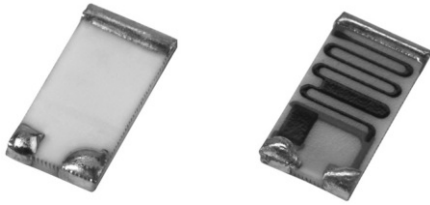


## Thick Film Chip Dividers, High Voltage



### ELECTRICAL SPECIFICATIONS

**Resistance Range:** 1 M $\Omega$  to 20 G $\Omega$   
**Resistance Tolerance:**  $\pm 1\%$  to  $\pm 20\%$   
**Power Rating:** See table  
**Voltage Coefficient:** See table  
**Temperature Coefficient:** See table  
**Ratio Tracking:** See table

### MECHANICAL SPECIFICATIONS

**Construction:** 96 % alumina substrate with proprietary cermet resistance element and specified termination material

### FEATURES

- High voltage up to 3000 V
- Typical resistance ratios of 250:1, 500:1, etc.
- Flow solderable
- Tape and reel packaging available
- Available with either wraparound terminations or as a single termination flip chip
- Suitable for solderable, epoxy bondable, or wire bondable applications
- Termination: Gold, palladium silver, platinum gold, platinum silver, platinum palladium gold or solder-coated nickel barrier available
- Multiple styles, termination materials and configurations, allow wide design flexibility
- Non-magnetic terminations available
- Lead (Pb)-free version is RoHS compliant



**RoHS\***  
**COMPLIANT**

### ENVIRONMENTAL SPECIFICATIONS

**Operating temperature:** - 55 °C to + 150 °C

**Life:** Less than 0.5 % change when tested at full rated power (Reference only: Not for all values specified. Consult factory for your size and value.)

### STANDARD ELECTRICAL SPECIFICATIONS

| RESISTANCE ( $\Omega$ ) <sup>(1)</sup> | POWER RATING (mW) | VOLTAGE RATING (V max.) |
|--|-------------------|-------------------------|
| 20M to 20G                             | contact factory   | 3000                    |

#### Note

<sup>(1)</sup> 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.

### VOLTAGE AND TEMPERATURE COEFFICIENTS OF RESISTANCE CHART TYPICAL

| RESISTANCE ( $\Omega$ ) | RATIO (typical) | VCR (ppm/V) | TCR (ppm/°C) - 55 °C to + 150 °C |
|-------------------------|-----------------|-------------|----------------------------------|
| 20M                     | 250:1           | 5           | 260                              |
| 150M                    | 300:1           | 5           | 80                               |
| 800M                    | 300:1           | 10          | 50                               |
| 20G                     | 700:1           | 90          | 160                              |

### GLOBAL PART NUMBER INFORMATION

**New Global Part Numbering: CDHVAA20M0J2500GFB (preferred part number format)**

C D H V A A 2 0 M 0 J 2 5 0 0 G F B

| GLOBAL MODEL       | TERM STYLE                  | TERM MATERIAL   | RESISTANCE VALUE (R1)   | TOLERANCE  | RATIO R1/R2  | RATIO TOLERANCE  | SOLDER TERMINATION   | PACKAGING                                   |
|--------------------|-----------------------------|---|---|--|--|--|--|---|
| CDHV =<br>CDHV2512 | A = 3-sided<br>B = top only | A = Palladium silver<br>B = Platinum gold<br>C = Gold<br>D = Platinum silver<br>E = Platinum palladium gold<br>F = Nickel barrier | M = Million<br>G = Billion<br>20M0 = 20 M $\Omega$<br>800M = 800 M $\Omega$<br>20G0 = 20 G $\Omega$ | F = $\pm 1.0\%$<br>G = $\pm 2.0\%$<br>H = $\pm 3.0\%$<br>J = $\pm 5.0\%$<br>K = $\pm 10.0\%$<br>M = $\pm 20.0\%$ | 3 digit significant figure, followed by a multiplier<br>2500 = 250:1<br>3000 = 300:1<br>7000 = 700:1 | F = $\pm 1.0\%$<br>G = $\pm 2.0\%$<br>H = $\pm 3.0\%$<br>J = $\pm 5.0\%$ | E = Sn100<br>F = Sn95/Ag5<br>N = No solder<br>S = Sn62/Pb36/Ag2<br>T = Sn90/Pb10 | B = Bulk<br>T = Tape and reel<br>W = Waffle |

