

CHR-Series

Chip Resistors, Non-magnetic

Sizes: 0402, 0504, 0603, 0805, 1206, 2010, 2512, 4020

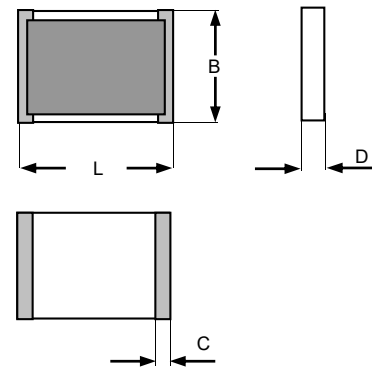


Features:

- Chip Resistors in thick film technology
- Non-magnetic
- Pt/Ag terminations for conductive gluing and soldering
- RF-versions untrimmed
- Suitable for high vacuum applications – no organics
- High temperature application possible (up to 300°C as CHR-HT)

Dimensions:

| Size | L | B | D | C |
|------|-------------------|------------------|------------------|----------------|
| 0402 | 1.04 ±0.05 | 0.5 ±0.05 | 0.3 ±0.05 | 0.1 +0.1/-0.05 |
| 0504 | 1.25 +0.15/-0.05 | 1.0 +0.15/-0.05 | 0.3 +0.15/-0.05 | 0.2 +0.2/-0.1 |
| 0603 | 1.5 +0.15/-0.05 | 0.8 +0.15/-0.05 | 0.4 +0.15/-0.05 | 0.2 +0.2/-0.1 |
| 0805 | 2.0 +0.15/-0.05 | 1.25 +0.15/-0.05 | 0.4 +0.15/-0.05 | 0.3 +0.2/-0.1 |
| 1206 | 3.2 +0.15/-0.05 | 1.5 +0.2/-0.05 | 0.4 +0.15/-0.05 | 0.3 +0.2/-0.1 |
| 2010 | 5.10 +0.15/-0.05 | 2.50 +0.2/-0.05 | 0.60 +0.20/-0.1 | 1.2 ±0.2 |
| 2512 | 6.30 +0.15/-0.05 | 3.50 +0.2/-0.05 | 0.60 +0.15/-0.05 | 0.9 ±0.2 |
| 4020 | 10.20 +0.15/-0.05 | 5.10 +0.2/-0.05 | 0.60 +0.15/-0.05 | 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
 Embossed carrier tape acc. to IEC 60286-3 – minimum 500 pieces per value (CHS0402: 1000 pcs.)
 Reel diameter 180 mm or 330 mm

Ordering Data:

Type – value – tolerance – TCR – packaging
 Example: CHR 0805 221k ± 0,5% - TCR 100 - Tape 180 mm

Untrimmed parts are indicated by the extension "NA" in the order code:

Type – value – tolerance – NA – TCR - packaging
 Example: CHR 0805 221k ± 10% NA TCR 100 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.

Part Number:

CHR <size>-Resistance and TC (if applicable)-Tolerance and Pack

Sample: CHR0805-221KD-FR is a CHR0805 221KΩ/±1%/100ppm/Reel

Sample: CHR0805-221K-JR is a CHR0805 221KΩ/±5%/Reel

Specifications subject to change without notice

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Chip Resistors, Non-magnetic
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Technical data – depending on size:

| Size | 0402 | 0504 | 0603 | 0805 | 1206 | 2010 | 2512 | 4020 |
|---|----------|-----------|-----------|------------|------------|------------|--------------------|--------------------|
| Power rating P ₇₀ (mW) (P ₁₅₅ = 0 mW) | 50 | 100 | 100 | 125 | 250 | 500 | 1000 ³⁾ | 1500 ³⁾ |
| Working voltage (V) ²⁾ trimmed untrimmed (Tol. ≥ 5%) | 30 60 | 50 100 | 75 150 | 100 200 | 200 400 | 250 900 | 300 1200 | 500 1500 |

| Ranges / Tolerances / TCR ¹⁾ | | | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 1R – <10R | 10/20% TC250 | 5/10/20% TC100/250 | 5/10/20% TC100/250 | 5/10/20% TC100/250 | 5/10/20% TC100/250 | 5/10/20% TC100/250 | 5/10/20% TC100/250 | 5/10/20% TC100/250 |
| 10R – <100R | 5/10% TC100 | 2/5/10% TC50/100 | 2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 |
| 100R – 1M | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 0,5/.../10% TC50/100 | 0,5/.../10% TC50/100 | 0,5/.../10% TC50/100 | 0,5/.../10% TC50/100 | 0,5/.../10% TC50/100 |
| >1M – 10M | 5/10/20% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 | 1/2/5/10% TC50/100 |

¹⁾ TCR: in ppm/K; +25°C...+125°C; TCR below standard TCR (highest value): +25°C...+85°C

²⁾ U₋, U_{eff}; Continuous operating voltage: $V \leq \sqrt{P \cdot R}$

³⁾ Power Mode: 2W as CHR2512-HT (P₇₀=2W, P₃₀₀=0W) and 3W as CHR4020-HT (P₇₀=3W, P₃₀₀=0W) respectively.
 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.

Zero-Ohm-Jumper: < 50 mOhm

Other values of tolerance, TCR and VCR on request

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) ⁴⁾ | 250°C 3s |
| Max. soldering temperature acc. EN 60068-2-58 | 260°C 10s |

Extended temperature range up to 300°C possible- see datasheet: "High temperature chip resistors" CHR-HT

| Long term stability | 10R – 10 M | < 10R |
|-----------------------------------|------------|--------|
| Storage 125°C/1000h | < 0,5% | < 1% |
| Storage 155°C/1000h | < 1% | < 2% |
| Load P ₇₀ /70°C/1000 h | < 0,5% | < 1% |
| Short term overload | < 0,25% | < 0,5% |
| Damp heat (56d/40°C/96%) | < 0,5% | < 1% |

⁴⁾ Up to 6 months after shipment; longer at storage in Nitrogen
 Data not specified according to EN 140401-802 (CECC 40401-802)

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