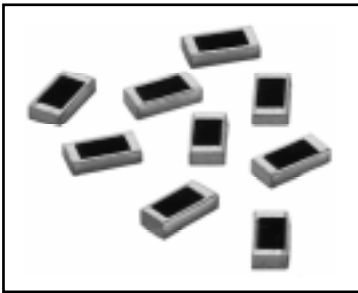




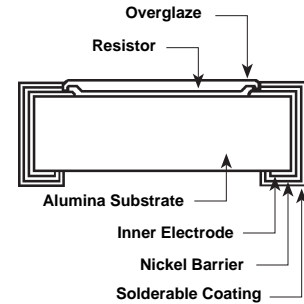
MODEL CRCW Thick Film Chip Resistors

Industrial



FEATURES

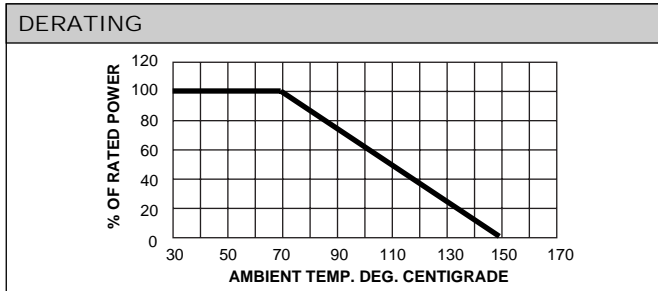
- Internationally standardized size
- Automatic placement compatibility
- Flow solderable
- Thick film resistance element
- Wraparound termination
- Inner electrode protection
- Operating temperature range is - 55°C to + 150°C
- User-trimmable versions available



STANDARD ELECTRICAL SPECIFICATIONS							DIMENSIONAL CONFIGURATIONS					
MODEL	RESISTANCE, TOLERANCE & TC RANGE				Power Rating and Max. Operating Voltage (@ + 70°C) (See derating curve)	Zero Ohm Jumper	[Numbers in brackets indicate millimeters]					
	E-24 Std. Res. Values		E-96 Std. Res. Values					A	B	C	D	E
	±5%	±5%	±1%	±1%								
	±300 PPM/°C	±200 PPM/°C	±300 PPM/°C	±100 PPM/°C								
CRCW 0402		10Ω to 1 Meg		10Ω to 1 Meg	1/16 W 50 V	.05Ω Max. 1 AMP Max.	.039 ± .002 [1.00 ± .05]	.019 ± .002 [.50 ± .05]	.014 ± .002 [.35 ± .05]	.008 ± .004 [.20 ± .10]	.010 ± .002 [.25 ± .05]	
CRCW 0603		10Ω to 1 Meg		10Ω to 1 Meg	1/16 W 50 V	.05Ω Max. 1 AMP Max.	.063 ± .006 [1.60 ± .15]	.031 + .006 - .002 [.80 + .15 - .05]	.020 ± .004 [.50 ± .10]	.012 ± .008 [.30 ± .20]	.012 ± .008 [.30 ± .20]	
CRCW 0805	1.0Ω to 9.1Ω and 1.02 Meg to 10 Meg	10Ω to 1 Meg	1.02 Meg to 10 Meg	10Ω to 1 Meg	(1/8 W)* 1/10 W 100 V	0.05Ω Max. 1 AMP Max.	.079 ± .006 [2.00 ± .15]	.049 ± .006 [1.25 ± .15]	.020 ± .006 [.50 ± .15]	.016 ± .010 [.40 ± .25]	.016 ± .010 [.40 ± .25]	
CRCW 1206	1.0Ω to 9.1Ω and 1.02 Meg to 10 Meg	10Ω to 2.2 Meg	1.02 Meg to 10 Meg	10Ω to 1 Meg	(1/4 W)* 1/8 W 200 V	0.05Ω Max. 2 AMP Max.	.126 ± .006 [3.20 ± .15]	.063 ± .006 [1.60 ± .15]	.022 ± .006 [.56 ± .15]	.020 ± .010 [.50 ± .25]	.020 ± .010 [.50 ± .25]	
CRCW 1210	3Ω to 9.1Ω and 1.02 Meg to 10 Meg	10Ω to 1 Meg	1.02 Meg to 10 Meg	10Ω to 1 Meg	1/4 W 200 V	0.05Ω Max. 4 AMP Max.	.126 ± .006 [3.20 ± .15]	.098 ± .006 [2.50 ± .15]	.022 ± .006 [.56 ± .15]	.020 ± .010 [.50 ± .25]	.020 ± .010 [.50 ± .25]	
CRCW 2010	3Ω to 9.1Ω and 1.02 Meg to 10 Meg	10Ω to 1 Meg	1.02 Meg to 10 Meg	10Ω to 1 Meg	1/2 W 200 V	.05Ω Max. 4 AMP Max.	.200 ± .006 [5.08 ± .15]	.100 ± .006 [2.54 ± .15]	.022 ± .006 [.56 ± .15]	.020 ± .010 [.50 ± .25]	.020 ± .010 [.50 ± .25]	
CRCW 2512	3Ω to 9.1Ω and 1.02 Meg to 10 Meg	10Ω to 1 Meg	1.02 Meg to 10 Meg	10Ω to 1 Meg	1 W 200 V	.05Ω Max. 4 AMP Max.	.250 ± .006 [6.35 ± .15]	.126 ± .006 [3.20 ± .15]	.022 ± .006 [.56 ± .15]	.020 ± .010 [.50 ± .25]	.020 ± .010 [.50 ± .25]	

