

EMI FILTER/TVS ARRAY



DFN-8 PACKAGE

DESCRIPTION

The EM4D-100L is a 2mm square DFN-8, 4 line low pass filter array with integrated TVS diodes. The EM4D-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 EM4D-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 4 Data Lines
- RoHS Compliant
- REACH Compliant

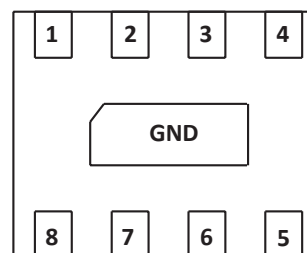
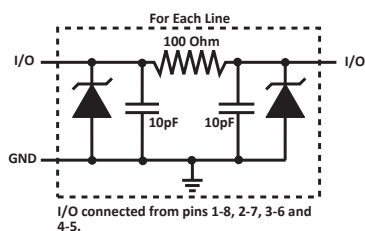
APPLICATIONS

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

MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-8 Package
- Approximate Weight: 2 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

CIRCUIT DIAGRAM & PIN CONFIGURATION



BOTTOM VIEW

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	400	mW
Typical Resistance ±20%	R	100	OHMs
Soldering Temperature for 10 seconds	T_L	265	°C

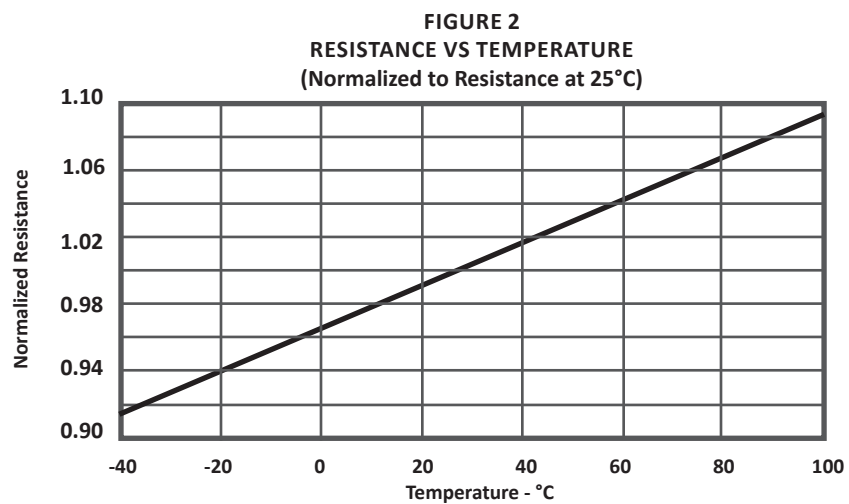
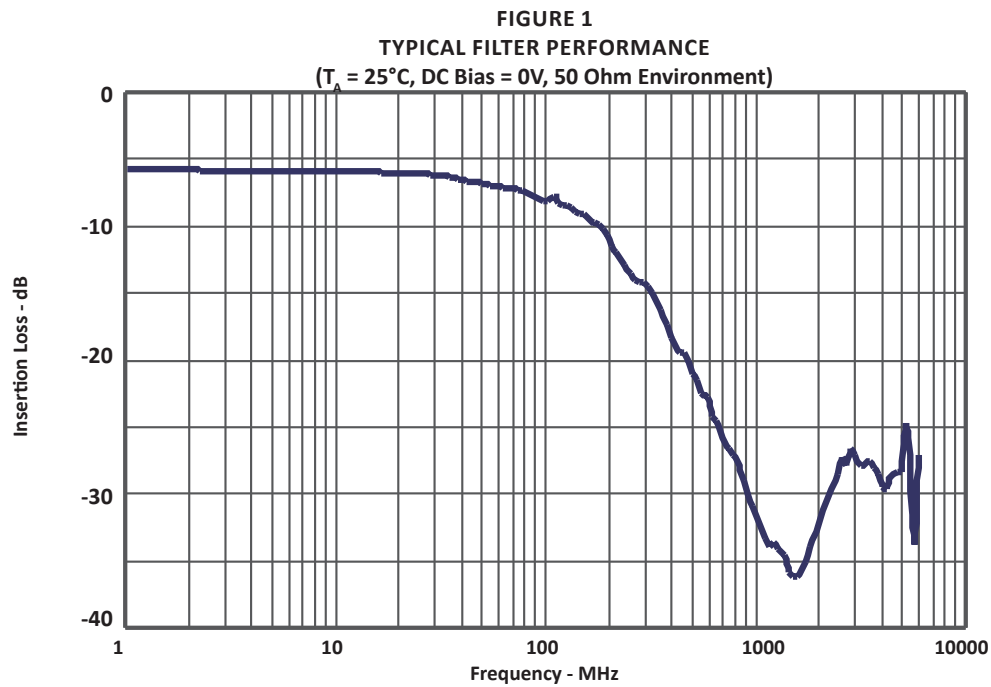
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM REVERSE LEAKAGE CURRENT	TYPICAL FORWARD VOLTAGE	MINIMUM ATTENUATION	CUT-OFF FREQUENCY (50 OHMS I/O) ZERO BIAS	TYPICAL CAPACITANCE (Note 1)
		V_{WM} VOLTS	@ 1mA $V_{(BR)}$ VOLTS	@ 3V I_D μA	@ 10mA V_F VOLTS	@ 800-3000 MHz dB	fC MHz	@2.5V, 1MHz C pF
EM4D-100L	M4D10L	5.0	6.0	0.1	0.8	25	150	20

