

## LCD - EMI FILTER/TVS ARRAY

### APPLICATIONS

- ✓ LCD Displays
- ✓ Cellular Phones
- ✓ Notebooks
- ✓ Personal Digital Assistant (PDA)
- ✓ Ground Positioning System (GPS)
- ✓ SMART Cards

### IEC COMPATIBILITY (EN61000-4)

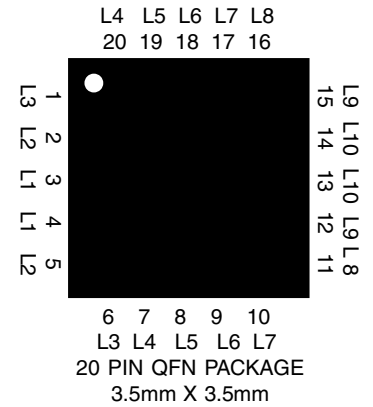
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

### FEATURES

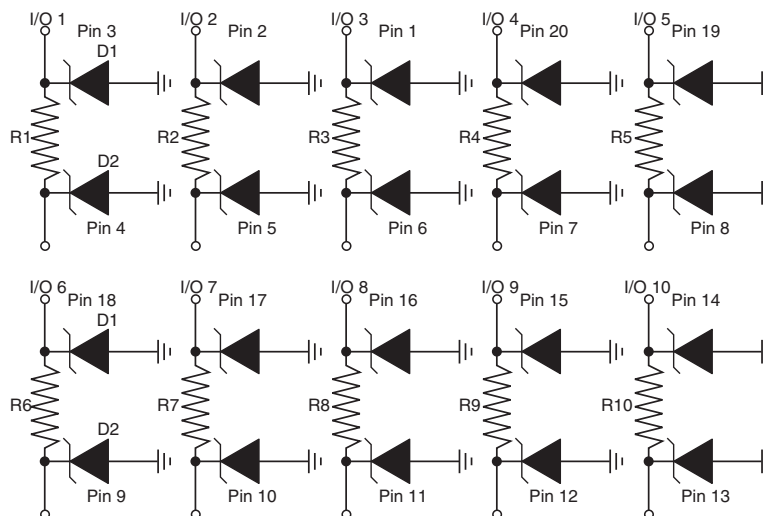
- ✓ ESD Protection > 25 kilovolts
- ✓ Bidirectional EMI Filtering/TVS Low Pass Filters
- ✓ Low Insertion Loss: -3db Roll-Off @ 140MHz
- ✓ Protects Up to Ten(10) Data Lines
- ✓ RoHS Compliant on Lead-Free Versions

### MECHANICAL CHARACTERISTICS

- ✓ QFN-20 Package
- ✓ Available in Tin-Lead or Lead-Free Pure-Tin Plating(Annealed)
- ✓ Solder Reflow Temperature:
  - Tin-Lead - Sn/Pb, 85/15: 240-245°C
  - Pure-Tin - Sn, 100: 260-270°C
- ✓ Flammability rating UL 94V-0
- ✓ Marking: Logo, Marking Code and Pin One Defined By Dot on Package



### PIN CONFIGURATION



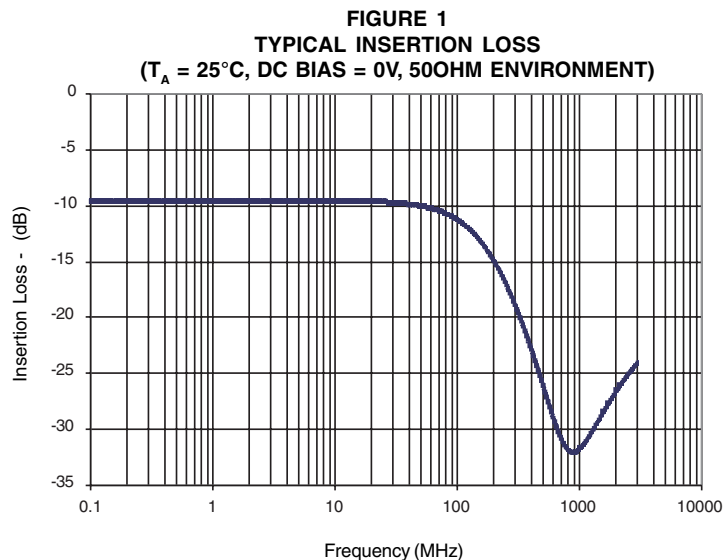
Note: Center Tab as the Ground.

## DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	$T_J$	-40°C to 85°C	°C
Storage Temperature	$T_{STG}$	-55°C to 150°C	°C
DC Power Per Resistor	P	100	mW
Typical Resistance @ $\pm 15\%$	R	200	OHMS
Soldering Temperature for 10 seconds	$T_L$	265°C	°C

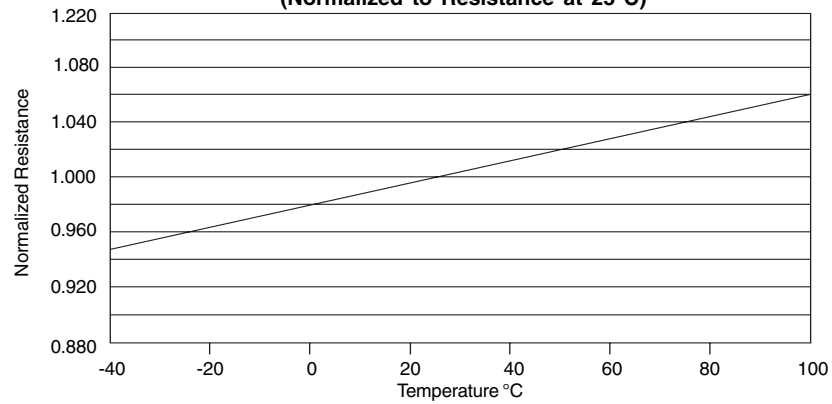
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified							
PART NUMBER	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM REVERSE LEAKAGE CURRENT	TYPICAL FORWARD VOLTAGE	MINIMUM ATTENUATION	CUT-OFF FREQUENCY (50 Ohms I/O ZERO BIAS)	TYPICAL CAPACITANCE PER LINE (See Note 1)
	$V_{WM}$ VOLTS	@ 1mA $V_{(BR)}$ VOLTS	@ 3V $I_D$ $\mu A$	@ 10mA $V_F$ VOLTS	@ 800-3000 MHz dB	$f_c$ MHz	@ 2.5V, 1 MHz C pF
EM10Q-200	5.0	6.0	0.1	0.8	25	140	20

