

EMI FILTER/TVS ARRAY



DFN-16 PACKAGE

DESCRIPTION

The EM8D-100L is a DFN-16, 8 line low pass filter array with integrated TVS diodes. The EM8D-100L is designed to suppress unwanted EMI/RFI signals and provide ESD protection for high-speed data interfaces such as LCD displays and camera imagers for SMART phones.

With a desired cutoff frequency of 150MHz, the EM8D-100L provides good EMI/RFI attenuation better than 35dB in the 800MHz - 3GHz bandwidth. This blocks RF noises from GSM, DCS or Bluetooth which can affect the baseband chipset and other blocks. Coupled with the integrated TVS diodes, this device is able to meet IEC 61000-4-2 (ESD) and 61000-4-4 (EFT) immunity requirements.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- ESD Protection > 25 kilovolts
- EMI Filtering/TVS Low Pass Filters
- >25dB Attenuation from 800MHz to 3GHz
- Protects up to 8 Data Lines
- RoHS Compliant
- REACH Compliant

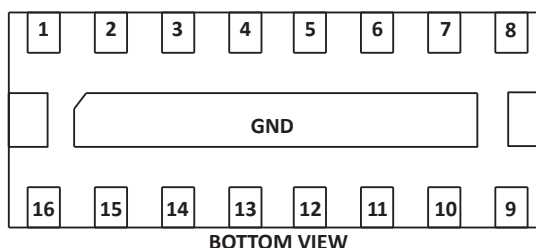
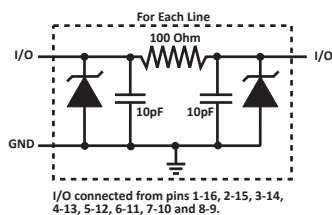
APPLICATIONS

- SMART Phones
- LCD Display Panel
- Portable Electronics
- SMART Cards

MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-16 Package
- Approximate Weight: 7 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 12mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

CIRCUIT DIAGRAM & PIN CONFIGURATION



TYPICAL DEVICE CHARACTERISTICS
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	T_A	-40 to 85	°C
Storage Temperature	T_{STG}	-55 to 150	°C
DC Power per Resistor	P	100	mW
Typical Resistance for 10 seconds	R	100	OHMs
Soldering Temperature for 10 seconds	T_L	265	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

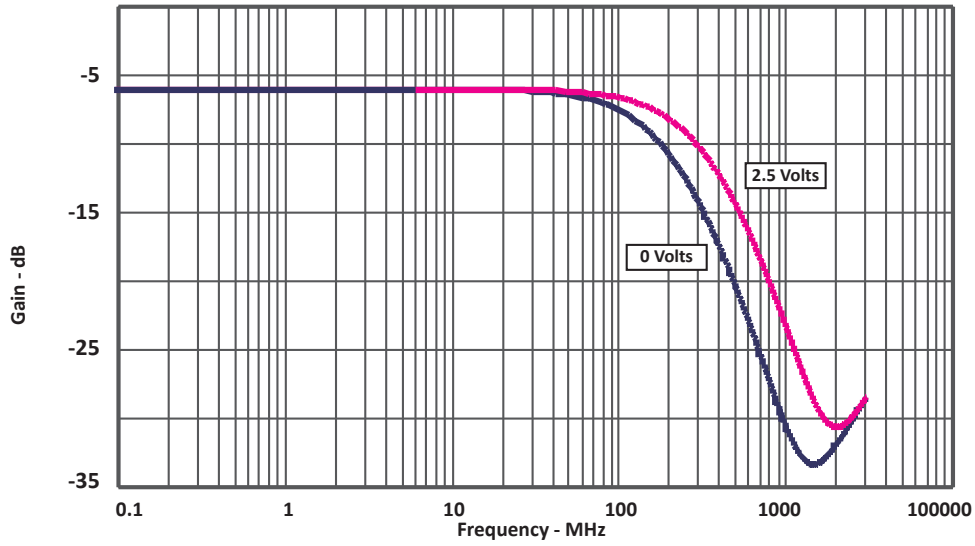
PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM REVERSE LEAKAGE CURRENT @ 3V I_D μA	TYPICAL FORWARD VOLTAGE @ 10mA V_F VOLTS	MINIMUM ATTENUATION @ 800-3000 MHz dB	CUT-OFF FREQUENCY (50 OHMS I/O) ZERO BIAS fC MHz	TYPICAL CAPACITANCE (Note 1) @2.5V, 1MHz C pF
EM8D-100L	M8D10L	5.0	6.0	0.1	0.8	25	150	20

