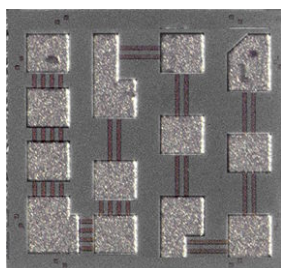


Wire Bondable Thin Film Multi-Tap Resistor Arrays



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 k Ω or 800 Ω to 240 k Ω
- 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



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

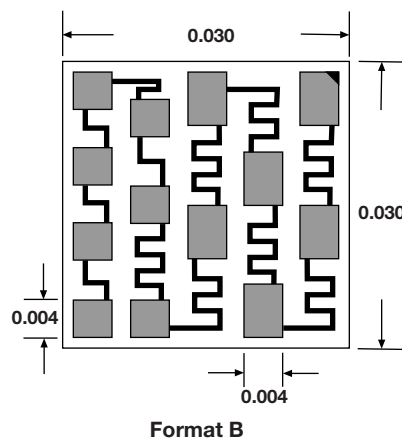
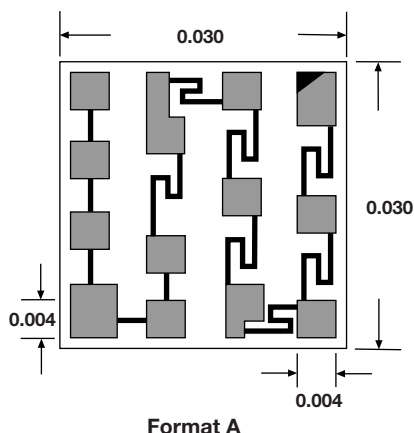
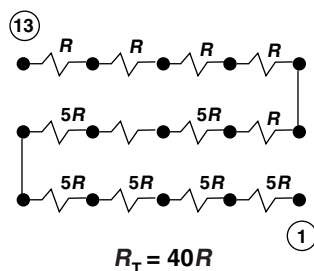
PARAMETER	VALUE	UNIT
Total Resistance Range Format A Format B	100, 200, 400, 800, 2.4K, 8K, 24K 800, 2.4K, 8K, 24K, 80K, 160K, 240K	Ω
7 Resistors Between Pads 1 and 8 5 Resistors Between Pads 8 and 13	Each 12.5 % of total resistance Each 2.5 % of total resistance	
Standard Tolerances	$\pm 10, \pm 20$ of total resistance of all 12 resistors	%
TCR	± 100	ppm/ $^{\circ}$ C

Example:

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

STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	VALUE	UNIT
TCR Tracking Between Elements	± 5	ppm/ $^{\circ}$ 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 $^{\circ}$ C, 125 mW	± 0.5 max. $\Delta R/R$	%
Operating Temperature Range	- 55 to + 125	$^{\circ}$ C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	± 0.25 max. $\Delta R/R$	%
High Temperature Exposure +150 $^{\circ}$ 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 $^{\circ}$ C (Derated to Zero at +175 $^{\circ}$ C)	0.250, total R	W
5 x Rated Power Short-Time Overload, +25 $^{\circ}$ C, 5 s	± 0.25 max. $\Delta R/R$	%

DIMENSIONS in inches

SCHEMATIC

MECHANICAL SPECIFICATIONS

PARAMETER	
Chip Size	0.030" x 0.030" $\pm$ 0.003" (0.762 mm x 0.762 mm $\pm$ 0.076 mm)
Chip Thickness	0.010" $\pm$ 0.002" (0.254 mm $\pm$ 0.05 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum SiO ₂
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
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MODEL	RESISTANCE	RESISTANCE MULTIPLIER 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 = $\pm$ 100 M = $\pm$ 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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