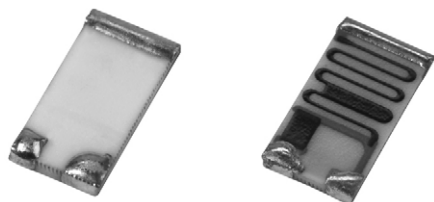


# Thick Film Chip Dividers, High Voltage



## FEATURES

- High voltage up to 3000 V
- Typical resistance ratios of 250:1 to a maximum resistance ratio of 500:1
- Flow solderable
- Tape and reel packaging available
- Termination style: 3-sided wraparound termination or single termination flip chip available
- Suitable for solderable, epoxy bondable, or wire bondable applications
- Termination material: solder-coated nickel barrier or solder coated non-magnetic terminations standard; gold, palladium silver, platinum gold, platinum silver or platinum palladium gold terminations available
- Multiple styles, termination materials and configurations, allow wide design flexibility
- Epoxy bondable or wire bondable non-magnetic terminations available
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS\***  
Available  
**HALOGEN  
FREE**

## LINKS TO ADDITIONAL RESOURCES



### Note

\* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

## STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	CASE SIZE	POWER RATING $P_{70^{\circ}\text{C}}$ W	MAXIMUM WORKING VOLTAGE <sup>(1)</sup> V	RESISTANCE RANGE <sup>(2)</sup> $\Omega$	TOLERANCE <sup>(3)</sup> $\pm \%$	TEMPERATURE COEFFICIENT <sup>(4)</sup> (-55 °C to +155 °C) $\pm \text{ppm}/^{\circ}\text{C}$	TCR TRACKING $\pm \text{ppm}/^{\circ}\text{C}$
CDHV 2512	2512	1	3000	20M to 20G	1, 2, 5, 10, 20	100	50 (typical)

### Notes

- (1) Continuous working voltage shall be  $\sqrt{P \times R}$  or maximum working voltage, whichever is less
- (2) Resistance values below 1 G $\Omega$  are calibrated at 100 V<sub>DC</sub>, and values of 1 G $\Omega$  and above are calibrated at 1000 V<sub>DC</sub>. Calibration at other voltages available upon request
- (3) Contact factory for tighter tolerances
- (4) Reference only: not for all values specified. Consult factory for your value

## VOLTAGE AND TEMPERATURE COEFFICIENTS OF RESISTANCE CHART TYPICAL

RESISTANCE ( $\Omega$ )	RATIO (TYPICAL)	VCR (ppm/V)	TCR (ppm/ $^{\circ}\text{C}$ ) -55 °C to +155 °C
20M	250:1	10	100
150M	300:1	10	150
800M	500:1	10	200

### Note

- Contact factory for other ratios



## GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CDHVAF20M0J2500GFB (preferred part number format)

C	D	H	V	A	F	2	0	M	0	J	2	5	0	0	G	F	B
GLOBAL MODEL	TERM STYLE	TERM MATERIAL	RESISTANCE VALUE (R <sub>1</sub> )	TOLERANCE	RATIO (R <sub>1</sub> + R <sub>2</sub> ) / R <sub>2</sub>	RATIO TOLERANCE	SOLDER TERMINATION	PACKAGING									
<b>CDHV</b> = CDHV2512	<b>A</b> = 3-sided <b>B</b> = top only	<b>F</b> = nickel barrier <b>G</b> = non-magnetic <b>A</b> = palladium silver <b>B</b> = platinum gold <b>C</b> = gold <b>D</b> = platinum silver <b>E</b> = platinum palladium gold	<b>M</b> = MΩ <b>G</b> = GΩ <b>20M0</b> = 20 MΩ <b>800M</b> = 800 MΩ <b>1G00</b> = 1 GΩ	<b>F</b> = ± 1 % <b>G</b> = ± 2 % <b>J</b> = ± 5 % <b>K</b> = ± 10 % <b>M</b> = ± 20 %	3 digit significant figure, followed by a multiplier <b>0500</b> = 50:1 <b>2500</b> = 250:1 <b>3000</b> = 300:1 <b>5000</b> = 500:1	<b>F</b> = ± 1 % <b>G</b> = ± 2 % <b>H</b> = ± 3 % <b>J</b> = ± 5 %	<b>E</b> = Sn100 <b>F</b> = Sn95/Ag5, HSD <b>N</b> = no solder <b>S</b> = Sn62 / Pb36 / Ag2, HSD <b>T</b> = Sn90 / Pb10	<b>B</b> = bulk (250 pcs max.) <b>F</b> = T / R (full reel) <b>1</b> = T / R (1000 pcs) <b>5</b> = T / R (500 pcs) <b>T</b> = T / R (250 pcs min.) <b>W</b> = waffle tray									