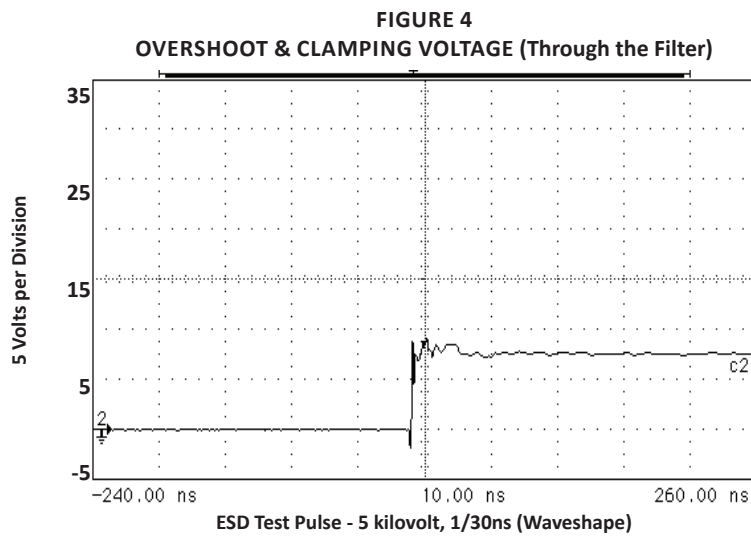
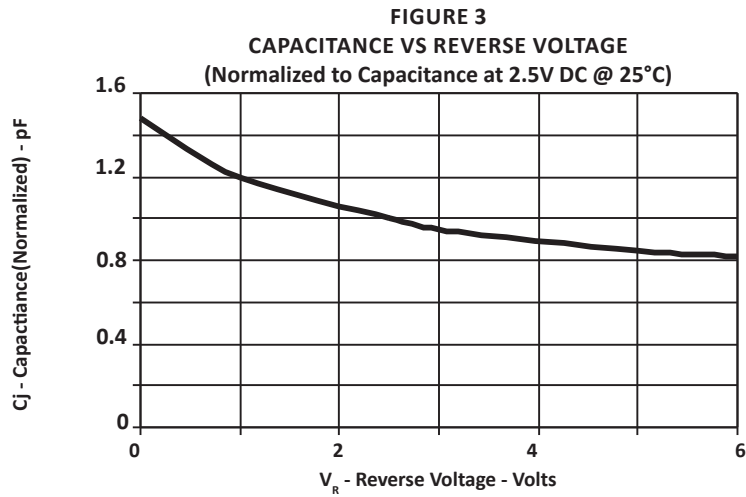
NOTES

1. 30pF @ 0V, 1MHz, ± 20% tolerance.

