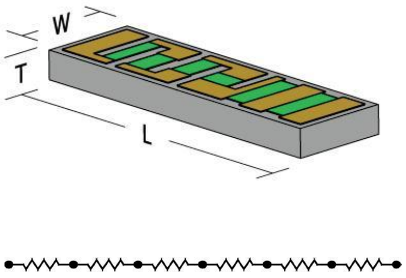
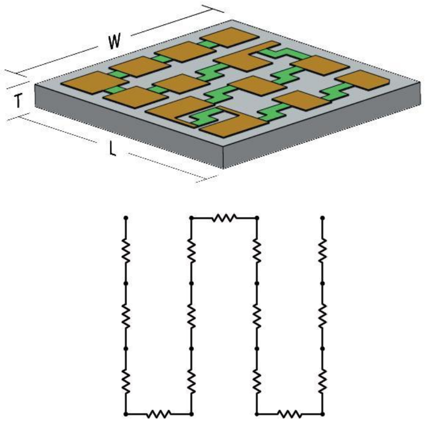
MULTI-TAP RESISTORS

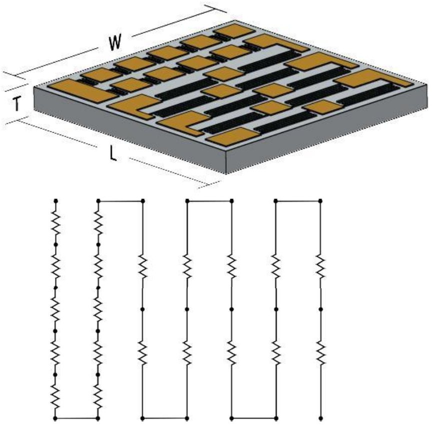
MSMT 116



MSMT 117



MSMT 125



Mini-Systems, Inc. **MSMT** series chip Multi-Tap resistor arrays provide the design engineer a wide range of resistance values on a single chip. These chips are often used in circuits where **precision adjustments** are required. Connection to associated circuitry is accomplished using wire bonding. The MSMT series offers **high stability, low noise, and low T.C.R.** of Mini-Systems, Inc. proven thin film technology.

RESISTANCE DISTRIBUTION

MSMT116*	(R1 = R2 = Rt / 24), (R3 = Rt / 12), (R4 = R5 = Rt / 4.8), (R6 = Rt / 2.4)
MSMT117*	(R1 to R7 = Rt / 8), (R8 to R12 = Rt / 40)
MSMT125*	(R1 to R10 = Rt / 110), (R11 to R20 = Rt / 11)

Rt = Total Resistance
*= Individual values are by design

DIMENSIONS

CASE SIZE	STYLE	TYPE	DIMENSIONS			RESISTANCE RANGE[2]		POWER RATING[1]
			L (±0.003") [±0.076mm]	W (±0.003") [±0.076mm]	T (±0.002") [±0.051mm]	Silicon	Alumina	
0602	MSMT	116	0.057" [1.448]	0.017" [0.432]	0.010" [0.254]	80Ω to 2kΩ	80Ω to 2kΩ	125mW
0303	MSMT	117	0.030" [0.762]	0.030" [0.762]	0.010" [0.254]	80Ω to 240kΩ	80Ω to 50kΩ	250mW
0303	MSMT	125	0.034" [0.864]	0.034" [0.864]	0.010" [0.254]	550Ω to 500kΩ	80Ω to 50kΩ	250mW

[1] Power Rating at 70°C Derated Linearly to 0% at 150°C
[2] Total Resistance

PART NUMBER DESIGNATION

MSMT —	**125** —	**S**	**T** —	**550R0**	**K** —	**G**
STYLE	**TYPE**	**SUBSTRATE**	**RESISTOR FILM**	**OHMIC VALUE**	**TOLERANCE**	**OPTION**
MSMT	116 117 125	S = Silicon A = Alumina	T = Tantalum Nitride	**5-Digit Number:** 1st 4 digits are significant with "R" as decimal point when required. 5th digit represents number of zeros.	J = ±5% K = ±10%	G = Gold Bond Pads E = Aluminum Pads GB = Gold Backside

EXAMPLE: MSMT-125-ST-550R0K-G
MSMT-125 Series, Silicon, Tantalum Nitride , 550Ω, ±10% Tol., Gold Bond Pads, Bare Backside

MSI
MINI SYSTEMS INC.
MADE IN AMERICA
SINCE 1968

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ISO 9001 CERTIFIED
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RoHS Compliant

8041 Rev. A

MULTI-TAP RESISTORS

GENERAL CHARACTERISTICS

Tolerance	±5% or ±10% (Applies to Total Resistance)
Current Noise	-30dB Max.
Voltage Rating	100V
Bond Pads	Gold (Standard), Aluminum (Optional)
Backside	Bare Substrate (Standard) Gold Back (Optional)
Operating Temperature	-55°C to +150°C
Storage Temperature	-65°C to +150°C

SUBSTRATE CHARACTERISTICS

SUBSTRATE MATERIAL	Dielectric Constant @ 1MHz	Thermal Conductivity W/m•K
99.6% Alumina	9.9	28
Silicon (with 12kÅ SiO_2)	N/A (SiO_2 3.9)	149 (SiO_2 1.38)

RESISTOR CHARACTERISTICS

RESISTOR FILM	Passivation	TCR
Tantalum Nitride	Ta_2O_5 (Self Passivating)	±150 ppm/°C

PERFORMANCE SPECIFICATIONS

PROPERTY	TEST CONDITION	REQUIRED LIMITS	MSI TYPICAL LIMITS
SHORT TERM OVERLOAD	2.5xWVDC(6.25xRATED POWER)MIL-PRF-55342, +25°C, 5 SEC	±0.25 MAX ΔR/R	±0.10 MAX ΔR/R
HIGH TEMP EXPOSURE	+150°C, 100HRS	±0.20 MAX ΔR/R	±0.03 MAX ΔR/R
THERMAL SHOCK	MIL-STD 202, METHOD 107	±0.25 MAX ΔR/R	±0.10 MAX ΔR/R
MOISTURE RESISTANCE	MIL-STD 202, METHOD 106	±0.40 MAX ΔR/R	±0.10 MAX ΔR/R
STABILITY	MIL-STD 202 METHOD 108, 2000 HRS, +70°C, RATED POWER	±0.50 MAX ΔR/R	±0.10 MAX ΔR/R

All MSMT Series parts are produced on the same manufacturing line using the same materials and processes as parts manufactured to MIL-PRF-55342