

# Thick Film Chip Resistors



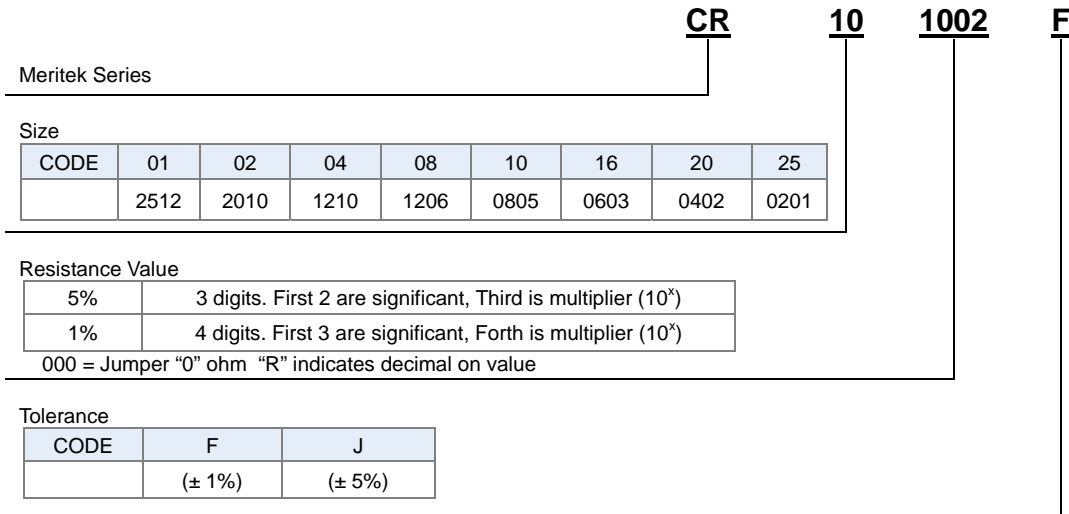
<b>CR Series</b>	<b>MERITEK</b>
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## Feature and Applications

- Excellent mechanical strength and electrical stability
- Ideal for pick and place machinery
- Stable high frequency characteristics
- Miniature, high board density
- Equivalent specification EIAJ- RC- 2690,
- EIAJ- RC- 1009B, EIA- RS- 481A



## Part Numbering System



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CR Series

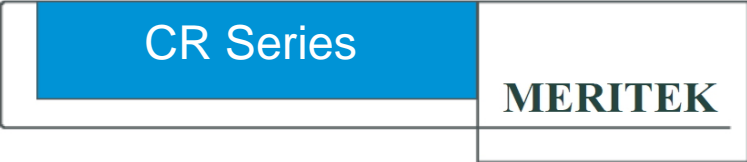
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## General Specifications

Resistance Range:  $\geq 1\Omega$

Type No	Rated Power at 70°C	Max. Working Voltage	Max. Overload Voltage	TCR (ppm / °C)	Resistance Range				Jumper Rated Current		Jumper Resistance Value	
					B ( $\pm 0.1\%$ ) E-24, E-96	D ( $\pm 0.5\%$ ) E-24, E-96	F ( $\pm 1\%$ ) E-24, E-96	G ( $\pm 2\%$ ), J ( $\pm 5\%$ ) E-24	J ( $\pm 5\%$ )	F ( $\pm 1\%$ )	J ( $\pm 5\%$ )	F ( $\pm 1\%$ )
CR25 (0201)	1/20W	25V	50V	-200 +400	--	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$	0.5A	0.5A	50mΩ MAX	35mΩ MAX
				$\pm 200$	--	$10\Omega \leq R \leq 10M\Omega$	$10\Omega \leq R \leq 10M\Omega$	$10\Omega \leq R \leq 10M\Omega$				
CR20 (0402)	1/16W	50V	100V	$\pm 100$	$100\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 10M\Omega$	$10\Omega \leq R \leq 20M\Omega$	1A	1.5A	50mΩ MAX	20mΩ MAX
				$\pm 200$	--	--	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$				
CR16 (0603)	1/10W	75V	150V	$\pm 100$	$100\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 10M\Omega$	$10\Omega \leq R < 20M\Omega$	1A	2A	50mΩ MAX	20mΩ MAX
				$\pm 200$	--	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$				
CR10 (0805)	1/8W	150V	300V	$\pm 100$	$100\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 10M\Omega$	$10\Omega \leq R \leq 20M\Omega$	2A	2.5A	50mΩ MAX	20mΩ MAX
				$\pm 200$	--	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$				
CR08 (1206)	1/4W	200V	400V	$\pm 100$	$100\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 10M\Omega$	$10\Omega \leq R \leq 20M\Omega$	2A	3.5A	50mΩ MAX	20mΩ MAX
				$\pm 200$	--	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$				
CR04 (1210)	1/2W	200V	400V	$\pm 100$	$100\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 10M\Omega$	$10\Omega \leq R \leq 20M\Omega$	2A	4A	50mΩ MAX	20mΩ MAX
				$\pm 200$	--	--	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$				
CR02 (2010)	3/4W	200V	400V	$\pm 100$	$100\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 10M\Omega$	2A	5A	50mΩ MAX	20mΩ MAX
				$\pm 200$	--	--	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$				
CR01 (2512)	1W	200V	400V	$\pm 100$	$100\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 10M\Omega$	2A	7A	50mΩ MAX	20mΩ MAX
				$\pm 200$	--	--	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$				
Operating Temperature Range				-55°C ~ +155°C (0201: -55°C ~ +125°C)								