NOTES

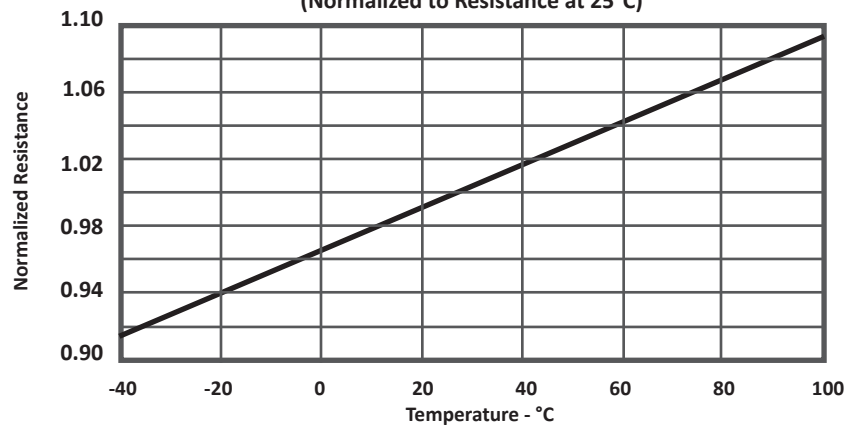
 1. $\pm 20\%$ tolerance.

TYPICAL DEVICE CHARACTERISTICS

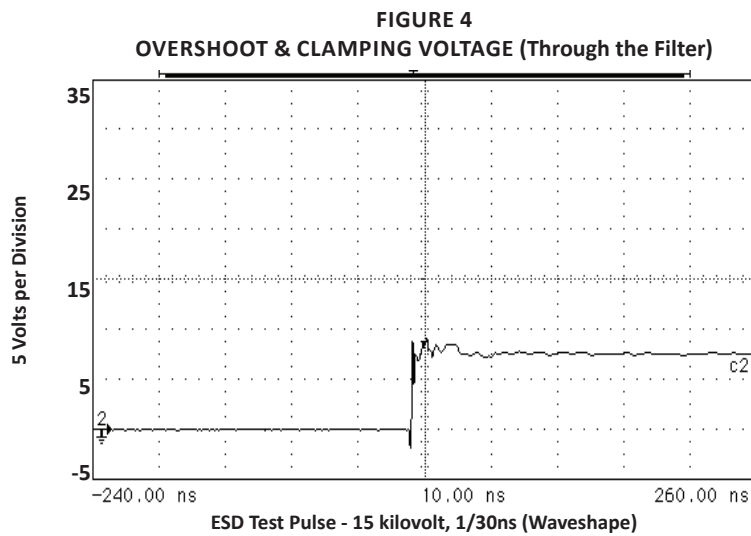
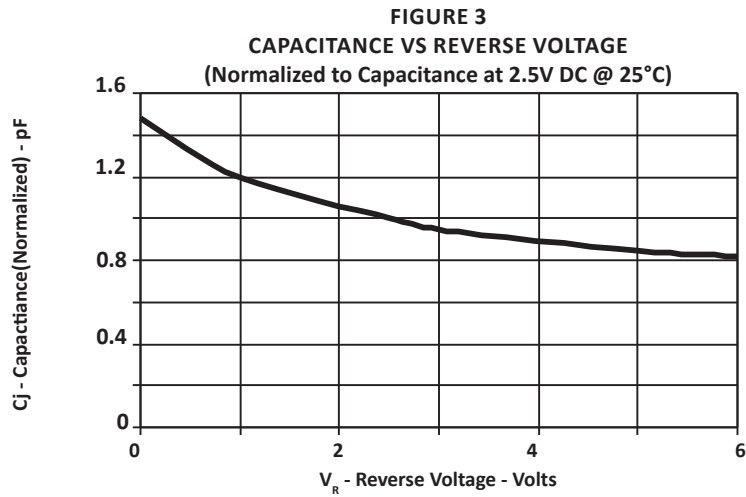
**FIGURE 1
INSERTION LOSS**



