BREL International

CHR-Series
Chip Resistors, non-magnetic
Sizes: 0402, 0603, 0805, 1206, 2010, 2512, 4020

Features:

- Chip Resistors in thick film technology
- Non-magnetic
- PtAg [0)] 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)
- **Non-magnetic Lead-Free now available (as CHR-LF Series)**

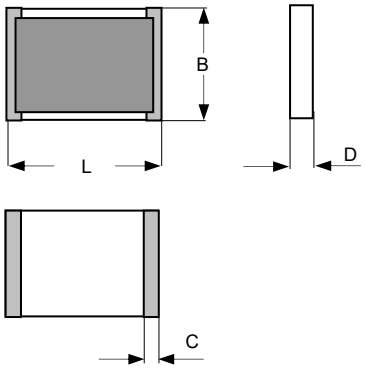
RoHS / ELV conform 2011/65/EC 2000/53/EC

e4

Non-Magnetic

Dimensions:

Size		L (mm)	B (mm)	D (mm)	C (mm)
Imperial (Standard)	Metric (ref. only)	length	width	thickness	width of wrap around
0402	1005	0.95 +0.10/-0.05	0.48 +0.10/-0.05	0.28 +0.10/-0.05	0.1 +0.1/-0.05
0603	1608	1.50 +0.15/-0.05	0.80 +0.15/-0.05	0.40 +0.15/-0.05	0.2 +0.2/-0.1
0805	2012	2.00 +0.15/-0.05	1.25 +0.15/-0.05	0.40 +0.15/-0.05	0.3 +0.2/-0.1
1206	3216	3.20 +0.15/-0.05	1.50 +0.2/-0.05	0.40 +0.15/-0.05	0.3 +0.2/-0.1
2010	5025	5.10 +0.15/-0.05	2.50 +0.2/-0.05	0.60 +0.20/-0.1	0.6 ±0.2
2512	6332	6.30 +0.15/-0.05	3.50 +0.2/-0.05	0.60 +0.15/-0.05	0.9 ±0.2
4020	10050	10.20 +0.20/-0.05	5.10 +0.2/-0.05	0.60 +0.20/-0.1	0.9 ±0.2



Packaging:

Bulk in plastic bags – minimum quantity 100 pieces per value
Embossed carrier tape according to IEC 60286-3 – minimum 500 pieces per value
Reel diameter 180 mm or 330 mm

Ordering Data:

Type – value – tolerance – temperature coefficient TCR
Example: CHR 0805 221k ± 1% TCR100
Untrimmed parts are indicated by the extension "*NA*" in the order code:
Type – NA – value – tolerance– temperature coefficient TCR
Example: CHR 0805-NA 221k ±10% TCR100
Without requirement for the temperature coefficient TCR, the standard value (highest value in table) will be supplied.

BREL 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

[0)] PtAg: Platinum-Silver thick film

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Technical data – depending on size:

Size	0402	0603	0805	1206	2010	2512	4020
Power rating P_{70} (mW) (P_{155} = 0 mW)	50	100	125	250	750 [3]	1000 [3]	2000 [3]
Max. working voltage (V) [2] Standard (trimmed) NA (untrimmed, Tol. ≥ 5%)	 30 60	 75 150	 100 200	 200 400	 250 900	 300 1200	 500 1500

Ranges / Tolerances / Temperature coefficients TCR [1]							
1R – <10R	10/20% TCR250	5/10/20% TCR100/250	5/10/20% TCR100/250	5/10/20% TCR100/250	5/10/20% TCR100/250	5/10/20% TCR100/250	5/10/20% TCR100/250
10R – <100R	5/10% TCR100	2/5/10% TCR50/100	1/2/5/10% TCR50/100	1/2/5/10% TCR50/100	1/2/5/10% TCR50/100	1/2/5/10% TCR50/100	1/2/5/10% TCR50/100
100R – 1M	2/5/10% TCR50/100	1/2/5/10% TCR50/100	0,5/…/10% TCR50/100	0,5/…/10% TCR50/100	0,5/…/10% TCR50/100	0,5/…/10% TCR50/100	0,5/…/10% TCR50/100
>1M – 10M	2/5/10/20% TCR50/100	1/2/5/10% TCR50/100	1/2/5/10% TCR50/100	1/2/5/10% TCR50/100	1/2/5/10% TCR50/100	1/2/5/10% TCR50/100	1/2/5/10% TCR50/100

[1] Temperature coefficient TCR: in ppm/K; +25°C...+125°C; below standard TCR (highest value): +25°C...+85°C
[2] Continuous operating voltage (U_, U_{eff}): V ≤ √(P*R) or max. working voltage (the lower value)
[3] At continuous power dissipation the dimensions of solder-pads have to secure a sufficient heat removal. Power Mode: **1W** as CHR2010-HT (P_{70}=1W, P_{300}=0W), **2W** as CHR2512-HT (P_{70}=2W, P_{300}=0W) and **3W** as CHR4020-HT (P_{70}=3W, P_{300}=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
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. EN 60068-2-58 (lead-free and lead-containing) [4]	250°C 3s
Max. soldering temperature acc. EN 60068-2-58	260°C 10s
Moisture Sensitivity Level acc. to J-STD-020	MSL 1 (unlimited)

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 (air, 30°C/60%rH) or up to 12 months at storage in Nitrogen or in evacuated dry packs.
Other data according to EN 140401-802 (CECC 40401-802).

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