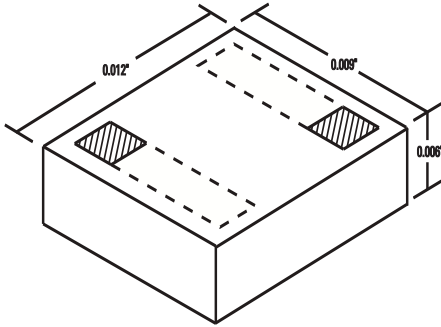


THIN FILM CHIP RESISTOR

MSMR1 SERIES



CHIP RESISTORS

MECHANICAL DATA

SIZE	0.012" x 0.009" x 0.006" (± 0.001 ")
SUBSTRATE	(S) SILICON, (A) ALUMINA, (Q) QUARTZ, OR (G) GLASS
RESISTOR	NICHROME OR TANTALUM NITRIDE
BONDING PADS	15,000 Å MINIMUM GOLD 10,000 Å MINIMUM: ALUMINUM OPTIONAL
BACKSIDE SURFACE	BARE SUBSTRATE GOLD BACK OPTIONAL

ELECTRICAL DATA

RESISTANCE RANGE	NICHROME	TANTALUM NITRIDE
SILICON, QUARTZ, GLASS	2 Ω TO 75K Ω *	2 Ω TO 75K Ω *
ALUMINA	2 Ω TO 15K Ω	2 Ω TO 15K Ω
TOLERANCES	0.01% TO 10% (Value Dependent)	0.01% TO 10% (Value Dependent)
T.C.R.	± 25 ppm/ $^{\circ}$ C STANDARD OPTIONAL TO ± 5 ppm/ $^{\circ}$ C (S, Q, G)	± 150 ppm/ $^{\circ}$ C STANDARD OPTIONAL TO ± 10 ppm/ $^{\circ}$ C (S, Q, G) OPTIONAL TO ± 25 ppm/ $^{\circ}$ C (A)

SERIES DATA

CURRENT NOISE	101 Ω TO 250K Ω : -40dB $\leq 100\Omega$, $\geq 250K\Omega$: -30dB
DIELECTRIC BREAKDOWN	400 V MIN.*
INSULATION RESISTANCE	10 ¹² Ω MIN.
OPERATING VOLTAGE	100 V MAX.
POWER RATING	50 mW (70 $^{\circ}$ C DERATED LINEARLY TO 150 $^{\circ}$ C) $P = \sqrt{E \cdot R}$
SHORT TERM OVERLOAD	5X RATED POWER, 25 $^{\circ}$ C, 5 SEC., $\pm 0.25\%$ MAX. $\Delta R/R$: 0.1% MSI TYPICAL
HIGH TEMP EXPOSURE	150 $^{\circ}$ C, 100 HRS., $\pm 0.25\%$ MAX. $\Delta R/R$: 0.03% MSI TYPICAL
THERMAL SHOCK	MIL-STD 202, METHOD 107F, $\pm 0.25\%$ MAX. $\Delta R/R$: 0.1% MSI TYPICAL
MOISTURE RESISTANCE	MIL-STD 202, METHOD 106, $\pm 0.5\%$ MAX. $\Delta R/R$: 0.1% MSI TYPICAL
STABILITY	1000 HRS., 70 $^{\circ}$ C, 125mW, $\pm 0.5\%$ MAX. $\Delta R/R$: 0.1% MSI TYPICAL
OPERATING TEMP RANGE	-55 $^{\circ}$ C TO +125 $^{\circ}$ C
STRAY DISTRIBUTED CAPACITANCE	
SILICON	2pF
ALUMINA	0.06pF
QUARTZ	0.02pF

PART NUMBER DESIGNATION

MSMR1	X	X	—	XXXXX	X	—	X
SERIES	SUBSTRATE	RESISTIVE FILM		OHMIC VALUE	TOLERANCE		OPTION DESIGNATOR (If Required)
	A = Alumina G = Glass Q = Quartz S = Silicon	N = Nichrome T = Tantalum Nitride		5-Digit Number: 1st 4 Digits Are Significant With "R" As Decimal Point When Required. 5th Digit Represents Number of Zeros.	S = 0.01%* Q = 0.05%* B = 0.1% D = 0.5% F = 1% G = 2% J = 5% K = 10%		A = ± 50 ppm/ $^{\circ}$ C B = ± 25 ppm/ $^{\circ}$ C C = ± 10 ppm/ $^{\circ}$ C D = ± 5 ppm/ $^{\circ}$ C E = Aluminum Bond Pads GB = Gold Backside F = ± 100 ppm/ $^{\circ}$ C G = Gold Pads (always used when no other option is required)



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THIN FILM DIVISION

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EXAMPLE: MSMR 1SN-50R00F-BGB = 0.012" x 0.009", Silicon Substrate, Nichrome Resistor, 50 Ω , $\pm 1\%$ Tol., ± 25 ppm/ $^{\circ}$ C, Gold Backside.