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## General Specifications

Resistance Range: <math><1\Omega</math>

Type	Rate Power At 70°C	Max. Rated Current	Max. Overload Current	TCR (ppm / °C)	Resistance Range
					F (± 1%), G (± 2%), J (± 5%), E-24, E-96
CR20 (0402)	1/16W	1.58A	3.95A	±1500	25mΩ ≤ R < 37mΩ
				±1200	37mΩ ≤ R < 60mΩ
				± 600	60mΩ ≤ R < 200mΩ
				± 300	200mΩ ≤ R < 400mΩ
				± 250	400mΩ ≤ R < 600mΩ
				± 200	600mΩ ≤ R < 1000mΩ
CR16 (0603)	1/10W	3.16A	7.91A	±1500	10mΩ ≤ R < 37mΩ
				±1200	37mΩ ≤ R < 60mΩ
				±600	60mΩ ≤ R < 100mΩ
				±300	100mΩ ≤ R < 200mΩ
				±600	200mΩ ≤ R < 500mΩ
				±400	500mΩ ≤ R < 1000mΩ
CR10 (0805)	1/8W	3.53A	8.82A	±1500	10mΩ ≤ R < 19mΩ
				±1200	19mΩ ≤ R < 33mΩ
				±800	33mΩ ≤ R < 50mΩ
				±600	50mΩ ≤ R < 100mΩ
				±200	100mΩ ≤ R < 1000mΩ
CR08 (1206)	1/3W	5.77A	14.42A	±1500	10mΩ ≤ R < 19mΩ
				±1200	19mΩ ≤ R < 25mΩ
				±1000	25mΩ ≤ R < 50mΩ
				±600	50mΩ ≤ R < 100mΩ
				±200	100mΩ ≤ R < 1000mΩ
CR04 (1210)	1/2W	7.07A	17.67A	±1500	10mΩ ≤ R < 19mΩ
				±1000	19mΩ ≤ R < 25mΩ
				±700	25mΩ ≤ R < 50mΩ
				±400	50mΩ ≤ R < 100mΩ
				±200	100mΩ ≤ R < 1000mΩ
CR02 (2010)	3/4W	8.66A	21.65A	±1500	10mΩ ≤ R < 19mΩ
				±1200	19mΩ ≤ R < 25mΩ
				±900	25mΩ ≤ R < 50mΩ
				±500	50mΩ ≤ R < 100mΩ
				±200	100mΩ ≤ R < 1000mΩ
CR01 (2512)	1W	10A	25A	±1500	10mΩ ≤ R < 19mΩ
				±1200	19mΩ ≤ R < 25mΩ
				±900	25mΩ ≤ R < 50mΩ
				±500	50mΩ ≤ R < 100mΩ
				±200	100mΩ ≤ R < 1000mΩ
Operating Temperature Range				-55°C ~ +155°C (0201: -55°C ~ +125°C)	

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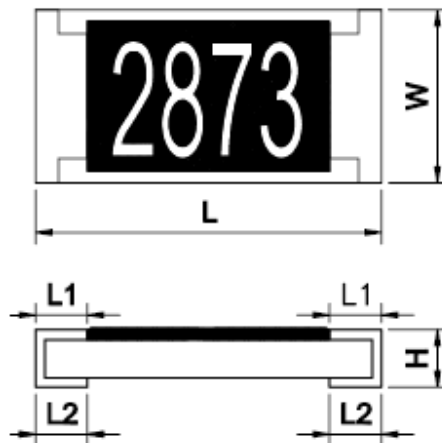
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## Dimensions

