CRW Series
Power Chip Resistors

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

Features:

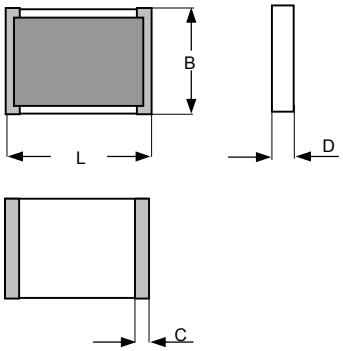
- Chip Resistors in thick film technology
- Contact areas Nickel-barrier / matte tin
- RF – versions with air-abrasive trimming
- Improved pulse power rating untrimmed
- Power mode available
- Suitable for high vacuum applications – no organics

RoHS / ELV conform 2002/95/EC 2000/53/EC

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 $^{\pm 0.2}$
1216	3.2 $^{+0.2/-0.05}$	4.1 $^{+0.2/-0.05}$	0.5 $^{+0.2/-0.1}$	0.8 $^{\pm 0.2}$
2010	5.1 $^{+0.2/-0.05}$	2.5 $^{+0.2/-0.05}$	0.6 $^{+0.2/-0.1}$	1.2 $^{\pm 0.2}$
2040	5.1 $^{+0.2/-0.05}$	10.2 $^{+0.2/-0.05}$	0.6 $^{+0.2/-0.1}$	1.2 $^{\pm 0.2}$
2512	6.3 $^{+0.2/-0.05}$	3.50 $^{+0.2/-0.05}$	0.6 $^{+0.2/-0.1}$	0.9 $^{\pm 0.2}$
4020	10.2 $^{+0.2}$	5.1 $^{+0.2}$	0.6 $^{+0.2/-0.1}$	0.9 $^{\pm 0.2}$

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 1000 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 (M) [5]	4020 (M) [5]
Power rating P_{70} (W) [1] (P_{155} = 0 W)	0.35	0.5	0.75	2.0 / 3.0 [3]	1.0 / 2.0 [3]	2.0 / 3.0 [3]
Working voltage [4] U_, U_{eff} (V) trimmed untrimmed (Tol. ≥ 5%)	200 600	200 600	250 900	250 900	300 (1000) 1200 (2000)	500 (4000) 1500 (6000)

Ranges / Tolerances / TCR [2]						
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 – < 100R	TC100/250 1/…/20%	TC100/250 1/…/20%	TC100/250 1/…/20%	TC100/250 1/…/20%	TC100/250 1/…/20%	TC100/250 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%	TK25/50/100 1/.../20%	TK25/50/100 1/.../20%

[1] At continuous power dissipation the dimensions of solder-pads have to secure sufficient heat-conduction.
[2] TC/50: Temperature range + 25°C...+ 125°C
[3] Power Mode: 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 Copper 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.
[4] Continuous operating voltage: U = √(P*R)
[5] M at 2512/4020: Meander structure with higher working voltage in brackets.

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)

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