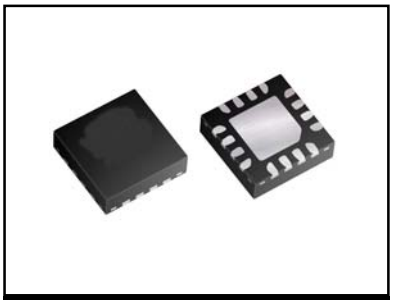
PROTEK DEVICES

EM8Q-200

LCD - EMI FILTER/TVS ARRAY

APPLICATIONS

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



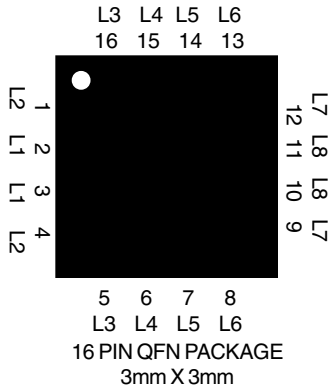
QFN-16

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 Eight(8) Data Lines
- ✔ RoHS Compliant

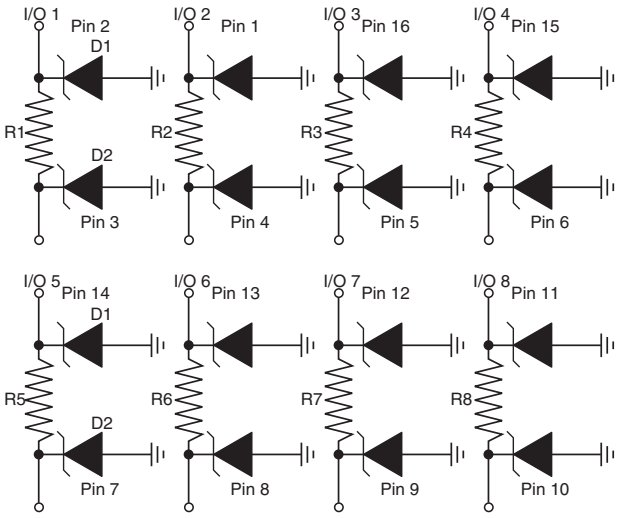


16 PIN QFN PACKAGE
3mm X 3mm

MECHANICAL CHARACTERISTICS

- ✔ QFN-16 Package
- ✔ Weight 0.73 milligrams (Approximate)
- ✔ Available in Lead-Free Pure-Tin Plating(Annealed)
- ✔ Solder Reflow Temperature:
  Pure-Tin - Sn, 100: 260-270°C
- ✔ Consult Factory for Leaded Device Availability
- ✔ Flammability Rating UL 94V-0
- ✔ 8mm Tape and Reel Per EIA Standard 481
- ✔ Marking: Logo, Part Number and Pin One Defined By Dot on Package

PIN CONFIGURATION



Note: Center Tab as the Ground.

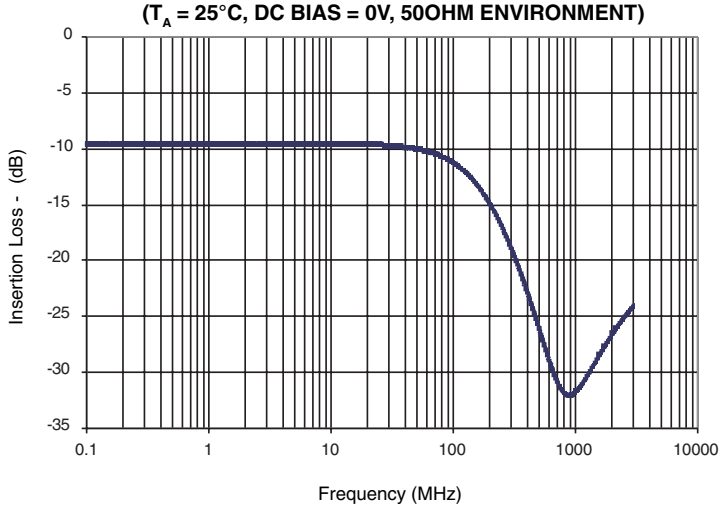
DEVICE CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified							
PART NUMBER	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM 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 PER LINE @2.5V, 1 MHz C pF
EM8Q-200	5.0	6.0	0.1	0.8	25	140	20

Note 1: ±20% tolerance.

FIGURE 1
TYPICAL INSERTION LOSS
(T_A = 25°C, DC BIAS = 0V, 50OHM ENVIRONMENT)