Resistance Range:  $\geq 1\Omega$

Type	DIMENSIONS IN MILLIMETERS (MM)				
	L	W	H	L1	L2
CR25 (0201)	0.60± 0.03	0.30± 0.03	0.23± 0.03	0.15± 0.05	0.15± 0.05
CR20 (0402)	1.00± 0.10	0.50± 0.05	0.30± 0.05	0.20± 0.10	0.25± 0.10
CR16 (0603)	1.60± 0.10	0.80± 0.10	0.45± 0.10	0.30± 0.15	0.30± 0.15
CR10 (0805)	2.00± 0.10	1.25± 0.10	0.50± 0.10	0.35± 0.20	0.35± 0.15
CR08 (1206)	3.05± 0.10	1.55± 0.10	0.55± 0.10/-0.05	0.45± 0.20	0.35± 0.15
CR04 (1210)	3.05± 0.10	2.55± 0.10	0.55± 0.10	0.50± 0.20	0.50± 0.20
CR02 (2010)	5.00± 0.20	2.50± 0.20	0.55± 0.10	0.60± 0.20	0.60± 0.20
CR01 (2512)	6.30± 0.20	3.20± 0.20	0.55± 0.10	0.60± 0.20	0.60± 0.20



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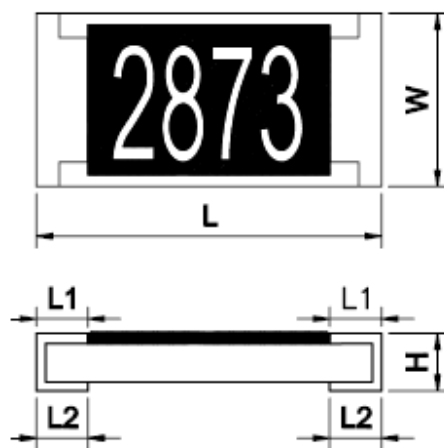
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## Dimensions

Resistance Range: <math><1\Omega</math>

Type	DIMENSIONS IN MILLIMETERS (MM)				
	L	W	H	L1	L2
CR20 (0402)	1.00± 0.10	0.50± 0.05	0.35± 0.10	0.25± 0.10	0.20± 0.15
CR16 (0603)	1.60± 0.10	0.80± 0.10	0.45± 0.10	0.25± 0.15	0.35± 0.15
CR10 (0805)	2.00± 0.10	1.25± 0.10	0.50± 0.10	0.35± 0.20	0.35± 0.20
CR08 (1206)	3.05± 0.10	1.55± 0.10	0.50± 0.10	0.45± 0.20	0.65± 0.15
CR04 (1210)	3.05± 0.10	2.55± 0.10	0.55± 0.10	0.50± 0.20	0.50± 0.20
CR02 (2010)	5.00± 0.20	2.50± 0.20	0.60± 0.10	0.65± 0.20	0.65± 0.20
CR01 (2512)	6.30± 0.20	3.20± 0.20	0.60± 0.10	0.65± 0.20	0.65± 0.20



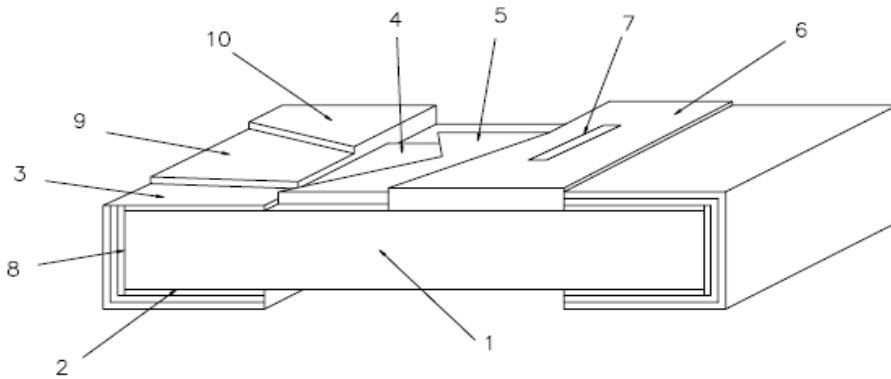
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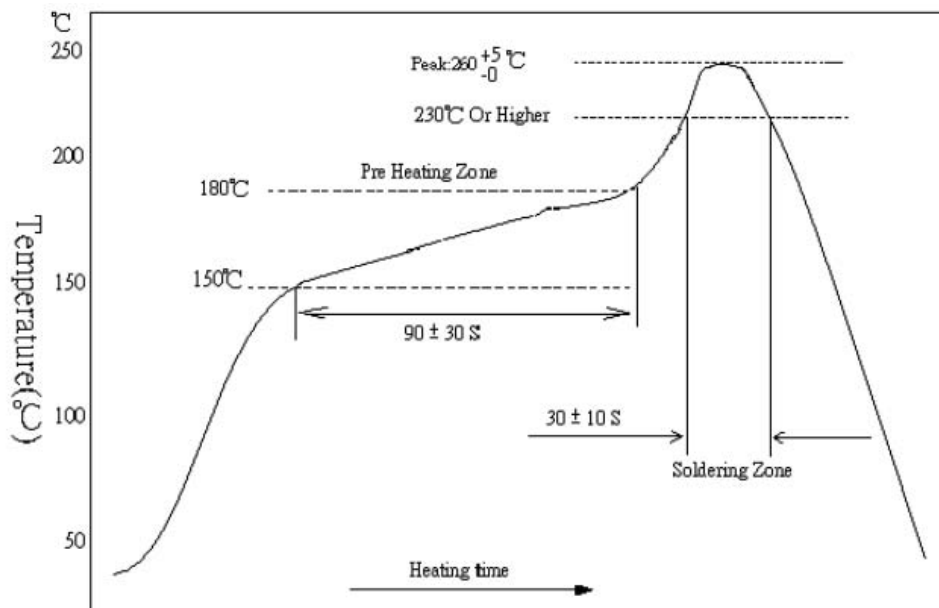
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## Structure Graph



