

# CHS Series

## High-Value Chip Resistors

Sizes: 0402, 0603, 0805, 1206, 1210, 2512, 4020

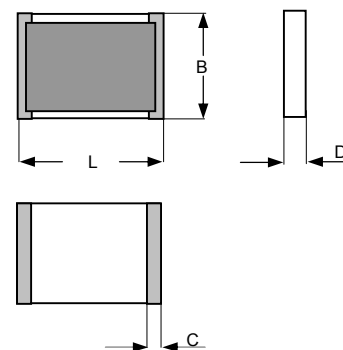
### Features:

- High value chip resistors in thick film technology
- Low temperature and voltage dependency
- Untrimmed for higher working voltage up to 6000 V
- Suitable for high vacuum applications – no organics
- PtAg terminations for soldering and conductive gluing
- High temperature application possible (CHS-HT up to 300°C)
- Non-magnetic

### Dimensions:

Size	L	B	D	C
0402	1.04 $\pm 0.05$	0.50 $\pm 0.05$	0.30 $+0.15/-0.05$	0.1 $+0.1/-0.05$
0603	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	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	3.20 $+0.15/-0.05$	1.50 $+0.2/-0.05$	0.40 $+0.15/-0.05$	0.3 $+0.2/-0.1$
1210	3.20 $+0.15/-0.05$	2.50 $+0.2/-0.05$	0.50 $+0.15/-0.05$	0.8 $\pm 0.2$
2512	6.30 $+0.15/-0.05$	3.50 $+0.2/-0.05$	0.60 $+0.15/-0.05$	0.9 $\pm 0.2$
4020	10.20 $+0.15/-0.05$	5.10 $+0.2/-0.05$	0.60 $+0.15/-0.05$	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  
 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: CHS 4020 10G  $\pm 10\%$  TCR 100 Tape 180 mm

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

Type – value – tolerance – NA – TCR - packaging  
 Example: CHS 4020 10G  $\pm 10\%$  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. Standard measuring voltage is 10V. Different voltages on request and agreement (specify explicitly).

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## Technical data – depending on size:

Size	0402	0603	0805	1206	1210	2512	4020
Power rating $P_{70}$ (mW) ( $P_{155} = 0$ mW)	50	100	125	250	350	1000 <sup>1)</sup>	1500 <sup>1)</sup>
Max. Working Voltage $U_{-}$ , $U_{eff}$ (V)							
trimmed	30	75	100	200	300	1000	4000
untrimmed (Tol. $\geq 5\%$ )	60	150	200	400	600	2000	6000

Ranges/Tolerances/ TCR <sup>2)</sup> / VCR <sup>3)</sup>							
10M – 100M	5/10/20% TC50/100 500 ppm/V	1/5/10/20% TC50/100 500 ppm/V	0.5/1/5/10/20% TC50/100 500 ppm/V	0.5/1/5/10/20% TC25/50/100 250 ppm/V	0.5/1/5/10/20% TC25/50/100 25 ppm/V	0.5/.../20% TC25/50/100 25 ppm/V	0.25/.../10% TC25/50/100 10 ppm/V
>100M – 500M	5/10/20% TC100/250 1000 ppm/V	2/5/10/20% TC100/250 500 ppm/V	2/5/10/20% TC100/250 500 ppm/V	2/5/10/20% TC50/100/250 500 ppm/V	2/5/10/20% TC50/100/250 250 ppm/V	1/5/10/20% TC25/50/100 50 ppm/V	0.5/.../20% TC25/50/100 25 ppm/V
>500M – 1G	5/10/20% TC250/500 1000 ppm/V	5/10/20% TC250/500 1000 ppm/V	5/10/20% TC250/500 1000 ppm/V	5/10/20% TC100/250 1000 ppm/V	5/10/20% TC100/250 250 ppm/V	1/5/10/20% TC100/250 50 ppm/V	1/5/10/20% TC25/50/100 25 ppm/V
>1G – 10G	10/20/30% TC2000 2000 ppm/V	5/10/20/30% TC500/1000 2000 ppm/V	5/10/20% TC500/1000 2000 ppm/V	5/10/20% TC500/1000 2000 ppm/V	5/10/20% TC250/500 500 ppm/V	2/5/10/20% TC250/500 100 ppm/V	2/5/10/20% TC50/100 50 ppm/V
>10G – 100G	10/20/30% TC3000 5000 ppm/V	10/20/30% TC2000/3000 5000 ppm/V	10/20/30% TC2000/3000 5000 ppm/V	10/20/30% TC1000/2000 2000 ppm/V	5/10/20% TC500/1000 1000 ppm/V	5/10/20% TC250/500 250 ppm/V	5/10/20/30% TC100/250 100 ppm/V
>100G – 1T	on request	on request	see CHM series	see CHM series	10/20/30% TC1000/2000 2000 ppm/V	10/20/30% TC500/1000 1000 ppm/V	10/20/30% TC500/1000 500 ppm/V

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

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

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

Other values of tolerance, TCR and VCR as well as higher resistance values on request and agreement

## 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) <sup>4)</sup>	250°C, 3s
Maximum soldering temperature acc. to EN 60068-2-58	260°C, 10s

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

Long term stability	< 1 G $\Omega$	< 10 G $\Omega$	> 10 G $\Omega$
Storage 125°C/1000h	< 1%	< 2%	< 5%
Load Life 70°C/1000h	< 0.5%	< 1%	< 2%
Maximum Voltage/1000h	< 0.5%	< 1%	< 2%

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