TYPICAL DEVICE CHARACTERISTICS



TYPICAL DEVICE CHARACTERISTICS



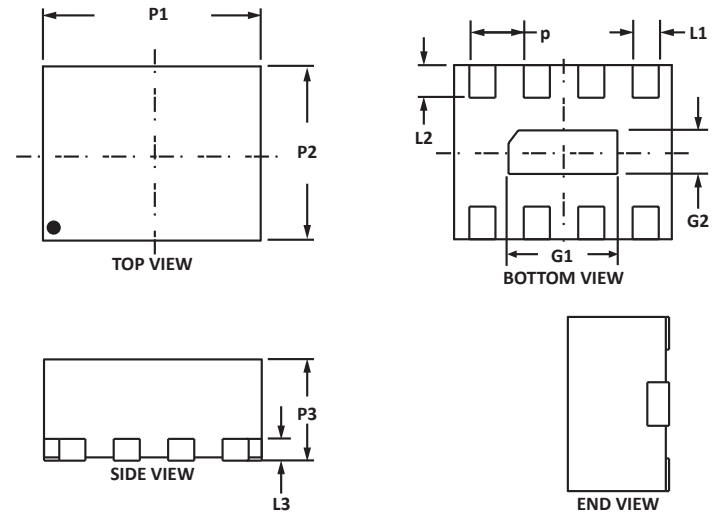
DFN-8 PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
P1	1.95	2.05	0.077	0.081
P2	1.95	2.05	0.077	0.081
P3	0.75	0.85	0.029	0.033
L1	0.23	0.30	0.009	0.012
L2	0.33	0.40	0.013	0.016
L3	0.18	0.23	0.007	0.009
p	0.50 BSC		0.020 BSC	
G1	1.15	1.25	0.045	0.049
G2	0.55	0.65	0.022	0.026

NOTES

- Controlling dimension: millimeters.
- Dimensioning and tolerances per ANSI Y14.M, 1985.
- Coplanarity applies to the exposed pad as well as the terminals.

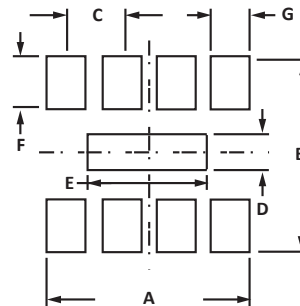


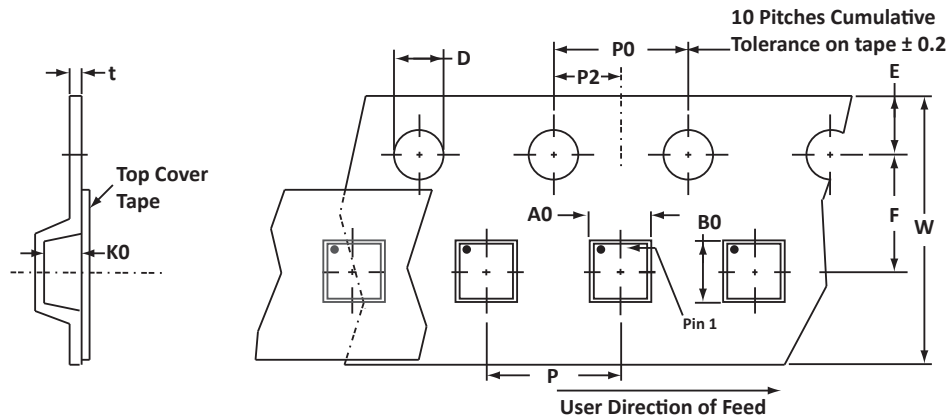
PAD LAYOUT DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.10	2.20	0.083	0.087
B	2.10	2.20	0.083	0.087
C	0.50 BSC		0.020 BSC	
D	0.55	0.65	0.022	0.026
E	1.15	1.25	0.045	0.049
F	0.45	0.50	0.018	0.020
G	0.25	0.35	0.010	0.014

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")	8mm	2.30 ± 0.10	2.30 ± 0.10	0.95 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	0.25

NOTES

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

Package outline, pad layout and tape specifications per document number 06057.R3 3/11.

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
EM4D-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 20 years, ProTek Devices™ is a privately-held company located in Tempe, Arizona, that offers a product line of transient voltage suppressors (TVS); avalanche breakdown diodes; steering diode TVS arrays and other surge suppressor component products. These TVS devices protect electronic systems from the effects of lightning, electrostatic discharge (ESD), nuclear electromagnetic pulses (NEMP), inductive switching and EMI / RFI. ProTek Devices also offers high performance interface and linear products that include analog switches; multiplexers; LED drivers; audio control ICs; RF and related high frequency products. The analog devices work in a host of consumer; industrial; automotive and other applications.

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