

# CRM-Series Precision High-Value Chip Resistors

Sizes: 0805, 1206, 1210, 2010, 2512, 4020

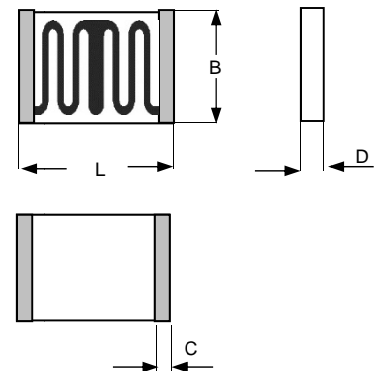
### Features:

- Meander structured high value chip resistors in thick film technology
- Low temperature and voltage dependency
- Suitable for high vacuum applications – no organics
- Termination: Nickel-barrier / matte Tin
- Glass passivated resistor element
- High working voltage up to 6000 V



### Dimensions:

Size	L	B	D	C
0805	2.00 <sup>+0.15/-0.05</sup>	1.25 <sup>+0.15/-0.05</sup>	0.40 <sup>+0.15/-0.05</sup>	0.3 <sup>+0.2/-0.1</sup>
1206	3.20 <sup>+0.15/-0.05</sup>	1.50 <sup>+0.2/-0.05</sup>	0.40 <sup>+0.15/-0.05</sup>	0.3 <sup>+0.2/-0.1</sup>
1210	3.20 <sup>+0.15/-0.05</sup>	2.50 <sup>+0.2/-0.05</sup>	0.50 <sup>+0.15/-0.05</sup>	0.8 <sup>±0.2</sup>
2010	5.10 <sup>+0.15/-0.05</sup>	2.50 <sup>+0.2/-0.05</sup>	0.60 <sup>+0.20/-0.1</sup>	1.2 <sup>±0.2</sup>
2512	6.30 <sup>+0.15/-0.05</sup>	3.50 <sup>+0.2/-0.05</sup>	0.60 <sup>+0.15/-0.05</sup>	0.9 <sup>±0.2</sup>
4020	10.20 <sup>+0.20/-0.05</sup>	5.10 <sup>+0.2/-0.05</sup>	0.60 <sup>+0.20/-0.1</sup>	0.9 <sup>±0.2</sup>



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

### Packaging:

Bulk in plastic bags – minimum quantity 30 pieces per value  
 Embossed carrier tape 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: CRM 2512 10G ±10% TCR 100 Tape 180 mm

Untrimmed parts are indicated by the extension “NA” in the order code:  
 Type – value – tolerance – NA – TCR - packaging  
 Example: CRM 2512 10G ±10% NA TCR 100 Tape 180 mm

If no requirements for TCR and taping are given, the standard TCR value (highest value in table) will be supplied and packaging is bulk. Standard measuring voltage is 10V. Different voltages on request and agreement (specify explicitly).

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## Technical data – depending on size:

Size	0805	1206	1210	2010	2512	4020
Power rating P <sub>70</sub> (mW) (P <sub>155</sub> = 0 mW)	125	250	350	500	1000 <sup>1)</sup>	2000 <sup>1)</sup>
Working voltage U <sub>-</sub> , U <sub>eff</sub> (V) Standard (trimmed) NA (untrimmed, Tol. ≥ 5%)	200 400	600 1000	800 1200	1500 2000	2500 3500	4000 6000

Ranges / Tolerances / TCR <sup>2)</sup> / VCR <sup>3)</sup>						
100K – 100M	0.5/1/2/5/10% TC25/50/100 100 ppm/V	0.5/1/2/5/10% TC25/50/100 50 ppm/V	0.5/1/2/5/10% TC25/50/100 50 ppm/V	0.5/1/2/5/10% TC25/50/100 25 ppm/V	0.5/1/2/5/10% TC25/50/100 10 ppm/V	0.25/ ... /10% TC25/50/100 5 ppm/V
>100M – 1G	2/5/10/20% TC50/100/250 250 ppm/V	2/5/10/20% TC50/100/250 100 ppm/V	1/2/5/10/20% TC25/50/100 50 ppm/V	1/2/5/10/20% TC25/50/100 50 ppm/V	1/2/5/10/20% TC25/50/100 25 ppm/V	0.5/ ... /20% TC25/50/100 10 ppm/V
>1G – 10G	5/10/20% TC250/500 500 ppm/V	5/10/20% TC100/250 250 ppm/V	2/5/10/20% TC25/50/100 100 ppm/V	2/5/10/20% TC25/50/100 100 ppm/V	2/5/10/20% TC25/50/100 50 ppm/V	1/2/5/10/20% TC25/50/100 10 ppm/V
>10G – 100G	10/20/30% TC1000/2000 1000 ppm/V	10/20/30% TC500/1000 500 ppm/V	5/10/20/30% TC500/1000 500 ppm/V	5/10/20/30% TC250/500 250 ppm/V	5/10/20/30% TC100/250/500 100 ppm/V	2/5/10/20/30% TC50/100/250 50 ppm/V

<sup>1)</sup> At continuous power dissipation the dimensions of solder-pads have to secure a sufficient heat removal

<sup>2)</sup> TCR: in ppm/K; +25°C...+125°C; TCR lower than standard TCR (highest value) or value >100G: +25°C...+85°C

<sup>3)</sup> VCR: typical values, all negative, not for all TCR values available

Lower values of tolerance, TCR and VCR on request and agreement only

## Technical data – general:

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

Long term stability	< 1G	< 10G	≥ 10G
Load Life 70°C/1000h	< 0.25%	< 0.5%	< 1%
Storage 125°C/1000h	< 0.5%	< 1%	< 2%
Max voltage/1000h	< 0.5%	< 1%	< 2%

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