Molded Thick Film Divider, High Voltage, High Precision, Surface-Mount



FEATURES

- High voltage up to 1500 V utilizing thick film technology
- Precision to ± 0.5 % with low TCR tracking to 10 ppm/°C utilizing thick film technology
- Sulfur resistant
- Automotive compliant terminations
- AEC-Q200 qualified
- Wide range of resistance value and ratios
- 12.5 mm creepage distance. Rated 1250 V per IEC 60664-1
- PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

RoHS COMPLIANT

HALOGEN FREE

LINKS TO ADDITIONAL RESOURCES

3D Models

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	CASE SIZE	POWER RATING $P_{70\,°C}$ W	MAXIMUM WORKING VOLTAGE (1) V	RESISTANCE RANGE R_1 (2) Ω	TOLERANCE (3) R_1 ± %	RATIO RANGE (4) $(R_1 + R_2) / R_2$	RATIO TOL. ± %	TCR TRACKING (-55 °C to +155 °C) ± ppm/°C
CDMM	4527	1.5	1500	500K to 50M	0.5, 1, 2, 5, 10	100:1 to 500:1	0.5, 1, 2, 5	10 - 50

Notes

(1) Continuous working voltage shall be $\sqrt{P \times R}$ or maximum working voltage, whichever is less

(2) Resistance value is calibrated at 100 V_{DC}

(3) Contact factory for tighter tolerances

(4) Contact factory for other ratios

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CDMM20M0F2500FEF (preferred part number format)

C	D	M	M	2	0	M	0	F	2	5	0	0	F	E	F		

GLOBAL MODEL	RESISTANCE VALUE (R_1)	TOLERANCE	RATIO $(R_1 + R_2) / R_2$	RATIO TOLERANCE	SOLDER TERMINATION	PACKAGING	SPECIAL
(see Standard Electrical Specifications Global Model column for options)	**K** = kΩ **M** = MΩ **525K** = 525 kΩ **1M50** = 1.5 MΩ	**D** = ± 0.5 % **F** = ± 1 % **G** = ± 2 % **J** = ± 5 % **K** = ± 10 %	3 digit significant figure, followed by a multiplier **2500** = 250:1 **3000** = 300:1	**D** = ± 0.5 % **F** = ± 1 % **G** = ± 2 % **J** = ± 5 %	**E** = Sn100	**B** = bulk (250 pcs max.) **F** = T/R (1200 pcs) **1** = T/R (1000 pcs) **5** = T/R (500 pcs) **T** = T/R (250 pcs min.)	Blank = standard (dash number) (up to 2 digits) from **1** to **99** as applicable

Notes

- Contact factory for other ratios
- For additional information on packaging, refer to the Surface Mount Resistor Packaging document (www.vishay.com/doc?31543)

PATENT(S): www.vishay.com/patents

This Vishay product is protected by one or more United States and international patents.

For technical questions, contact: te1resistors@vishay.com

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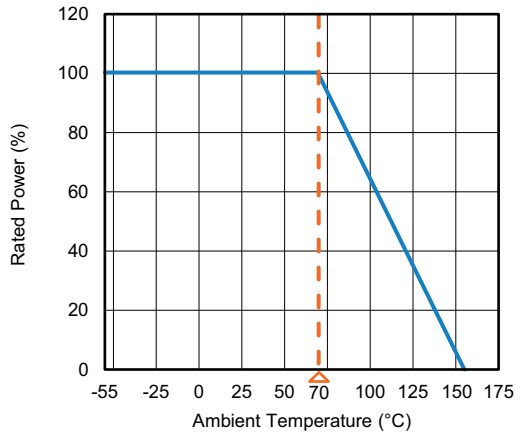
VOLTAGE AND TEMPERATURE COEFFICIENTS OF RESISTANCE CHART (TYPICAL)

GLOBAL MODEL	RESISTANCE Ω	RATIO (TYPICAL)	VCR ppm/V	RATIO TRACKING (-55 °C to +150 °C) ppm/°C
CDMM	500K	100:1	-10	± 20
	15M	250:1	-10	± 10
	50M	500:1	-10	-50 to 0

