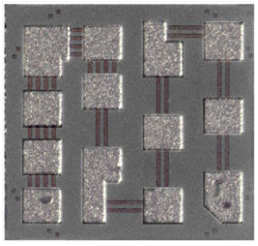
Wire Bondable Thin Film Multi-Tap Resistor Arrays



Product may not be to scale

The MTR multi-tap resistors, available in two formats, offer eleven taps allowing the user to select specified increments a wide range of values. The desired resistance value is obtained by bonding the wires to the appropriate pads.

These chips are manufactured using Vishay Electro-Films (EFI) sophisticated Thin Film equipment and manufacturing technology. The MTRs are 100 % electrically tested and visually inspected to MIL-STD-883.

FEATURES

- Wire bondable
- Selectable values by wire bonding
- Chip size: 0.030" x 0.030"
- Case: 0303
- Standard resistance range: 100 Ω to 24 kΩ or 800 Ω to 240 kΩ
- Resistor material: Tantalum nitride, self-passivating
- Oxidized silicon substrate for good power dissipation
- Ideally suited for hybrid prototyping
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

APPLICATIONS

The MTR series of multi-tap resistor chips are designed to satisfy the requirements of prototype development and circuit trimming in hybrid packages through selective wire-bonding.

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES			
PARAMETER		**VALUE**	**UNIT**
Total Resistance Range	Format A Format B	100, 200, 400, 800, 2.4K, 8K, 24K 800, 2.4K, 8K, 24K, 80K, 160K, 240K	Ω
7 Resistors Between Pads 1 and 8 5 Resistors Between Pads 8 and 13		Each 12.5 % of total resistance Each 2.5 % of total resistance	
Standard Tolerances		± 10, ± 20 of total resistance of all 12 resistors	%
TCR		± 100	ppm/°C

Example:

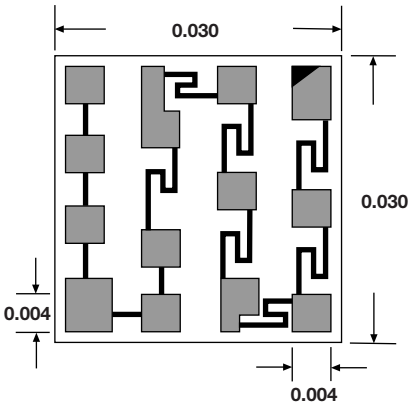
When the total resistance value is 8 kΩ, the resistors between pads 8 and 13 are 200 Ω each, and the resistors between pads 1 and 8 are 1 kΩ each.

STANDARD ELECTRICAL SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
TCR Tracking Between Elements	± 5	ppm/°C
Noise, MIL-STD-202, Method 308	- 30 typ.	dB
Moisture Resistance, MIL-STD-202, Method 106	± 0.5 max. $\Delta R/R$	%
Stability, 1000 h, + 125 °C, 125 mW	± 0.5 max. $\Delta R/R$	%
Operating Temperature Range	- 55 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.	Ω
Operating Voltage	100 max.	V
DC Power Rating at + 70 °C (Derated to Zero at + 175 °C)	0.250, total *R*	W
5 x Rated Power Short-Time Overload, + 25 °C, 5 s	± 0.25 max. $\Delta R/R$	%

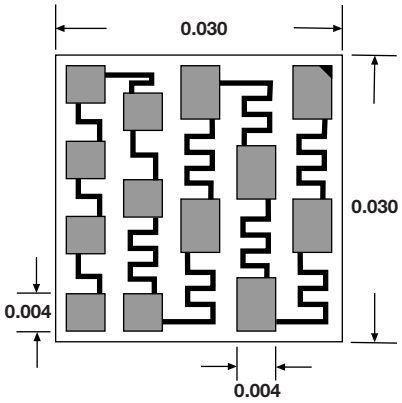
For technical questions, contact: efi@vishay.com

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DIMENSIONS in inches

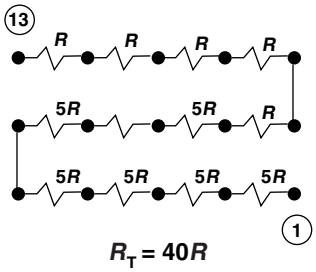


Format A



Format B

SCHEMATIC



$R_T = 40R$

MECHANICAL SPECIFICATIONS

PARAMETER	
Chip Size	0.030" x 0.030" ± 0.003" (0.762 mm x 0.762 mm ± 0.076 mm)
Chip Thickness	0.010" ± 0.002" (0.254 mm ± 0.05 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum SiO2
Resistor Material	Tantalum nitride, self-passivating
Bonding Pads	0.004" x 0.004" (0.10 mm x 0.10 mm)
Number of Top Pads	13
Pad Material	10 kÅ minimum aluminum
Backing	None, lapped semiconductor silicon

GLOBAL PART NUMBER INFORMATION

Global Part Number: MTR24001KAKANHWS

Global Part Number Description: MTR 24K 10 %, format A, 100 ppm/°C, Al pads, no back metal, class H, WS

M	T	R	2	4	0	0	1	K	A	K	A	N	H	W	S

MODEL	RESISTANCE	RESISTANCE MULTILPLIER CODE	TOL. CODE (%)	FORMAT	TCR (ppm/°C)	TERMINATION	BACK METAL	VISUAL CLASS	PACKAGING CODE
MTR	First 4 digits are significant figures of resistance	**A** = 0.1 **0** = 1 **1** = 10 **2** = 100	**J** = 5.0 **K** = 10 **M** = 20 **L** = 25	**A** = Form A **B** = Form B	**K** = ± 100 **M** = ± 250 **R** = 0/- 250	**G** = Gold **A** = Aluminum	**G** = Gold **N** = None	**H** = Class H **K** = Class K	**WS** = Waffle pack 100 min, 1 mult

Historical Part Number: WMTR05024001K (will continue to be accepted)

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