

# THIN FILM EMSBC SERIES

## EMSBC SERIES

The EMSBC series back contact chip resistor offers a space-saving design in a 0.020" x 0.020" size that requires only one wire bond. The chip backside provides the other contact with eutectic or conductive epoxy attachment to the substrate. Wire bonding is made to the notched pad on top of the chip. EMSBC's offer the high stability, low noise, and low T.C.R. of thin film while providing greater flexibility in hybrid designs. Excellent for use in Vision Recognition Systems.

### MECHANICAL DATA

SIZE	0.020" x 0.020" x 0.010" ( $\pm 0.003$ ")
SUBSTRATE	SILICON
RESISTOR	TANTALUM NITRIDE
BOND PADS	15,000 Å ALUMINUM TYPICAL (GOLD BOND PADS OPTIONAL)
BACKSIDE SURFACE	GOLD; Suitable for eutectic or conductive epoxy bonding

### ELECTRICAL DATA

RESISTANCE RANGE	5Ω TO 1.2MΩ
TOLERANCES	0.05%, 0.1%, 0.25%, 0.5%, 1%, 2%, 5%, 10% (RESISTOR VALUE DEPENDENT)
T.C.R.	$\pm 250$ ppm STANDARD; $\pm 100$ ppm Available $\geq 500\Omega$ , $\leq 250K\Omega$

### SERIES DATA

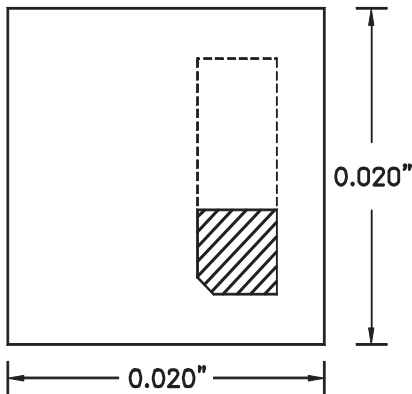
CURRENT NOISE	-35dB MAX. 100Ω TO 250KΩ TYPICAL -20dB MAX. < 100Ω OR > 250KΩ
DIELECTRIC BREAKDOWN	400 V MIN.
INSULATION RESISTANCE	$10^{12}\Omega$ MIN.
OPERATING VOLTAGE	100 V MAX.
POWER RATING	250 mW TOTAL (70°C DERATED LINEARLY TO 150°C) $P = E^2/R$
SHORT TERM OVERLOAD	5X RATED POWER, 25°C, 5 SEC., $\pm 0.25\%$ 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	SILICON 2pF

### PART NUMBER DESIGNATION

EMSBC 2	X	X	XXXXX	X	X
SERIES	SUBSTRATE	RESISTIVE FILM	OHMIC VALUE	TOLERANCE	OPTION
	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.	Q = 0.05% ** B = 0.10% ** C = 0.25% D = 0.5% F = 1% G = 2% J = 5% K = 10%	E = Aluminum Bond Pads Std. F = $\pm 100$ ppm/°C G = Gold Bond Pads Optional

EXAMPLES: EMSBC 2ST-10001F-E = 10KΩ,  $\pm 1\%$  STANDARD T.C.R.

\*\* Consult Sales for available values



Layout varies with value.

CHIP RESISTORS

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