Note

- Contact factory for other ratios

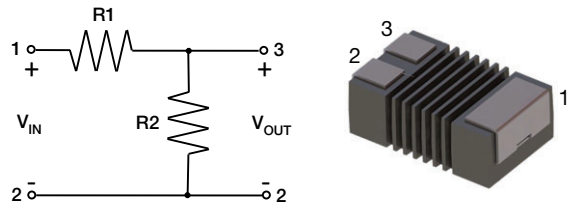
DERATING CURVE



ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-55 °C to +155 °C

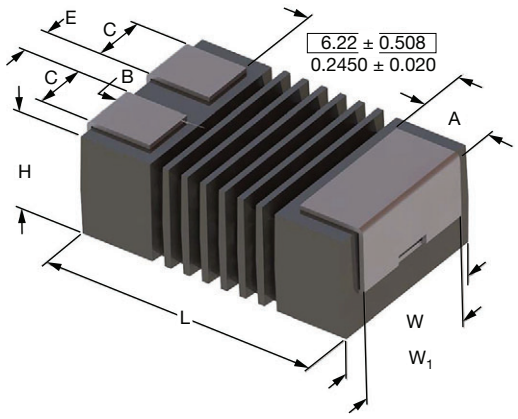
TYPICAL DC ELECTRICAL CIRCUIT

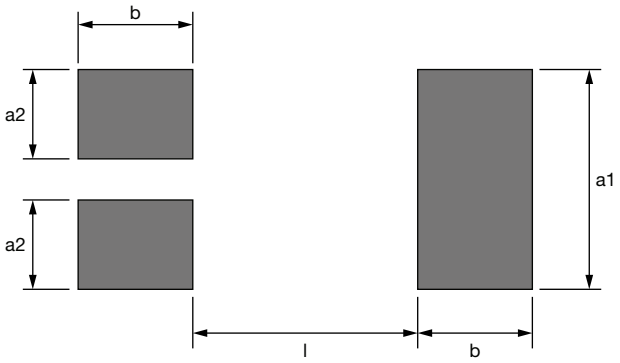


MECHANICAL SPECIFICATIONS

Resistive element	Ruthenium oxide (thick film)
Encapsulation	Molded thermoplastic
Substrate	Alumina
Termination	Solder-coated bronze

DIMENSIONS in inches (millimeters)





L (1)	H (1)	W	W_1	A	B	C	E	a1	a2	b	l
0.455 ± 0.020 (11.56 ± 0.508)	0.167 ± 0.010 (4.24 ± 0.254)	0.275 ± 0.005 (6.98 ± 0.127)	0.216 ± 0.005 (5.49 ± 0.127)	0.100 ± 0.010 (2.54 ± 0.254)	0.100 ± 0.010 (2.54 ± 0.254)	0.083 ± 0.005 (2.11 ± 0.127)	0.050 ± 0.005 (1.27 ± 0.127)	0.225 (5.72)	0.87 (2.21)	0.145 (3.68)	0.255 (6.48)

Note

(1) Dimensions includes the terminals

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PERFORMANCE		
TEST	**CONDITIONS OF TEST**	**TEST LIMITS**
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	± 1.0 % ΔR
High temperature exposure	1000 h at 155 °C	± 1.0 % ΔR
Biased humidity	+85 °C, 85 % RH, 10 % rated power [1], 1000 h	± 2.0 % ΔR
Mechanical shock	100 *g*'s for 11 ms, 5 pulses	± 0.5 % ΔR
Vibration	Frequency varied 10 Hz to 500 Hz in 1 min, 3 directions, 9 h	± 0.5 % ΔR
Load life	1000 h at rated power, +70 °C, 1.5 h "ON", 0.5h "OFF"	± 1.0 % ΔR
Resistance to solder heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± 1.0 % ΔR

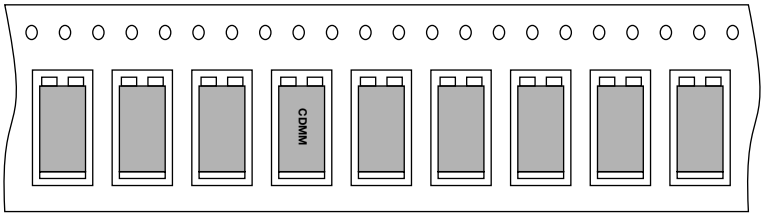
Note

[1] Applied voltage is based on the critical resistance value, not to exceed 500 V

PACKAGING				
MODEL	**TAPE WIDTH**	**DIAMETER**	**PIECES/REEL**	**CODE**
CDMM	24 mm / embossed plastic	330 mm / 13"	1200	EF
			1000	E1
			500	E5
			250	ET

Note

- Embossed carrier tape per EIA-481



The above image shows the orientation of the parts in the reel

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