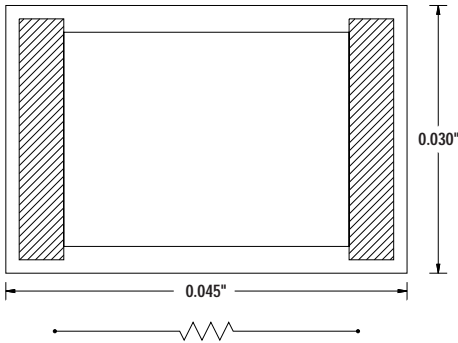


# THIN FILM POWER RESISTORS

## MSPR 1 SERIES; 500mWATT POWER RATING



### MECHANICAL DATA

SIZE	0.045" x 0.030" x 0.010" ( $\pm 0.003$ ")
SUBSTRATE	SILICON
RESISTOR	TANTALUM NITRIDE
BOND PADS	15,000 Å MINIMUM GOLD 10,000 Å MINIMUM ALUMINUM
BOND PAD SIZE	0.005" x 0.026" TYPICAL; SUITABLE FOR MULTIPLE TIE POINTS
BACKSIDE SURFACE	BARE SUBSTRATE; GOLD BACK OPTIONAL

### ELECTRICAL DATA

RESISTANCE RANGE	2Ω TO 250KΩ STANDARD RANGE
TOLERANCES	0.1%, 0.5%, 1%, 2%, 5%, 10%
T.C.R.	$\pm 150$ ppm/°C STANDARD

### SERIES DATA

CURRENT NOISE	101Ω TO TO 50KΩ: -40dB ≤ 100Ω: -30dB
DIELECTRIC BREAKDOWN	400 V MIN.
INSULATION RESISTANCE	10 <sup>12</sup> Ω MIN.
OPERATING VOLTAGE	100 V MAX.
POWER RATING	500 mW (70°C DERATED LINEARLY TO 150°C) P = E <sup>2</sup> /R
SHORT TERM OVERLOAD	5X RATED POWER, 25°C, 5 SEC., $\pm 0.25\%$ MAX. $\Delta R/R$ : $\pm 0.1\%$ MSI TYPICAL
HIGH TEMP EXPOSURE	150°C, 100 HRS., $\pm 0.25\%$ MAX. $\Delta R/R$ : $\pm 0.03\%$ MSI TYPICAL
THERMAL SHOCK	MIL-STD 202, METHOD 107F, $\pm 0.25\%$ MAX. $\Delta R/R$ : $\pm 0.1\%$ MSI TYPICAL
MOISTURE RESISTANCE	MIL-STD 202, METHOD 106, $\pm 0.5\%$ MAX. $\Delta R/R$ : $\pm 0.1\%$ MSI TYPICAL
STABILITY	1000 HRS., 70°C, 100% power, $\pm 0.5\%$ MAX. $\Delta R/R$ : $\pm 0.1\%$ MSI TYPICAL
OPERATING TEMP RANGE	-55°C TO +125°C
STRAY DISTRIBUTED CAPACITANCE	2pF

### PART NUMBER DESIGNATION

MSPR 1	S	T	—	XXXXX	X	—	X
SERIES	SUBSTRATE	RESISTIVE FILM		OHMIC VALUE	TOLERANCE		OPTION DESIGNATOR
	S = Silicon	T = Tantalum Nitride		5-Digit Number: 1st 4 Digits Are Significant With "R" As Decimal Point When Required. 5th Digit Represents Number of Zeros.	B = 0.1% D = 0.5% F = 1% G = 2% J = 5% K = 10%		E = Aluminum Bond Pads F = $\pm 100$ ppm/°C GB = Gold Backside Gold Pads G = (always used when no other option is required)

EXAMPLES: MSPR1 ST-10001F-E = 10KΩ,  $\pm 1\%$ , Aluminum Pads Standard T.C.R.



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