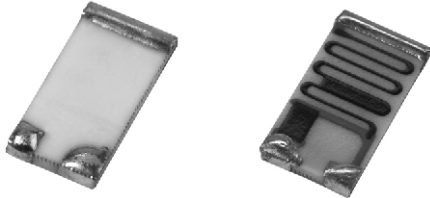


Thick Film Chip Dividers, High Voltage



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



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 $P_{70\text{ }^\circ\text{C}}$ W | MAXIMUM WORKING VOLTAGE ⁽¹⁾ V | RESISTANCE RANGE ⁽²⁾ Ω | TOLERANCE ⁽³⁾ $\pm \%$ | TEMPERATURE COEFFICIENT ⁽⁴⁾ (-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 Ω are calibrated at 100 V_{DC}, and values of 1 G Ω and above are calibrated at 1000 V_{DC}. 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 (Ω) | RATIO (TYPICAL) | VCR (ppm/V) | TCR (ppm/°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 ₁) | TOLERANCE | RATIO (R ₁ + R ₂) / R ₂ | RATIO TOLERANCE | SOLDER TERMINATION | PACKAGING |
|-----------------|-----------------------------|---|--|---|---|-------------------------------------|--|--|
| CDHV = CDHV2512 | A = 3-sided B = top only | F = nickel barrier G = non-magnetic A = palladium silver B = platinum gold C = gold D = platinum silver E = platinum palladium gold | M = MΩ G = GΩ 20M0 = 20 MΩ 800M = 800 MΩ 1G00 = 1 GΩ | F = ± 1 % G = ± 2 % J = ± 5 % K = ± 10 % M = ± 20 % | 3 digit significant figure, followed by a multiplier 0500 = 50:1 2500 = 250:1 3000 = 300:1 5000 = 500:1 | G = ± 2 % H = ± 3 % J = ± 5 % | E = Sn100 F = Sn95/Ag5, HSD N = no solder S = Sn62 / Pb36 / Ag2, HSD T = Sn90 / Pb10 | B = bulk (250 pcs max.) F = T / R (full reel) 1 = T / R (1000 pcs) 5 = T / R (500 pcs) T = T / R (250 pcs min.) W = 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 ₁) | TOLERANCE | RATIO (R ₁ + R ₂) / R ₂ | RATIO TOLERANCE | SOLDER TERMINATION |

Note

- For additional information on packaging, refer to the “Surface Mount Resistor Packaging” document (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. |

