

**EMI FILTER/TVS ARRAY****APPLICATIONS**

Integrated I/O Protection & Filtering Solutions For:

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

**IEC COMPATIBILITY (EN61000-4)**

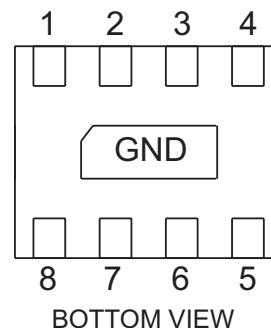
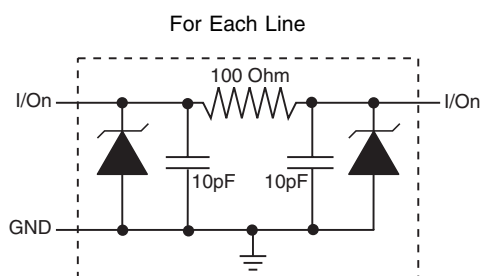
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

**FEATURES**

- ✓ ESD Protection > 25 kilovolts
- ✓ EMI Filtering/TVS Low Pass Filters
- ✓ > 25db Attenuation from 800MHz to 3GHz
- ✓ Protects Up to Four(4) Data Lines
- ✓ RoHS Compliant in Lead-Free Versions

**MECHANICAL CHARACTERISTICS**

- ✓ DFN-8 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
- ✓ Device Marking: Marking Code
- ✓ 8mm Tape and Reel Per EIA Standard 481

**PIN CONFIGURATION**

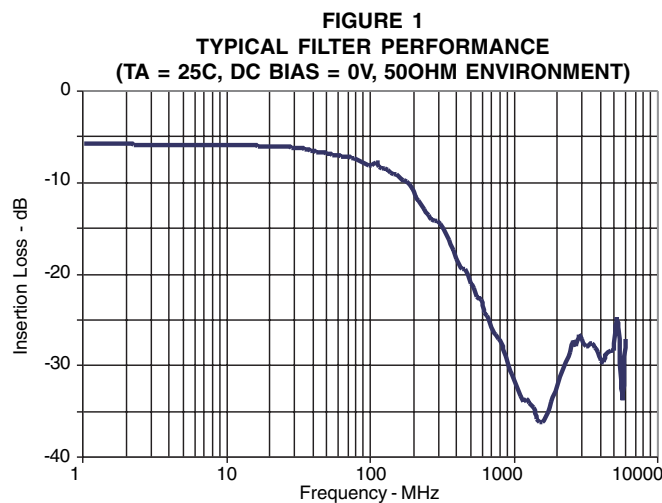
**Note:** I/O connected from pins 1-8, 2-7, 3-6 and 4-5.

## 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	400	mW
Typical Resistance @ ± 20%	R	100	OHMS
Soldering Temperature for 10 seconds	$T_L$	265°C	°C

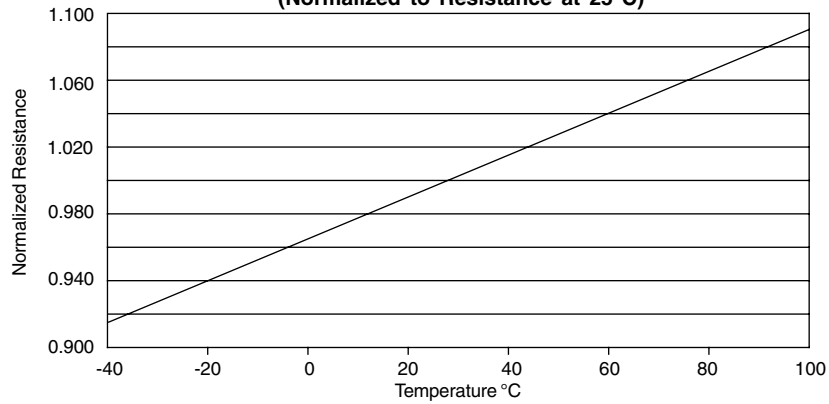
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified								
PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM REVERSE LEAKAGE CURRENT	TYPICAL FORWARD VOLTAGE	MINIMUM ATTENUATION	CUT-OFF FREQUENCY (50 OHMS I/O) ZERO BIAS	TYPICAL CAPACITANCE PER LINE (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, 1MHz C pF
EM4D-100L	M4D10L	5.0	6.0	0.1	0.8	25	150	20

