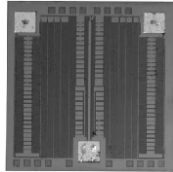


## Megohm Center-Tap Chip Resistor



Product may not be to scale

### FEATURES

- Wire bondable
- Resistance range total: 200 kΩ to 10 MΩ
- Center tap
- Chip size: 0.040 inches square
- Resistor material: Tantalum nitride, self-passivating
- Moisture resistant

The CTM resistor chips extends the resistance range to 10M in a center tap configuration while keeping the die size relatively small.

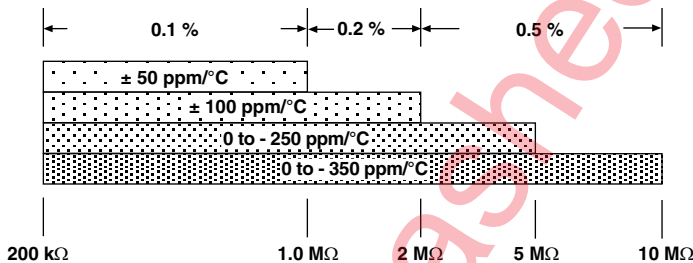
The CTMs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The CTMs are 100 % electrically tested and visually inspected to MIL-STD-883.

### APPLICATIONS

Vishay EFI CTM tapped megohm resistor chips are designed for hybrid packages requiring high value, two resistor combinations.

### TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES

Tightest Standard Tolerance Available



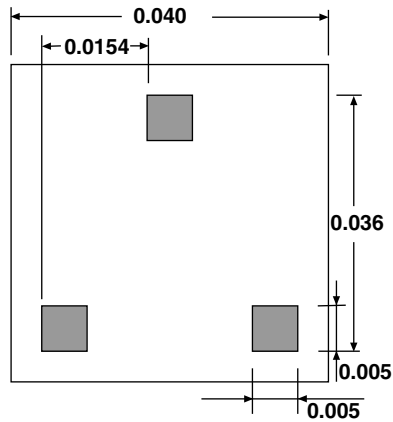
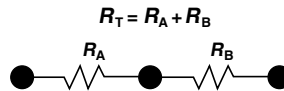
PROCESS CODE

CLASS H*	CLASS K*
100	130
101	131
099	129
098	128

\*MIL-PRF-38534 inspection criteria

### STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	
TCR Tracking Between Resistors	± 5 ppm/°C
Ratio/Ratio, $R_A/R_B$ : Tolerance	1 ± 1 % standard
Noise	- 12 dB typ.
Moisture Resistance, MIL-STD-202, Method 106	± 0.5 % max. $\Delta R/R$
Stability, 1000 h, + 125 °C, 10 mW	± 0.5 % max. absolute ± 0.005 % ratio
Operating Temperature Range	- 55 °C to + 125 °C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	± 0.25 % max. $\Delta R/R$
High Temperature Exposure, + 150 °C, 100 h	± 0.5 % max. $\Delta R/R$
Dielectric Voltage Breakdown	200 V
Insulation Resistance	10 <sup>12</sup> min.
Operating Voltage	100 V max.
DC Power Rating at + 70 °C (Derated to Zero at + 175 °C)	20 mW each resistor
5 x Rated Power Short-Time Overload, + 25 °C, 5 s	± 0.25 % max. $\Delta R/R$

**DIMENSIONS** in inches

**SCHEMATIC**


<b>MECHANICAL SPECIFICATIONS</b> in inches	
PARAMETER	
Chip Size	0.040 x 0.040 ± 0.002 (1.02 x 1.02 ± 0.05 mm)
Chip Thickness	0.010 ± 0.002 (0.254 ± 0.05 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum SiO <sub>2</sub>
Resistor Material	Tantalum nitride, self-passivating
Bonding Pad Size	0.005 x 0.005 (0.127 x 0.127 mm)
Number of Pads	3
Pad Material	10 kÅ minimum aluminum
Backing	None, lapped semiconductor silicon

**Options:** Gold back for eutectic die attach  
 Custom ratios available up to 4:1  $R_A/R_B$  - consult Vishay EFI Sales  
 Consult Applications Engineer

<b>ORDERING INFORMATION</b>					
Example: 100 % visual, 2 MΩ, ± 1 %, ± 100 ppm/°C TCR, aluminum pads, class H visual inspection					
<b>W</b>	<b>CTM</b>	<b>101</b>	<b>2000</b>	<b>3</b>	<b>F</b>
INSPECTION/ PACKAGING	PRODUCT FAMILY	PROCESS CODE	RESISTANCE VALUE	MULTIPLIER CODE	TOLERANCE CODE
W = 100 % visually inspected parts in matrix trays per MIL-STD-883		See Process Code table	Use first 4 digits significant digits of the resistance ( $R_T$ )	<b>2</b> = 100 <b>3</b> = 1000 <b>4</b> = 10 000	<b>B</b> = 0.1 % <b>C</b> = 0.2 % <b>D</b> = 0.5 % <b>F</b> = 1.0 % <b>G</b> = 2.0 % <b>H</b> = 2.5 % <b>J</b> = 5.0 % <b>K</b> = 10 %
X = Sample, visually inspected parts loaded in matrix trays (4 % AQL)					



## Disclaimer

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