**Note 1:**  $\pm 20\%$  tolerance.

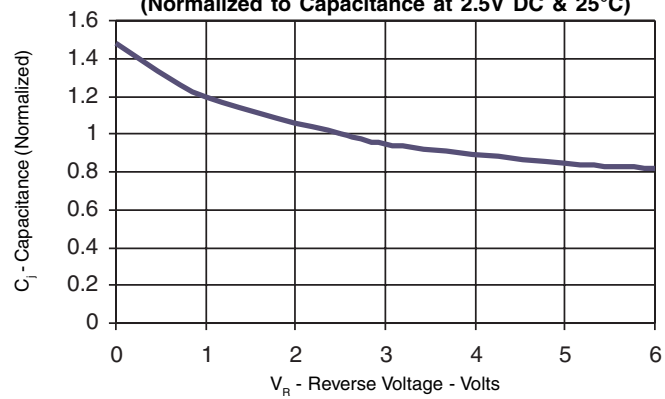


## GRAPHS

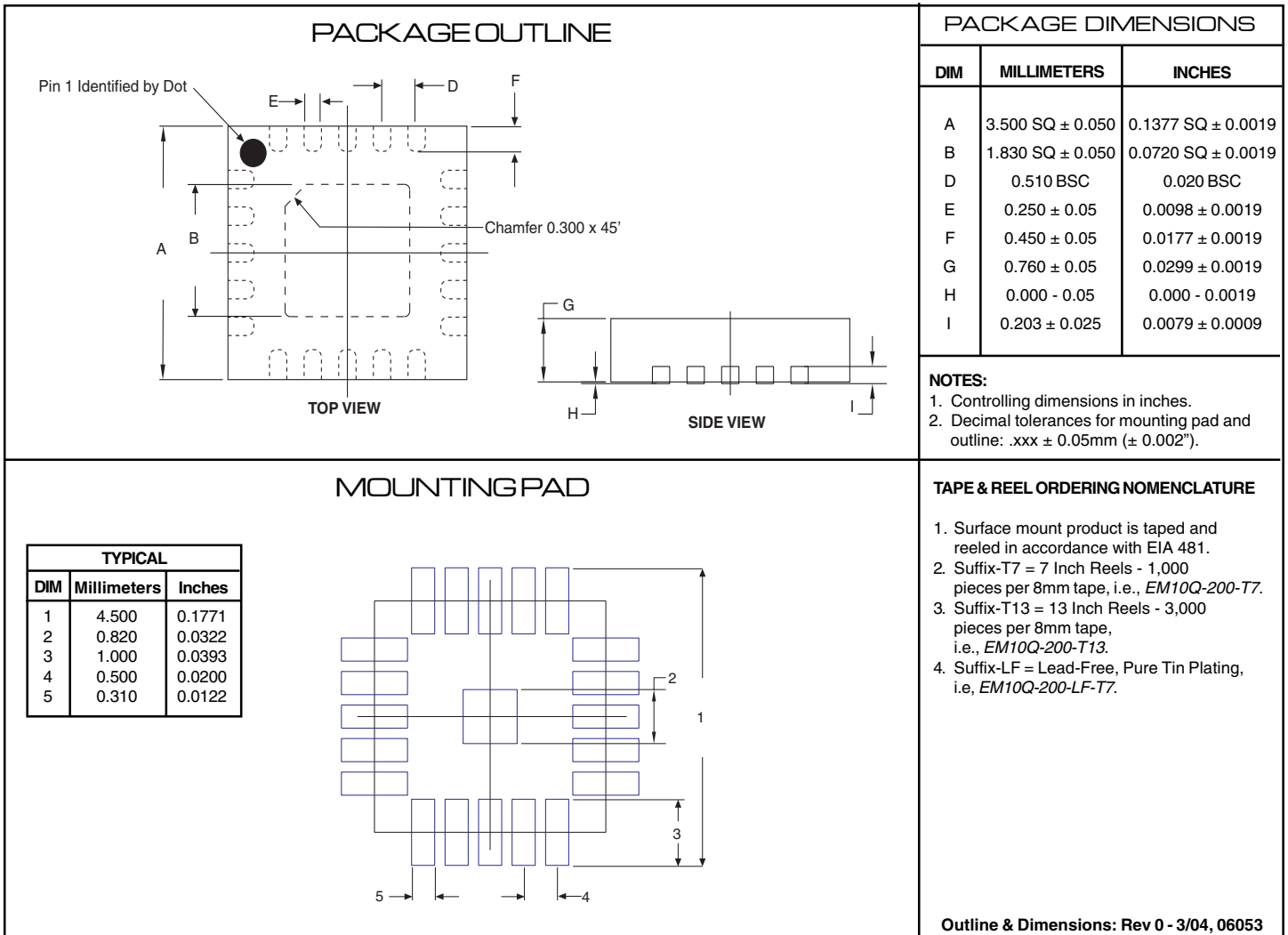
**FIGURE 2**  
**RESISTANCE VS TEMPERATURE**  
(Normalized to Resistance at 25°C)



**FIGURE 3**  
**CAPACITANCE VS REVERSE VOLTAGE**  
(Normalized to Capacitance at 2.5V DC & 25°C)



## PACKAGE OUTLINE & DIMENSIONS



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