Historical Part Numbering: CDHV2512AF2005J2500Ge2 (will continue to be accepted)

CDHV2512	A	F	2005	J	2500	G	e2
HISTORICAL MODEL	TERM STYLE	TERM MATERIAL	RESISTANCE VALUE (R <sub>1</sub> )	TOLERANCE	RATIO (R <sub>1</sub> + R <sub>2</sub> ) / R <sub>2</sub>	RATIO TOLERANCE	SOLDER TERMINATION

## Note

- For additional information on packaging, refer to the "Surface Mount Resistor Packaging" document ([www.vishay.com/doc?31543](http://www.vishay.com/doc?31543))

## MATERIAL SPECIFICATIONS

Resistive element	Ruthenium oxide
Encapsulation	Glass
Substrate	96 % alumina
Termination	Solder-coated nickel barrier or solder coated non-magnetic terminations standard. Gold, palladium silver, platinum gold, platinum silver, platinum palladium gold terminations available.
Solder finish	Pure tin or tin / lead solder alloys standard. Tin / silver or tin / lead / silver solder alloys available.

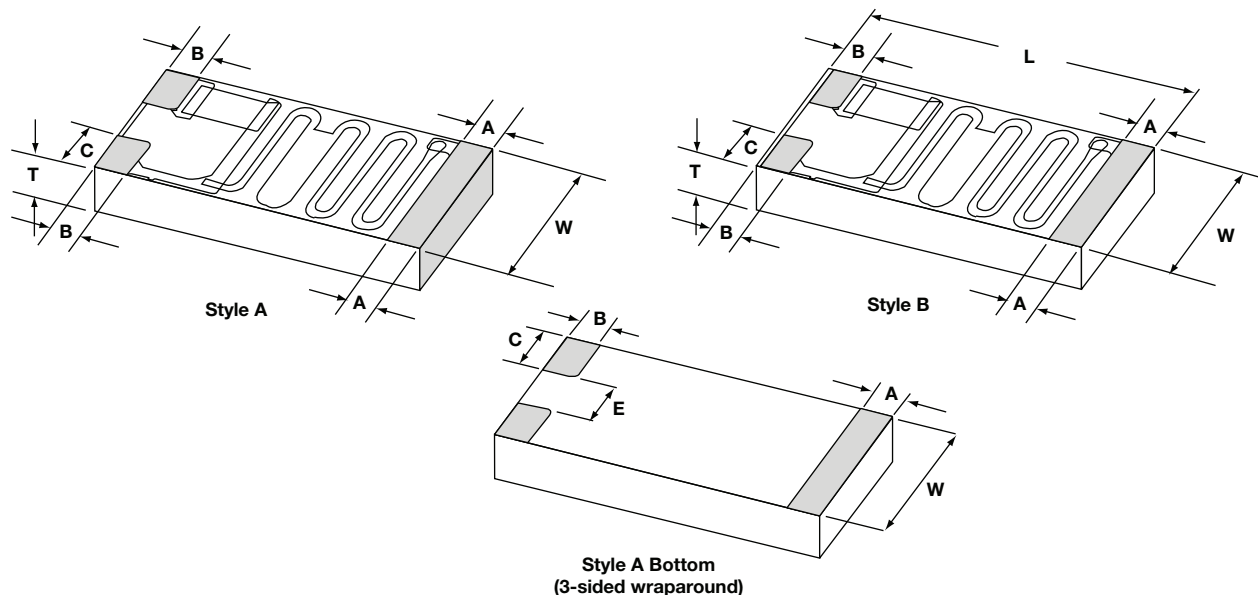
## ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-55 °C to +155 °C
Life	Less than 0.5 % change when tested at full rated power