1	Ceramic substrate	6	2 <sup>nd</sup> Protective coating
2	Bottom inner electrode	7	Marking
3	Top inner electrode	8	Terminal inner electrode
4	Resistive layer	9	Ni plating
5	1 <sup>st</sup> Protective coating	10	Sn plating

## Reflow Soldering Profile



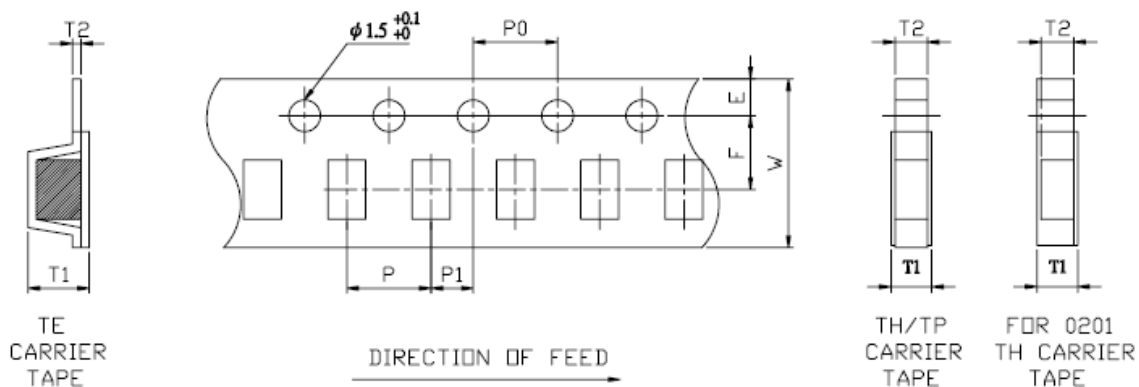
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## Tape Dimensions



Unit: mm

Type	A	B	W	E	F	T1	T2	P	P0	10 X P0	P1
CR25(0201)	0.68±0.03	0.38±0.03	8.00±0.10	1.75±0.10	3.50±0.05	0.45±0.10/-0	0.28±0.02	2.00±0.05	4.00±0.05	40.00±0.20	2.00±0.05
CR20(0402)	1.15±0.05	0.65±0.05	8.00±0.20	1.75±0.10	3.50±0.05	0.45±0.20/-0	0.45±0.05	2.00±0.10	4.00±0.05	40.00±0.20	2.00±0.05
CR16(0603)	1.80±0.10	1.00±0.10	8.00±0.20	1.75±0.10	3.50±0.05	0.60±0.20/-0	0.60±0.10	4.00±0.10	4.00±0.05	40.00±0.20	2.00±0.05
CR10(0805)	2.30±0.10	1.55±0.10	8.00±0.20	1.75±0.10	3.50±0.05	0.75±0.20/-0	0.75±0.10	4.00±0.10	4.00±0.05	40.00±0.20	2.00±0.05
CR08(1206)	3.50±0.20	1.90±0.20	8.00±0.20	1.75±0.10	3.50±0.05	0.75±0.20/-0	0.75±0.10	4.00±0.10	4.00±0.05	40.00±0.20	2.00±0.05
CR04(1210)	3.50±0.20	2.80±0.20	8.00±0.20	1.75±0.10	3.50±0.05	0.75±0.20/-0	0.75±0.10	4.00±0.10	4.00±0.05	40.00±0.20	2.00±0.05
CR02(2010)	5.50±0.20	2.80±0.20	12.00±0.20	1.75±0.10	5.50±0.05	0.85±0.15	0.23±0.15	4.00±0.10	4.00±0.05	40.00±0.20	2.00±0.05
CR01(2512)	6.70±0.20	3.40±0.20	12.00±0.20	1.75±0.10	5.50±0.05	0.85±0.15	0.23±0.15	4.00±0.10	4.00±0.05	40.00±0.20	2.00±0.05