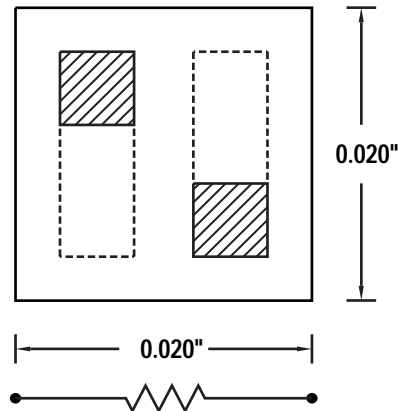


THIN FILM CHIP RESISTORS

MSTF 2 SERIES



----- Minimum bonding area
for < 100 Ohm resistance.
Layout varies with value.

MECHANICAL DATA

SIZE	0.020" x 0.020" (± 0.003 ") x 0.010" (± 0.003 ")
SUBSTRATE	SILICON, ALUMINA, QUARTZ, OR GLASS
RESISTOR	NICHROME OR TANTALUM NITRIDE
BOND 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 1.5M Ω	2 Ω TO 1.5M Ω
ALUMINA	2 Ω TO 300K Ω	2 Ω TO 300K Ω
ABSOLUTE TOLERANCE	0.1%, 0.5%, 1%, 2%, 5%, 10% TO 0.01% AVAILABLE	0.1%, 0.5%, 1%, 2%, 5%, 10% TO 0.01% AVAILABLE
T.C.R.		
SILICON, QUARTZ, GLASS	± 50 ppm/ $^{\circ}$ C STANDARD OPTIONAL TO ± 5 ppm/ $^{\circ}$ C	± 150 ppm/ $^{\circ}$ C STANDARD OPTIONAL TO ± 10 ppm/ $^{\circ}$ C
ALUMINA	± 50 ppm/ $^{\circ}$ C STANDARD OPTIONAL TO ± 25 ppm/ $^{\circ}$ C	± 150 ppm/ $^{\circ}$ C STANDARD OPTIONAL TO ± 25 ppm/ $^{\circ}$ C

SERIES DATA

CURRENT NOISE	101 Ω TO 250K Ω : -40dB $\leq 100\Omega$, $\geq 250K\Omega$: -30dB
DIELECTRIC BREAKDOWN	400V MIN.
INSULATION RESISTANCE	10 ¹² Ω MIN.
OPERATING VOLTAGE	100 V MAX.
POWER RATING	
SILICON, ALUMINA	250mW (70 $^{\circ}$ C DERATED LINEARLY TO 150 $^{\circ}$ C) P = E ² /R
QUARTZ, GLASS	50mW (70 $^{\circ}$ C DERATED LINEARLY TO 150 $^{\circ}$ C) P = E ² /R
SHORT TERM OVERLOAD	5X RATED POWER, 25 $^{\circ}$ C, 5 SEC., ± 0.25 % MAX. Δ R/R: ± 0.1 % MSI TYPICAL
HIGH TEMP EXPOSURE	150 $^{\circ}$ C, 100 HRS., ± 0.25 % MAX. Δ R/R: ± 0.03 % MSI TYPICAL
THERMAL SHOCK	MIL-STD 202, METHOD 107F, ± 0.25 % MAX. Δ R/R: ± 0.1 % MSI TYPICAL
MOISTURE RESISTANCE	MIL-STD 202, METHOD 106, ± 0.5 % MAX. Δ R/R: ± 0.1 % MSI TYPICAL
STABILITY	1000 HRS., 70 $^{\circ}$ C, 100% POWER, ± 0.5 % MAX. Δ R/R: ± 0.1 % MSI TYPICAL
OPERATING TEMP RANGE	-55 $^{\circ}$ C TO +150 $^{\circ}$ C
STRAY DISTRIBUTED	
CAPACITANCE	
SILICON / NiCr OR TaN	2pF
ALUMINA / NiCr	0.06pF
ALUMINA / TaN	0.08pF
QUARTZ / NiCr	0.02pF
QUARTZ / TaN	0.05pF
GLASS / NiCr	0.04pF
GLASS / TaN	0.06pF

PART NUMBER DESIGNATION

MSTF 2	X	X	XXXXX	X	X
SERIES	SUBSTRATE	RESISTIVE FILM	OHMIC VALUE	TOLERANCE	OPTION
	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%* X = 0.02%* 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 F = ± 100 ppm/ $^{\circ}$ C G = Gold Bond Pads Std.** GB = Gold Backside

MSI
MINI-SYSTEMS, INC.
THIN FILM DIVISION

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DCN TF 101-D-0698

EXAMPLE: MSTF 2SN-50R00F-GB = 0.020" x 0.020", Silicon Substrate,
Nichrome Resistor, 50 Ω , ± 1 % Tol., ± 50 ppm/ $^{\circ}$ C, Gold Backside. www.DataSheet4U.com

* Value dependent on Alumina. Consult sales.

**Always used when no other option is required.