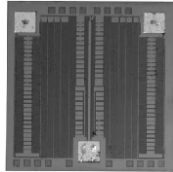


## Megohm Center-Tap Chip Resistor



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.

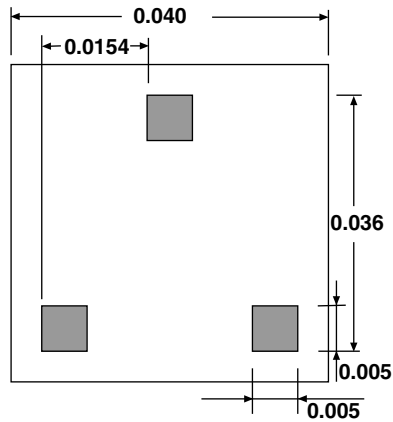
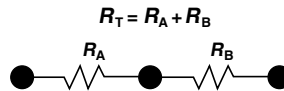
The CTMs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The CTMs are 100 % electrically tested and visually inspected to MIL-STD-883.

### 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

All product specifications and data are subject to change without notice.

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