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



TYPICAL DEVICE CHARACTERISTICS



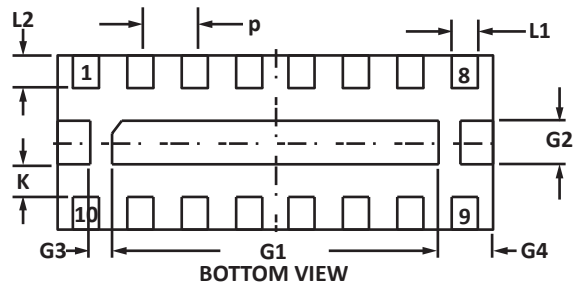
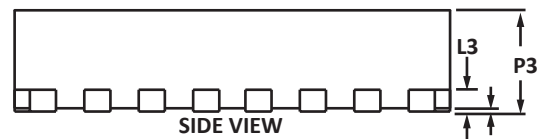
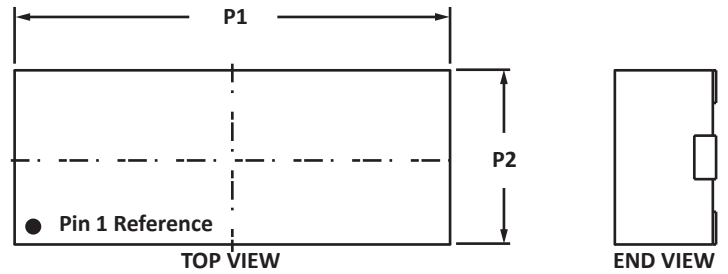
DFN-16 PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
P1	3.90	4.10	0.154	0.161
P2	1.50	1.70	0.059	0.067
P3	0.74	0.84	0.029	0.033
L1	0.21	0.28	0.008	0.011
L2	0.23	0.30	0.009	0.012
L3	0.178	0.228	0.007	0.009
p	0.50 BSC		0.020 BSC	
G1	2.90	3.10	0.114	0.122
G2	0.40	0.50	0.016	0.020
G3	0.15	0.25	0.006	0.010
G4	0.25	0.35	0.010	0.014
A1	0.00	0.05	0.00	0.002
K	0.33	0.40	0.013	0.016

NOTES

- Controlling dimension: millimeters.
- Dimensioning and tolerances per ANSI Y14.M, 1985.
- Dimension L1 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.

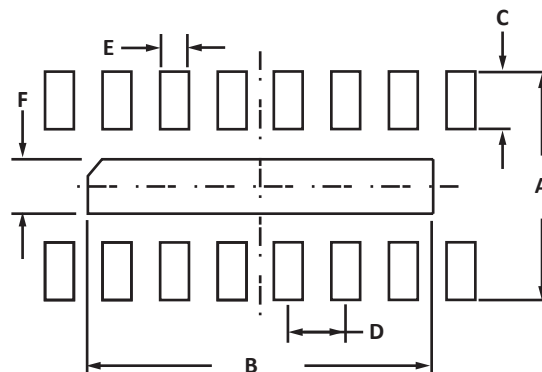


PAD LAYOUT DIMENSIONS

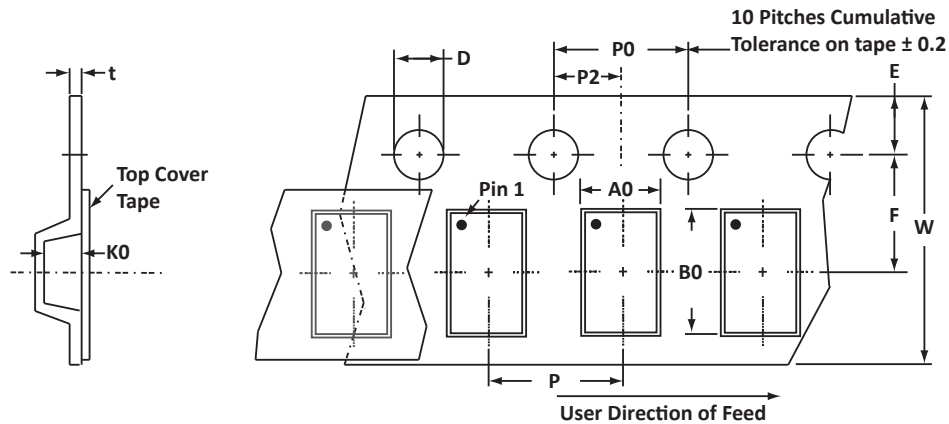
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.86	1.96	0.073	0.077
B	3.10	3.30	0.122	0.130
C	0.46	0.56	0.018	0.022
D	0.50 BSC		0.020 BSC	
E	0.23	0.33	0.009	0.013
F	0.42	0.51	0.017	0.021

NOTES

- Controlling dimension: millimeters.



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	12mm	1.90 ± 0.10	4.30 ± 0.10	0.80 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	5.50	12.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	0.30 ± 0.05

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T73 = 7" Reel - 3,000 pieces per 8mm tape.
- Marking on Part - marking code (see page 2).

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
EM8D-100L	-LF	-T73	3,000	7"	n/a

This device is only available in a Lead-Free configuration.

COMPANY INFORMATION

COMPANY PROFILE

In business more than 25 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers LED wafer die for ESD protection and related high frequency products. ProTek Devices is ISO 9001:2015 certified.

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