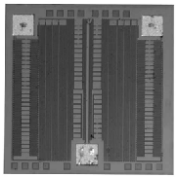
Megohm Center-Tap Chip Resistor



Product may not be to scale

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.

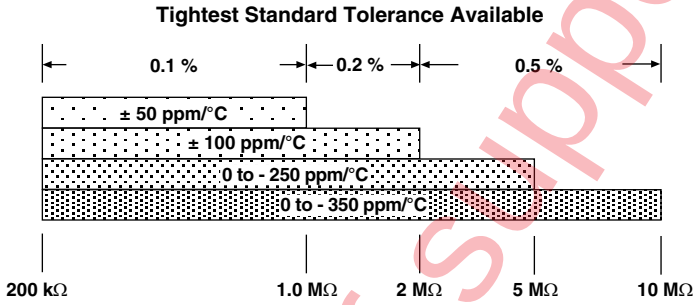
FEATURES

- 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

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



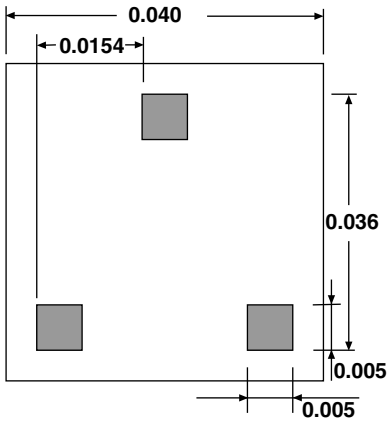
PROCESS CODE	
CLASS H*	CLASS K*
100	130
101	131
099	129
098	128

*MIL-PRF-38534 inspection criteria

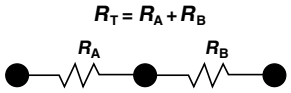
STANDARD ELECTRICAL SPECIFICATIONS

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^{12} 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



MECHANICAL SPECIFICATIONS 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_2
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

ORDERING INFORMATION

Example: 100 % visual, 2 MΩ, ± 1 %, ± 100 ppm/°C TCR, aluminum pads, class H visual inspection

W	**CTM**	**101**	**2000**	**3**	**F**
INSPECTION/ PACKAGING	PRODUCT FAMILY	PROCESS CODE	RESISTANCE VALUE	MULTIPLIER CODE	TOLERANCE CODE
W = 100 % visually inspected parts in matrix trays per MIL-STD-883 X = Sample, visually inspected parts loaded in matrix trays (4 % AQL)		See Process Code table	Use first 4 digits significant digits of the resistance (R_T)	**2** = 100 **3** = 1000 **4** = 10 000	**B** = 0.1 % **C** = 0.2 % **D** = 0.5 % **F** = 1.0 % **G** = 2.0 % **H** = 2.5 % **J** = 5.0 % **K** = 10 %

Disclaimer

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

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.