* EIA Ratings are the lower ratings. Board layout and design must allow for additional heat. Component temperature must not exceed + 150°C.

ENVIRONMENTAL PERFORMANCE				
TEST	REQUIREMENT			SPECIFICATION
	0402 and 0603		0805 thru 2512	
	ALL TOLERANCES	± 1% TOLERANCE	± 5% TOLERANCE	
Thermal Shock	± (1.0% + 0.05Ω)	± (0.5% + 0.05Ω)	± (1.0% + 0.1Ω)	EIA-575, Para. 3.5
Short Time Overload	± (2.0% + 0.1Ω)	± (0.5% + 0.05Ω)	± (2.5% + 0.1Ω)	EIA-575, Para. 3.7
Low Temperature Operation	± (1.5% + 0.1Ω)	± (0.5% + 0.05Ω)	± (1.5% + 0.1Ω)	EIA-575, Para. 3.6
High Temperature Exposure	± (1.5% + 0.1Ω)	± (1.0% + 0.05Ω)	± (1.5% + 0.1Ω)	EIA-575, Para. 3.8
Moisture Resistance	± (1.0% + 0.05Ω)	± (0.5% + 0.05Ω)	± (3.0% + 0.1Ω)	EIA-575, Para. 3.10
Life	± (1.0% + 0.1Ω)	± (2.0% + 0.05Ω)	± (3.0% + 0.1Ω)	EIA-575, Para. 3.13
Effect of Soldering	± (1.0% + 0.05Ω)	± (0.25% + 0.05Ω)	± (3.0% + 0.1Ω)	EIA-575, Para. 3.9
Solderability and Leach Resistance	95% min. coverage of termination	95% min. coverage of termination	95% min. coverage of termination	EIA-575, Para. 3.12
Termination Adhesion	0.5 kg min.	0.5 kg min.	0.5 kg min.	AXIAL PULL (soldered-on #26 nailhead lead with .037" [.940mm] dia. head)



PART MARKING Per EIA-575

— Resistance code

(± 1% units = 4 digit value code)

(± 5% units = 3 digit value code)

(0402 not marked)

HOW TO ORDER

CRCW MODEL	XXXX SIZE	XXX or XXXX RESISTANCE VALUE CODE	X TOLERANCE	XXX* PACKAGING
0402 1210 0603 2010 0805 2512 1206	First two digits (three for "F" tolerance) are significant; last digit is the multiplier. Jumpers = 000.	F = ± 1% J = ± 5% (None for Jumpers.)	B02 = Bulk - 1,000 pieces per plastic bag. RT1 = Paper Tape - 5,000 pieces per reel. RT2 = Punched Plastic Tape - 5,000 pieces per reel. RT3 = Punched Plastic Tape - 10,000 pieces per reel (Contact factory). RT5 = Punched Paper Tape - 10,000 pieces per reel (Contact factory).	

* Contact factory for packaging on 2010 and 2512 models.

TAPE AND REEL SPECIFICATIONS Per EIA Std. RS-481

Reel

Reel Dimensions

Tape

(USER DIRECTION OF FEED) →

Trailer (Note 2) Components Leader (Note 1)

Tape Dimensions

MODEL	A	B
CRCW0402	.027 ± .002 [0.70 ± 0.05]	.047 ± .002 [1.20 ± 0.05]
CRCW0603	.043 ± .006 [1.10 ± 0.15]	.075 ± .008 [1.91 ± 0.20]
CRCW0805	.070 ± .005 [1.78 ± 0.13]	.100 ± .005 [2.54 ± 0.13]
CRCW1206	.080 ± .005 [2.03 ± 0.13]	.142 ± .005 [3.61 ± 0.13]
CRCW1210	.115 ± .005 [2.92 ± 0.13]	.142 ± .005 [3.61 ± 0.13]

Note 1. There shall be a leader of 230mm minimum which may consist of carrier and/or cover tape followed by a minimum of 160mm of carrier tape with sealed cover tape not to exceed 560mm combined total.

Note 2. There shall be a minimum of 40 empty component pockets sealed with cover tape.