GRAPHS

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

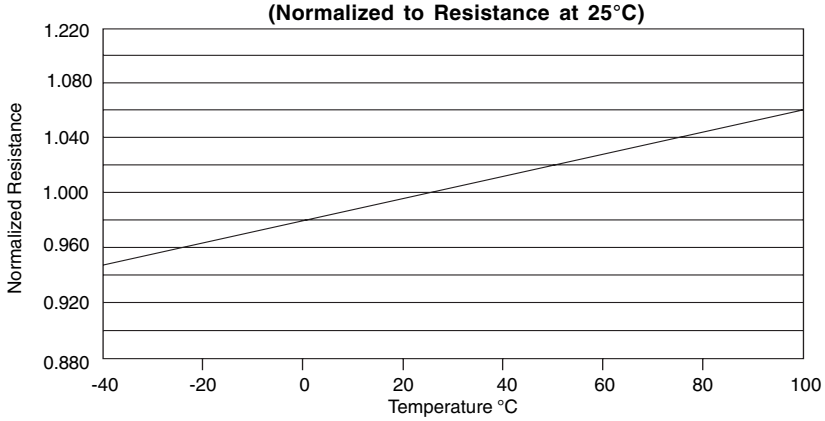
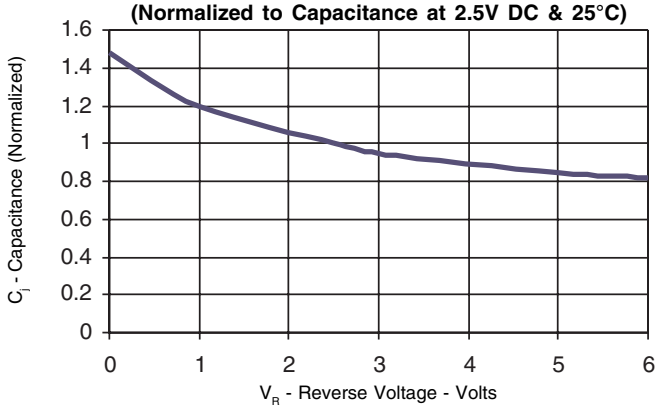
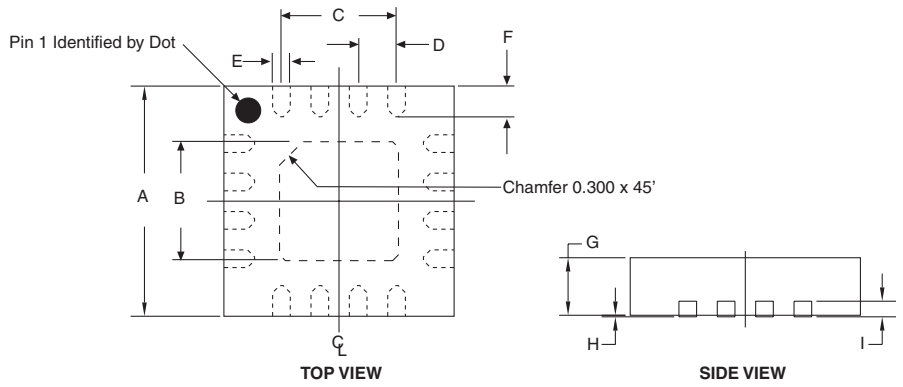


FIGURE 3
CAPACITANCE VS REVERSE VOLTAGE
(Normalized to Capacitance at 2.5V DC & 25°C)



QFN-16 PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE



PACKAGE DIMENSIONS

DIM	MILLIMETERS	INCHES
A	3.000 SQ	0.1181 SQ
B	1.70 SQ ± 0.050	0.067 SQ ± 0.002
C	1.500	0.059
D	0.500 BSC	0.0196 BSC
E	0.230 ± 0.05	0.009 ± 0.002
F	0.400 ± 0.05	0.0157 ± 0.002
G	0.750 ± 0.05	0.0295 ± 0.002
H	0.000 - 0.05	0.000 - 0.002
I	0.203 ± 0.025	0.0079 ± 0.001

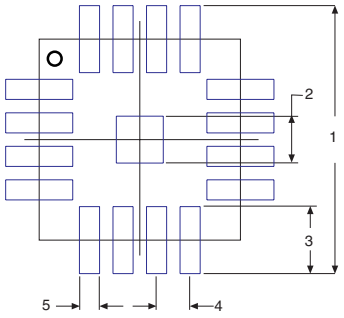
NOTES:
1. Controlling dimensions in inches.
2. Decimal tolerances for mounting pad and outline: .xxx ± 0.05mm (± 0.002").

TAPE & REEL ORDERING NOMENCLATURE

1. Surface mount product is taped and reeled in accordance with EIA 481.
2. Suffix-T73 = 7 Inch Reels - 3,000 pieces per 12mm tape, i.e., EM8Q-200-T73.
3. Suffix-T13 = 13 Inch Reels - 10,000 pieces per 12mm tape, i.e., EM8Q-200-T13.
4. Suffix-LF = Pure Tin Plating, i.e., EM8Q-200-LF-T73.

MOUNTING PAD

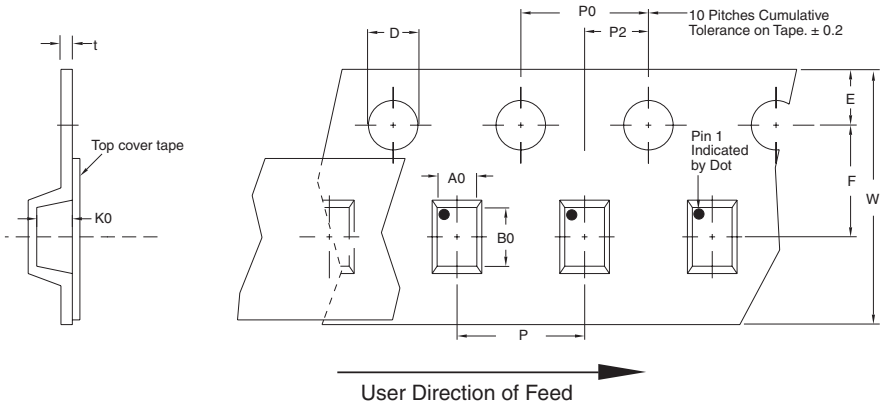
TYPICAL		
DIM	Millimeters	Inches
1	4.000	0.1574
2	0.700	0.0275
3	1.000	0.0393
4	0.500	0.0196
5	0.300	0.0118



Outline & Dimensions: Rev 0 - 10/06, 06054

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	3.30± 0.10	3.30± 0.10	1.00 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	5.50 ± 0.10	12.00 ±0.30	4.00 ±0.10	2.00 ±0.05	8.00 ±0.10	0.25



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