## Note

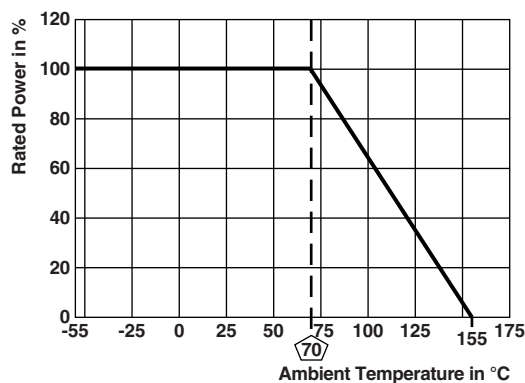
- Reference only: not for all values specified. Consult factory for your size and value

# DIMENSIONS in inches (millimeters)



TERMINATION	LENGTH (L) ± 0.006 (0.152)	WIDTH (W) ± 0.006 (0.152)	THICKNESS (T) ± 0.005 (0.127)	A ± 0.005	B ± 0.005	C ± 0.005	E ± 0.005
Style A (3-sided wraparound)	0.250	0.126	0.025	0.025	0.025	0.040	0.046
Style B (top only)	0.240	0.126	0.025	0.025	0.025	0.040	-

# DERATING CURVE



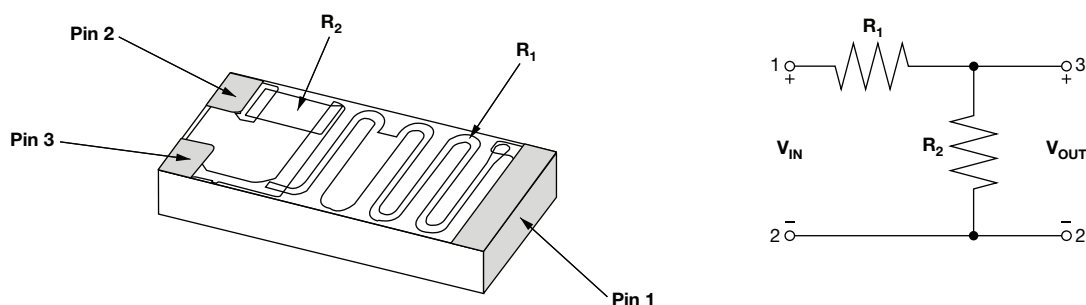
## Note

- Reference only; not for all values specified. Consult factory for your specific value

TYPE	TERMINATION MATERIAL	TERMINATION STYLE	TERMINATION STYLE / MATERIAL CODE	SOLDER TERMINATION CODE
Solderable	Nickel barrier	3-sided (wraparound)	AF	E or T (standard); F or S (optional) <sup>(1)</sup>
		Top only (flip chip)	BF	
Solderable	Non-magnetic	3-sided (wraparound)	AG	E or T (standard); F or S (optional) <sup>(1)</sup>
		Top only (flip chip)	BG	
Epoxy bondable / solderable	Platinum palladium gold	Top only (flip chip)	BE	N (standard); F or S (optional) <sup>(2)</sup>
Wire bondable / epoxy bondable	Gold	Top only (flip chip)	BC	N
Epoxy bondable	Palladium silver <sup>(3)</sup>	Top only (flip chip)	BA	N
	Platinum gold		BB	
	Platinum silver		BD	

**Notes**

- (1) Standard solder plating for the nickel barrier and non-magnetic parts is solder terminations E or T. Hot solder dipped terminations F or S are also available
- (2) Use solder termination N for applications requiring epoxy bondable mounting, and solder terminations F or S for applications requiring solderable mounting
- (3) While not recommended, palladium silver terminations could be used for solderable applications when using a solder alloy containing silver. If the solder paste being used to solder the palladium silver terminated parts to the boards does not have a silver-based composition, then the silver in the terminations could begin to leach when it is exposed to liquidus non-silver-based solders, causing the potential for solderability and/or solder joint issues

**SCHEMATIC**




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