**Historical Part Numbering: CDHV2512AA2005J2500Ge2 (will continue to be accepted)**

|                  |            |               |                       |           |             |                 |                    |
|------------------|------------|---------------|-----------------------|-----------|-------------|-----------------|--------------------|
| CDHV2512         | A          | A             | 2005                  | J         | 2500        | G               | e2                 |
| HISTORICAL MODEL | TERM STYLE | TERM MATERIAL | RESISTANCE VALUE (R1) | TOLERANCE | RATIO R1/R2 | RATIO TOLERANCE | SOLDER TERMINATION |

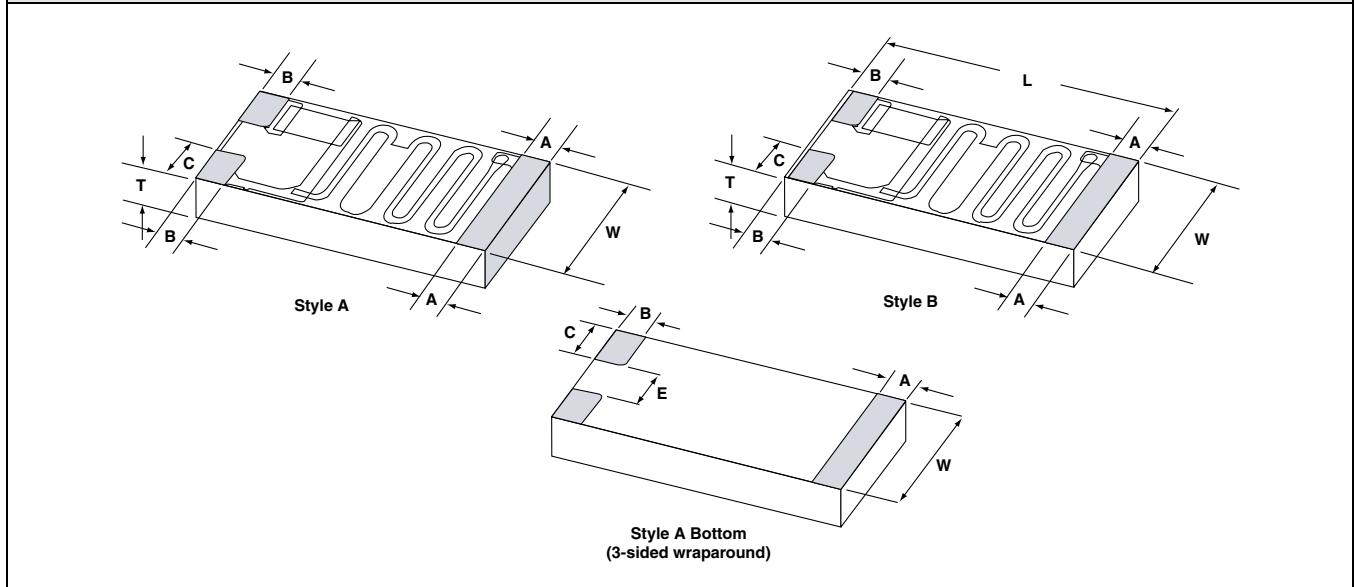
\* Pb containing terminations are not RoHS compliant, exemptions may apply

| <b>RATIO TRACKING (ppm/°C)</b> |                 |                           |                           |
|--------------------------------|-----------------|---------------------------|---------------------------|
| RESISTANCE ( $\Omega$ )        | RATIO (typical) | COLD (+ 25 °C to - 50 °C) | HOT (+ 25 °C to + 150 °C) |
| 20M                            | 250:1           | 5                         | 260                       |
| 150M                           | 300:1           | 5                         | 80                        |
| 800M                           | 300:1           | 10                        | 50                        |
| 20G                            | 700:1           | 90                        | 160                       |

