

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

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

**IEC COMPATIBILITY (EN61000-4)**

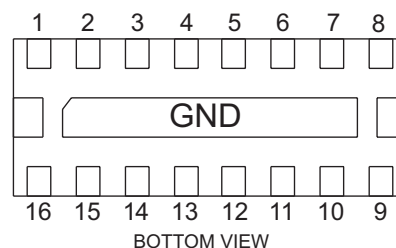
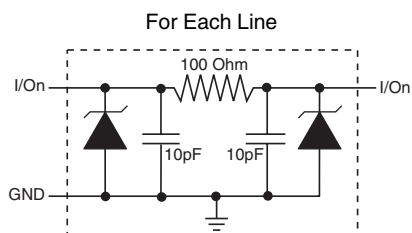
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

**FEATURES**

- ✓ ESD Protection > 25 kilovolts
- ✓ Bidirectional EMI Filtering/TVS Low Pass Filters
- ✓ Protects Up to Eight(8) Data Lines
- ✓ RoHS Compliant in Lead-Free Versions

**MECHANICAL CHARACTERISTICS**

- ✓ DFN-16 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
- ✓ Lead-Free Finishing Available
- ✓ Device Marking: Marking Code
- ✓ 12mm Tape and Reel Per EIA Standard 481

**PIN CONFIGURATION**

**Note:** I/O connected from pins 1-16, 2-15, 3-14, 5-12, 6-11, 7-10 and 8-9.

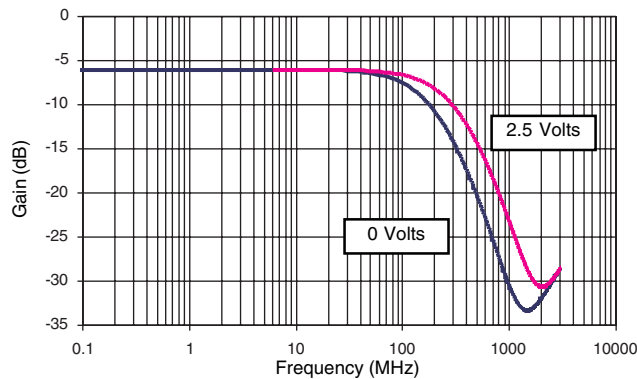
## DEVICE CHARACTERISTICS

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 @ ± 15%	R	100	OHMS

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
EM8D-100L	M8D 10L	5.0	6.0	0.1	0.8	25	150	20

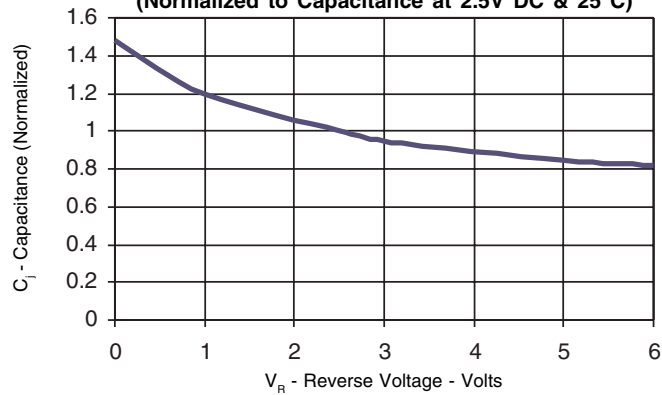
**Note 1:** ±20% tolerance.