**Note 1:** 30pF @ 0V, 1MHz, ±20% tolerance.

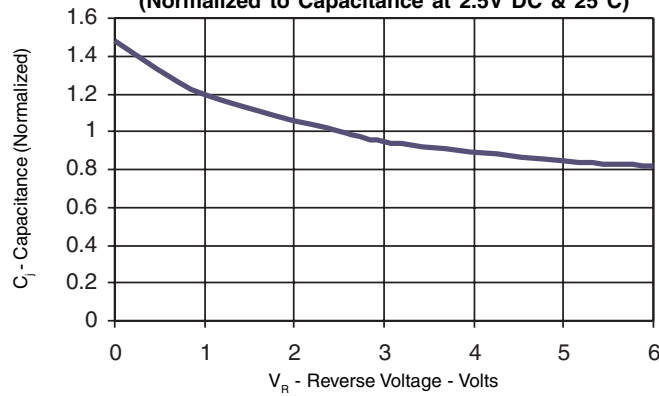


GRAPHS

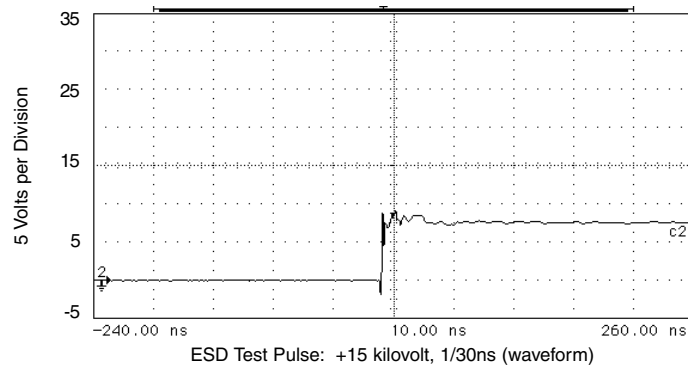
**FIGURE 2  
RESISTANCE VS TEMPERATURE  
(Normalized to Resistance at 25°C)**



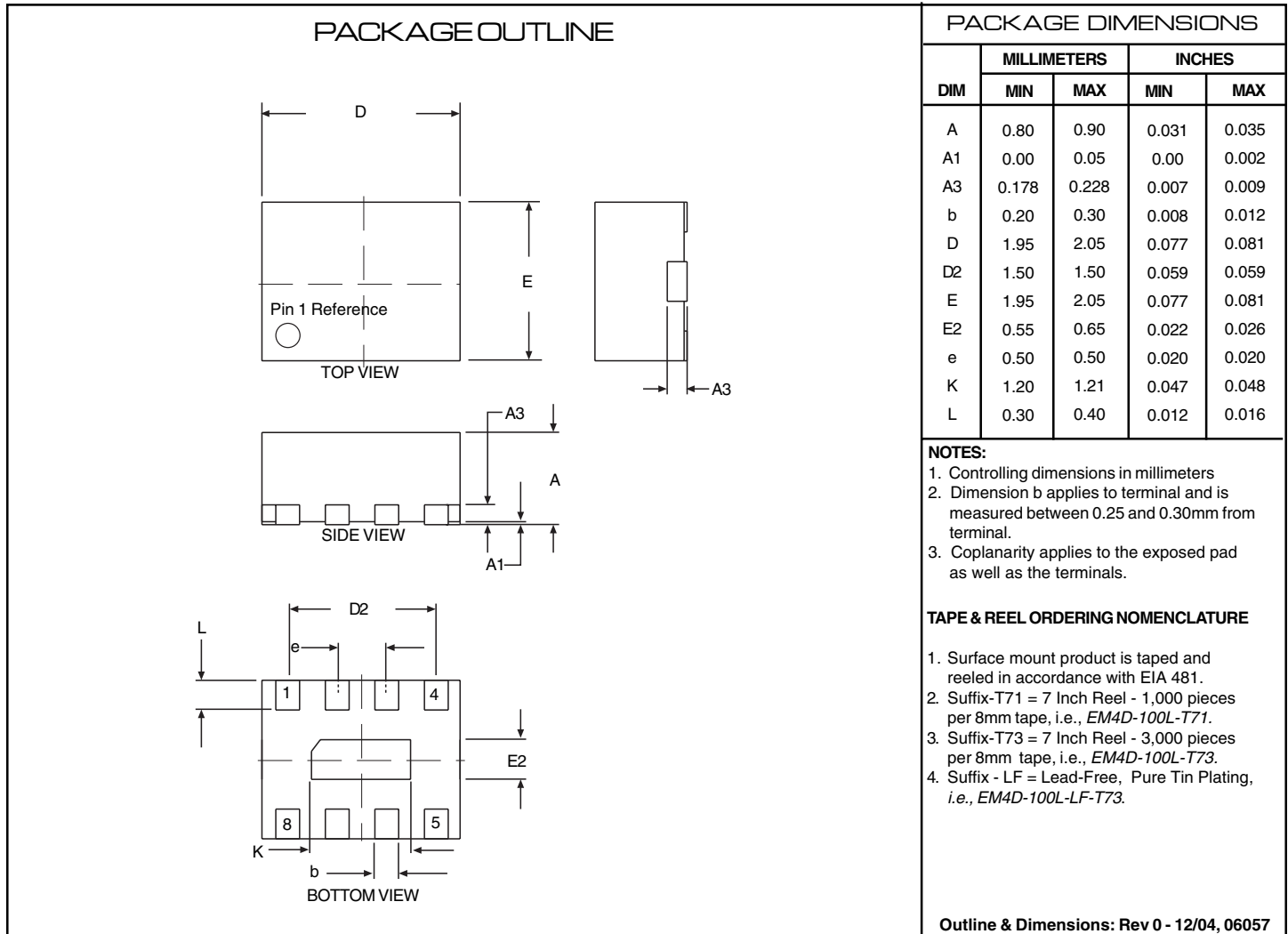
**FIGURE 3  
CAPACITANCE VS REVERSE VOLTAGE  
(Normalized to Capacitance at 2.5V DC & 25°C)**



**FIGURE 4  
OVERSHOOT & CLAMPING VOLTAGE**



## PACKAGE OUTLINE & DIMENSIONS



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