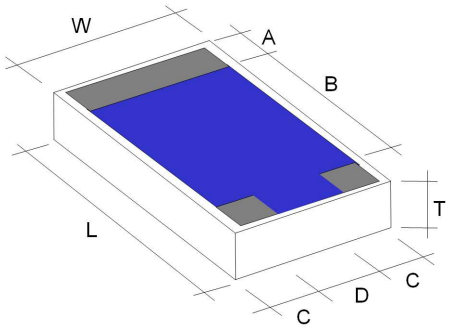
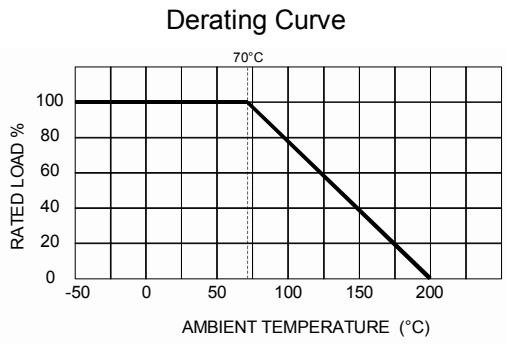
High Voltage Chip Dividers Series HVCD
Flip-chip, Precision, Low TC

High Voltage Chip Dividers HVCD Series combine proprietary Fine Line Thick Film Technology and design to achieve a new level of high voltage ratings and stability in SMD chip dividers. Nicrom's technology features a longer, high aspect ratio trace of lower resistivity film compared to traditional thick film chip dividers.

Compared to standard chip dividers Nicrom's HVCD Series provides unmatched performances and design efficiency resulting in lower voltage coefficients and temperature coefficients, lower noise, tighter tolerances, higher stability, higher resistance values and higher voltage ratings. Wire bondable gold terminations and custom configurations available.





Model Size	Wattage @ 70°C	Max. Continuous Oper. Voltage	Dimensions in millimeters [Dimensions in inches] L	W	T (max.)	A	B (min.)	C	D
2512	0.50	3'000	6.40 ± 0.20 [0.252 ± 0.008]	3.20 ± 0.20 [0.126 ± 0.008]	0.80 [0.032]	0.65 ± 0.20 [0.026 ± 0.008]	5.00 [0.200]	0.65 ± 0.20 [0.026 ± 0.008]	1.90 ± 0.20 [0.075 ± 0.008]
5020	0.80	5'000	12.70 ± 0.20 [0.500 ± 0.008]	5.08 ± 0.20 [0.200 ± 0.008]	1.00 [0.040]	2.00 ± 0.30 [0.079 ± 0.012]	8.00 [0.315]	1.20 ± 0.20 [0.047 ± 0.008]	2.70 ± 0.20 [0.106 ± 0.008]
8020	1.00	7'000	20.32 ± 0.20 [0.800 ± 0.008]	5.08 ± 0.20 [0.200 ± 0.008]	1.00 [0.040]	2.00 ± 0.30 [0.079 ± 0.012]	15.60 [0.615]	1.20 ± 0.20 [0.047 ± 0.008]	2.70 ± 0.20 [0.106 ± 0.008]
10020	1.30	10'000	25.40 ± 0.20 [1.000 ± 0.008]	5.08 ± 0.20 [0.200 ± 0.008]	1.00 [0.040]	2.00 ± 0.30 [0.079 ± 0.012]	20.70 [0.815]	1.20 ± 0.20 [0.047 ± 0.008]	2.70 ± 0.20 [0.106 ± 0.008]

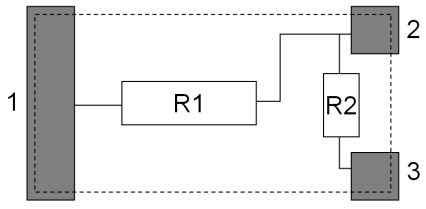
Characteristics

Resistance Values	from 1KΩ to as high as 10GΩ on all models (to 100GΩ on request)		
Ratios	From 1:100 to 1:10'000, other on request		
Absolute Tolerances	0.1%, 0.25%, 0.5%, 1%, 2%, 5%, 10% (0.1% available to 1G, 0.25% to 10G on request)		
Ratio Tolerances	0.1%, 0.25%, 0.5%, 1%, 2%, 5%		
Absolute Temperature Coefficients*	10, 15, 25, 50 and 100 ppm/°C (10 ppm/°C available to 1G, 25 ppm/°C to 10G on request)		
Ratio Temperature Coefficients*	10, 15, 25, 50 ppm/°C		
Operating Temperature	-55 … + 200°C	(extended temperature range to 350°C available)	
Insulation Resistance	> 10'000 MΩ	500 Volt 25 °C 75% relative humidity	
Dielectric Strength	> 1'000 Volt	25 °C 75% relative humidity	
Thermal Shock	Δ R/R < 0.1% typ., 0.50% max.	MIL Std. 202, method 107 Cond. C	IEC 68 - 2 -14
Overload	Δ R/R < 0.1% typ., 0.50% max.	1,5 x Pnom, 5 sec (do not exceed max. voltage)	
Moisture Resistance	Δ R/R < 0.1% typ., 0.50% max.	MIL Std. 202, method 106	IEC 68 - 2 - 3
Load Life	Δ R/R < 0.1% typ., 0.50% max.	1000 hours at rated power	IEC 115 - 1
Encapsulation	Screen Printed Silicone	Core Material	Al_2O_3 (96%)
Solder Pads Material	Silver (PdAg) / Bondable Gold / Tinned	Resistor Material	Ruthenium Oxide

Voltage Coefficients of Resistance

Type	Resistance Range	VCR (- ppm/V) **
2512	1K .. 30M	< 0.80
	30M .. 300M	< 4.00
	300M .. 3G	< 7.00
5020	1K .. 40M	< 0.40
	40M .. 400M	< 2.00
	400M .. 4G	< 3.60
8020	1K .. 60M	< 0.30
	60M .. 600M	< 1.50
	600M .. 6G	< 2.50
10020	1K .. 80M	< 0.20
	80M .. 800M	< 1.00
	800M .. 8G	< 1.80

Electrical Connections



PCB Pads

$$\text{Ratio} = \frac{R2}{R1 + R2}$$

* Temperature Coefficient referenced to 25°C, ΔR taken at +125°C.
** Typical values. Voltage coefficient of resistance strongly depends on the resistance value, consult factory for details.

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