**FIGURE 1  
INSERTION LOSS**

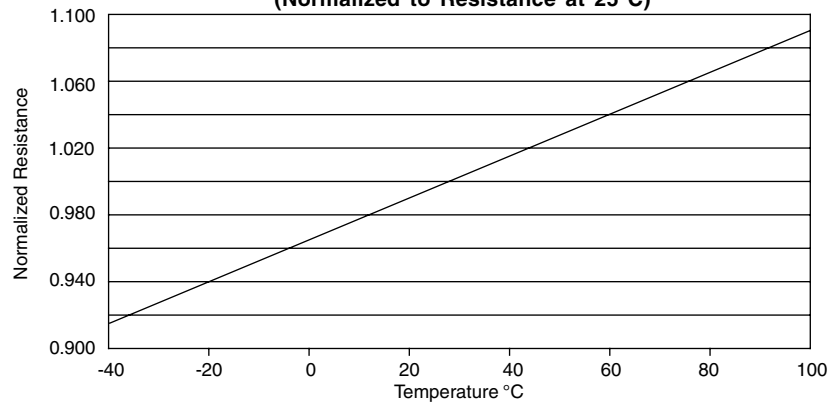


GRAPHS

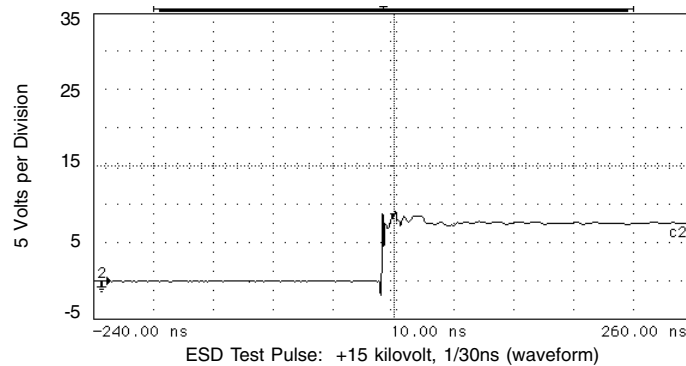
**FIGURE 2**  
**CAPACITANCE VS REVERSE VOLTAGE**  
 (Normalized to Capacitance at 2.5V DC & 25°C)



**FIGURE 3**  
**RESISTANCE VS TEMPERATURE**  
 (Normalized to Resistance at 25°C)



**FIGURE 4**  
**OVERSHOOT & CLAMPING VOLTAGE**



## PACKAGE OUTLINE & DIMENSIONS

**PACKAGE OUTLINE**

**PACKAGE DIMENSIONS**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.74	0.84	0.029	0.033
A1	0.00	0.05	0.00	0.002
A3	0.178	0.228	0.007	0.009
b	0.18	0.25	0.007	0.009
D	3.91	4.11	0.154	0.162
E	1.50	1.70	0.059	0.067
E2	0.40	0.50	0.016	0.020
E3	2.92	3.18	0.115	0.125
E4	3.07	3.33	0.121	0.131
e	0.46	0.56	0.018	0.022
K	0.33	0.40	0.130	0.160
L	0.18	0.28	0.007	0.011

**NOTES:**

- Controlling dimensions in millimeters
- Dimension b applies to terminal and is measured between 0.25 and 0.30mm from terminal.
- Coplanarity applies to the exposed pad as well as the terminals.

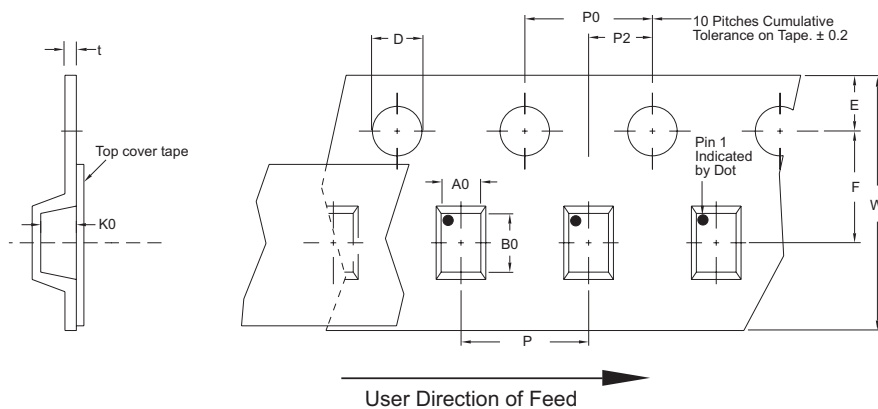
**TAPE & REEL ORDERING NOMENCLATURE**

- Surface mount product is taped and reeled in accordance with EIA 481.
- Suffix-T7 = 7 Inch Reel - 3,000 pieces per 12mm tape, i.e., *EM8D-100L-T7*
- Suffix-T13 = 13 Inch Reel - 12,000 pieces per 12mm tape, i.e., *EM8D-100L-T13*
- Suffix - LF = Lead-Free, Pure-Tin Plating, i.e., *EM8D-100L-LF-T7*.

**Outline & Dimensions: Rev 1 - 9/05, 06056**

Tape & Reel Specifications (Dimensions in millimeters)

Reel Dia.	Tape Width	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")/330mm(13")	12mm	1.9± 0.10	4.30± 0.10	1.00 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	12.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	0.25



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