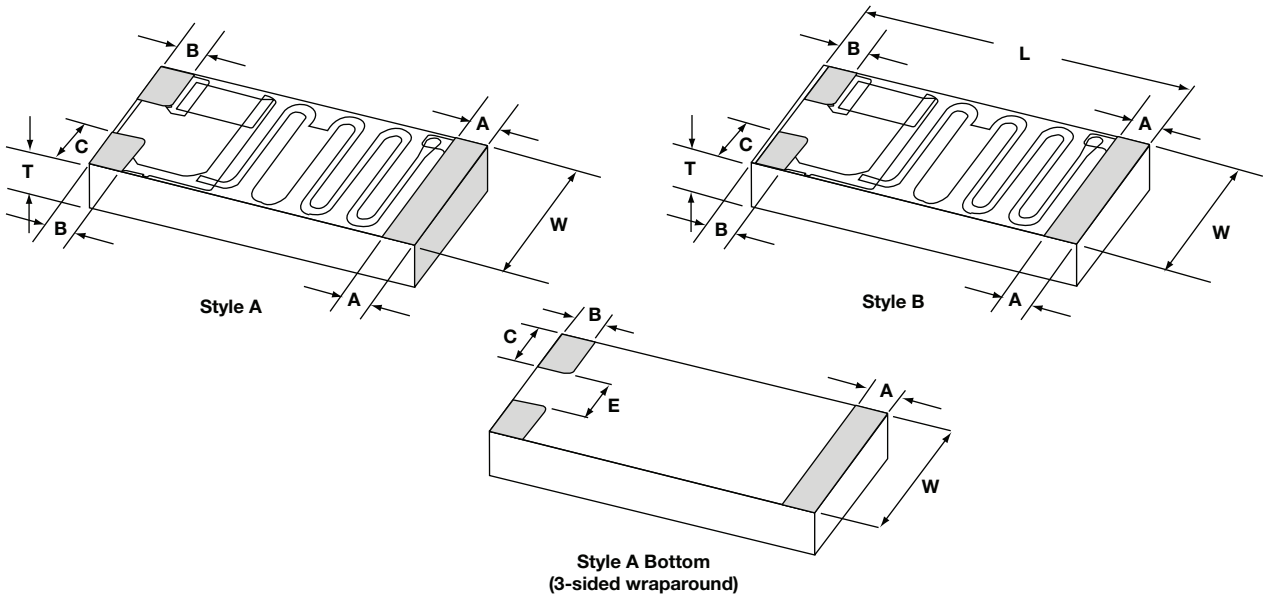
ENVIRONMENTAL SPECIFICATIONS

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

Note

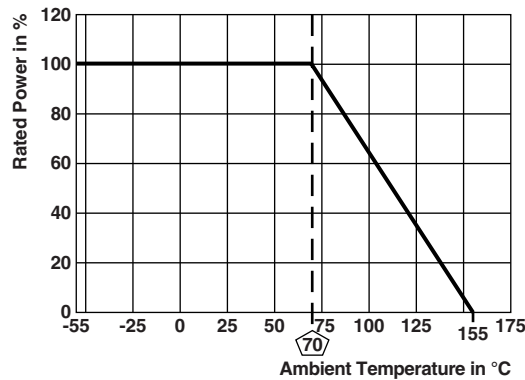
- Reference only: not for all values specified. Consult factory for your size and value

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



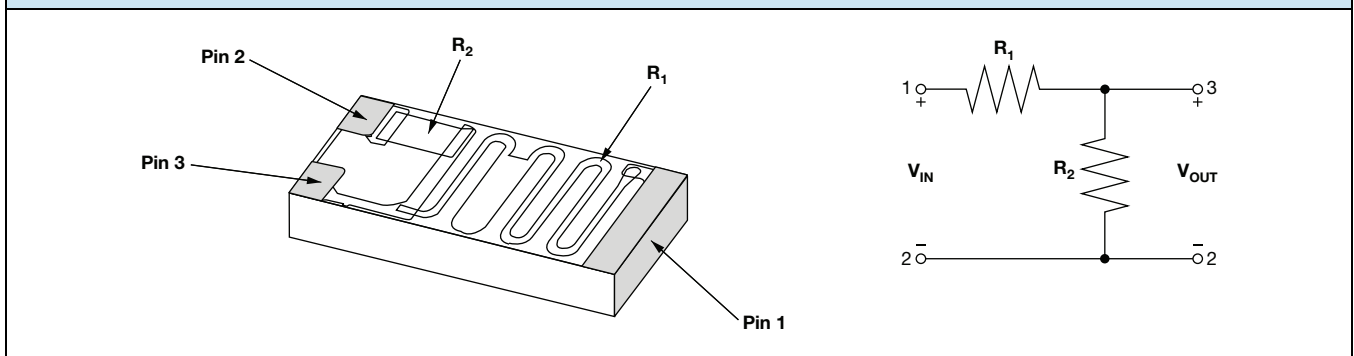
Note

- 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) ⁽¹⁾ |
| | | Top only (flip chip) | BF | |
| Solderable | Non-magnetic | 3-sided (wraparound) | AG | E or T (standard); F or S (optional) ⁽¹⁾ |
| | | Top only (flip chip) | BG | |
| Epoxy bondable / solderable | Platinum palladium gold | Top only (flip chip) | BE | N (standard); F or S (optional) ⁽²⁾ |
| Wire bondable / epoxy bondable | Gold | Top only (flip chip) | BC | N |
| Epoxy bondable | Palladium silver ⁽³⁾ | 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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