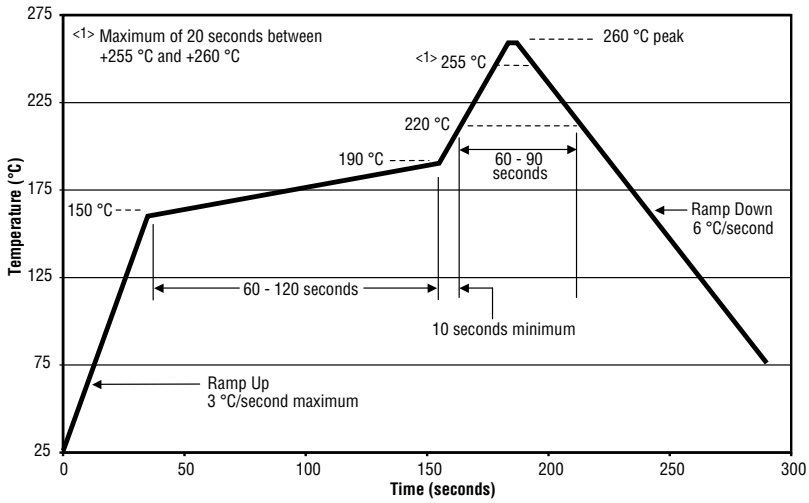
Recommended Land Pattern

Dimension	Model CRT0402	Model CRT0603	Model CRT0805	Model CRT1206
A	0.50 (0.020)	0.80 (0.031)	1.00 (0.039)	2.00 (0.079)
B	0.50 (0.020)	1.00 (0.039)	1.00 (0.039)	1.15 (0.045)
C	0.60 ± 0.20 (0.024 ± 0.008)	0.90 ± 0.20 (0.035 ± 0.008)	1.35 ± 0.20 (0.053 ± 0.008)	1.70 ± 0.20 (0.067 ± 0.008)



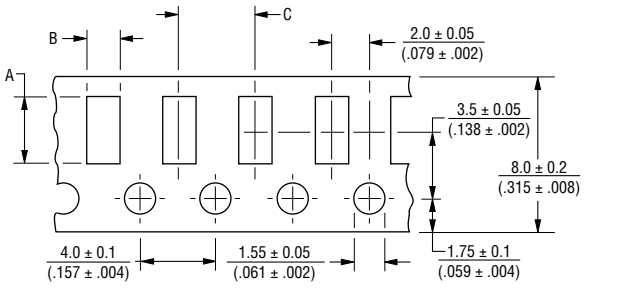
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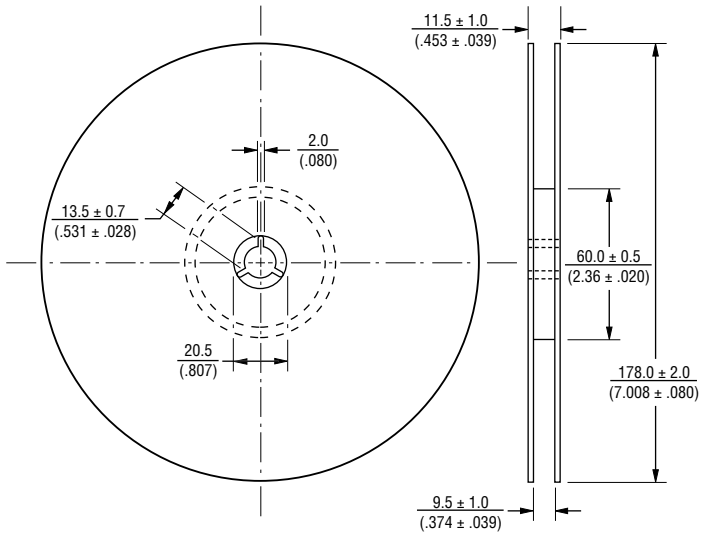
Soldering Profile



Packaging Dimensions - Tape

Dimension	Model CRT0402	Model CRT0603	Model CRT0805	Model CRT1206
A	1.16 ± 0.05 (0.046 ± 0.002)	1.90 ± 0.05 (0.075 ±0.002)	2.37 ± 0.05 (0.094 ± 0.002)	3.55 ± 0.05 (0.140 ± 0.002)
B	0.70 ± 0.05 (0.028 ± 0.002)	1.10 ± 0.05 (0.043 ± 0.002)	1.60 ± 0.05 (0.063 ± 0.002)	2.00 ± 0.05 (0.079 ± 0.002)
C	2.00 ± 0.05 (0.079 ± 0.002)	4.00 ± 0.10 (0.157 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)





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