

CRW-Series Power Chip Resistors

Sizes: 1210, 1216, 2010, 2040, 2512, 4020

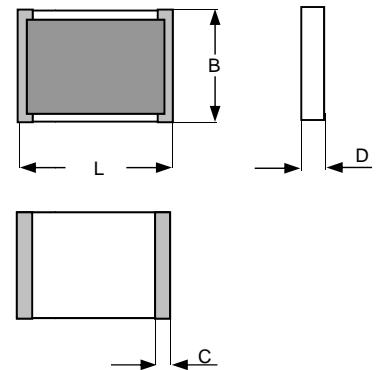
Features:

- Chip Resistors in thick film technology
- Contact areas Nickel-barrier / matte tin
- RF – versions with air-abrasive trimming
- Untrimmed version for improved pulse power rating
- Power mode with increased power rating available
- Suitable for high vacuum applications – no organics



Dimensions:

Sizes	L	B	D	C
1210	3.2 ^{+0.2/-0.05}	2.5 ^{+0.2/-0.05}	0.5 ^{+0.2/-0.1}	0.8 ^{±0.2}
1216	3.2 ^{+0.2/-0.05}	4.1 ^{+0.2/-0.05}	0.5 ^{+0.2/-0.1}	0.8 ^{±0.2}
2010	5.1 ^{+0.2/-0.05}	2.5 ^{+0.2/-0.05}	0.6 ^{+0.2/-0.1}	1.2 ^{±0.2}
2040	5.1 ^{+0.2/-0.05}	10.2 ^{+0.2/-0.05}	0.6 ^{+0.2/-0.1}	1.2 ^{±0.2}
2512	6.3 ^{+0.2/-0.05}	3.50 ^{+0.2/-0.05}	0.6 ^{+0.2/-0.1}	0.9 ^{±0.2}
4020	10.2 ^{+0.2}	5.1 ^{+0.2}	0.6 ^{+0.2/-0.1}	0.9 ^{±0.2}



L = Length, B = Width, D = Thickness, C = Width of wrap around (in mm)

Packaging:

Bulk in plastic bags – minimum quantity 100 pieces per value
 Blistertape acc. to IEC 60286-3 – minimum 500 pieces per value
 Reel diameter 180 mm or 330 mm

Ordering Data:

Type – value – tolerance – TCR – packaging
 Example: *CRW 1216 100 R ± 1% TK50 Tape 180 mm*

Untrimmed parts are indicated by the extension “NA” in the order code:
 Type – value – tolerance – NA – TCR - packaging
 Example: *CRW 1216 100 R ± 5% NA TK50 Tape 180 mm*

If no requirements for TCR and taping are given, the standard value (highest value in table) will be supplied and packaging is bulk.

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Technical data – depending on size:

Size	1210	1216	2010	2040	2512	4020
Power rating P_{70} (W) ¹⁾ ($P_{155} = 0$ W)	0.35	0.5	0.75	2,0 (3,0) ²⁾	1,0 (2,0) ²⁾	2,0 (3,0) ²⁾
Working voltage U_{-} , U_{eff} (V) ³⁾ Standard (trimmed) NA (untrimmed, Tol. $\geq 5\%$)	200 600	200 600	250 900	250 900	300 1200	500 1500

Ranges ⁴⁾ / Tolerances / TCR ⁵⁾						
0R1 – < 1R	TC250 5/10/20%	TC250 5/10/20%	TC250 5/10/20%	TC250 5/10/20%	TC250 5/10/20%	TC250 5/10/20%
1R – < 10R	TC100/250 1/.../20%	TC100/250 1/.../20%	TC100/250 1/.../20%	TC100/250 1/.../20%	TC100/250 1/.../20%	TC100/250 1/.../20%
10R – < 100R	TC100 1/.../20%	TC100 1/.../20%	TC100 1/.../20%	TC100 1/.../20%	TC100 1/.../20%	TC100 1/.../20%
100R – 100k	TC50/100 1/.../20%	TC50/100 1/.../20%	TC50/100 1/.../20%	TC50/100 1/.../20%	TC50/100 0.5/.../20%	TC50/100 0.5/.../20%
100k – 100M	TK50/100 1/.../20%	TK50/100 1/.../20%	TK25/50/100 1/.../20%	TK25/50/100 1/.../20%	CRM-Series	CRM-Series

¹⁾ At continuous power dissipation the dimensions of solder-pads have to secure sufficient heat-conduction.

²⁾ Power Mode (**2W** at CRW2512 or **3W** at CRW4020/2040): The temperature of the resistor element is higher than in standard mode! Higher power rating requires an adequate heat removal (e.g. increased solder pads or Cu-thicknesses). The user has to guarantee, that solder joints will not run over their load limit. The resistor must not exceed the specified operating temperature range.

³⁾ Continuous operating voltage: $U = \sqrt{P \cdot R}$

⁴⁾ Available resistance values: E6, E12, E24, E48, E96 and intermediate values

⁵⁾ TCR: in ppm/K; +25°C...+125°C; TCR lower than standard TCR-value (highest value): +25°C...+85°C

Zero-Ohm-Jumper: < 50 mOhm

Technical data – general:

Operating temperature range	-55°C ... +155°C
Climatic category acc. to EN 60068-1	55/155/56
Solderability acc EN 60068-2-58 (lead free and lead containing)	250°C 3 s
Max. soldering temperature acc. EN 60068-2-58	260°C 10 s

Long term stability	10R – 100M	<10R
Storage 125°C/1000h	<0.5%	<1%
Storage 155°C/1000h	<1%	<2%
Load P_{70} /70°C/1000h	<1%	<2%
Short term overload	<0.25%	<0.5%
Damp heat (56d/40°C/96%)	<0.5%	<1%

Data not specified according EN 140401-802 (CECC 40401-802)