**Note**

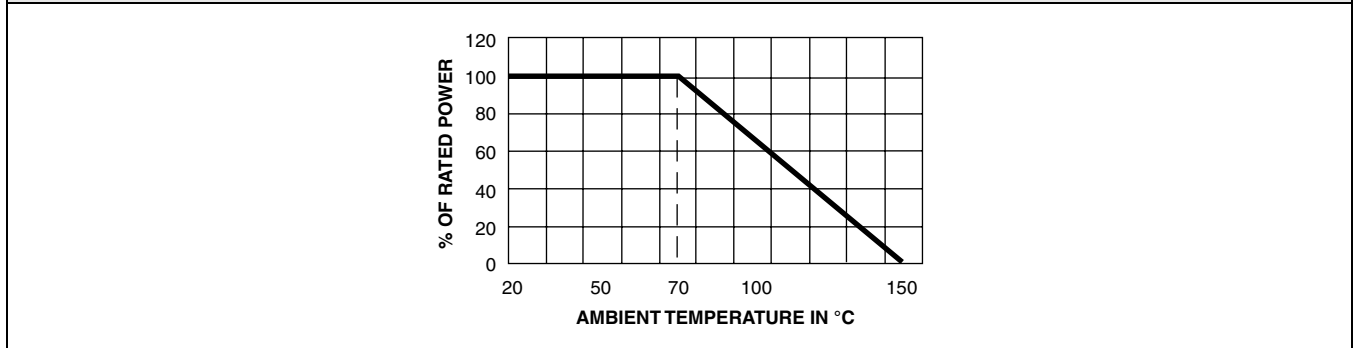
- Contact factory for other ratios

**DIMENSIONS** in inches [millimeters]



| TERMINATION                     | LENGTH (L)<br>$\pm 0.006$ [0.152] | WIDTH (W)<br>$\pm 0.006$ [0.152] | THICKNESS (T)<br>$\pm 0.002$ [0.051] | A $\pm 0.005$ | B $\pm 0.005$ | C $\pm 0.005$ | E $\pm 0.005$ |
|---------------------------------|-----------------------------------|----------------------------------|--------------------------------------|---------------|---------------|---------------|---------------|
| STYLE A<br>(wraparound 3 sided) | 0.250                             | 0.126                            | 0.025                                | 0.025         | 0.025         | 0.040         | 0.046         |
| STYLE B<br>(top only)           | 0.240                             | 0.126                            | 0.025                                | 0.025         | 0.025         | 0.040         | -             |

**DERATING CURVE**



(Reference only: Not for all values specified. Consult factory for your size and value.)



| TYPE                             | TERMINATION MATERIAL            | TERMINATION STYLE    | TERMINATION STYLE/<br>MATERIAL CODE | SOLDER TERMINATION CODE     |
|----------------------------------|---------------------------------|----------------------|-------------------------------------|-----------------------------|
| Solderable                       | Nickel barrier                  | 3-sided (wraparound) | AF                                  | E, F, S or T <sup>(3)</sup> |
|                                  |                                 | Top only (flip chip) | BF                                  |                             |
| Wire bondable/<br>Solderable     | Platinum palladium gold         | 3-sided (wraparound) | AE                                  | N, F or S <sup>(1)</sup>    |
|                                  |                                 | Top only (flip chip) | BE                                  |                             |
| Wire bondable/<br>Epoxy bondable | Gold                            | 3-sided (wraparound) | AC                                  | N                           |
|                                  |                                 | Top only (flip chip) | BC                                  |                             |
| Epoxy bondable                   | Palladium silver <sup>(2)</sup> | 3-sided (wraparound) | AA                                  | N                           |
|                                  |                                 | Top only (flip chip) | BA                                  |                             |
|                                  | Platinum gold                   | 3-sided (wraparound) | AB                                  |                             |
|                                  |                                 | Top only (flip chip) | BB                                  |                             |
|                                  | Platinum silver                 | 3-sided (wraparound) | AD                                  |                             |
|                                  |                                 | Top only (flip chip) | BD                                  |                             |

**Notes**

<sup>(1)</sup> Use solder termination N for applications requiring wire bondable mounting, and solder terminations F or S for applications requiring solderable mounting.

<sup>(2)</sup> While not recommended, palladium silver terminations could be used for solderable applications when using a solder alloy containing silver.

<sup>(3)</sup> Standard solder plating for the nickel barrier parts are solder terminations E or T. Hot solder dipped terminations F or S are also available.



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