

EMI FILTER/TVS ARRAY

**APPLICATIONS**

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

**IEC COMPATIBILITY (EN61000-4)**

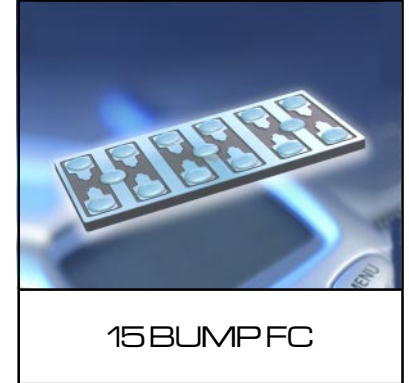
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

**FEATURES**

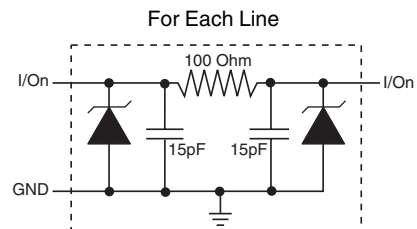
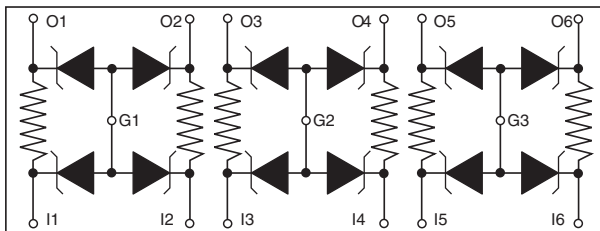
- ✓ ESD Protection > 25 kilovolts
- ✓ Bidirectional EMI Filtering/TVS Low Pass Filters
- ✓ Low Insertion Loss: -3db Roll-Off @ 90MHz
- ✓ Protects Up to Six(6) Data Lines
- ✓ RoHS Compliant in Lead-Free Versions

**MECHANICAL CHARACTERISTICS**

- ✓ 15 Bump Flip Chip Package
- ✓ Weight 0.73 milligrams (Approximate)
- ✓ Available in Tin-Lead or Lead-Free Plating
- ✓ Solder Reflow Temperature:
  - Tin-Lead - Sn/Pb, 85/15: 240-245°C
  - Lead-Free - Sn/Ag/Cu, 96/3.5/0.5: 260-270°C
- ✓ Flammability Rating UL 94V-0
- ✓ 8mm Tape and Reel Per EIA Standard 481



**PIN CONFIGURATIONS**

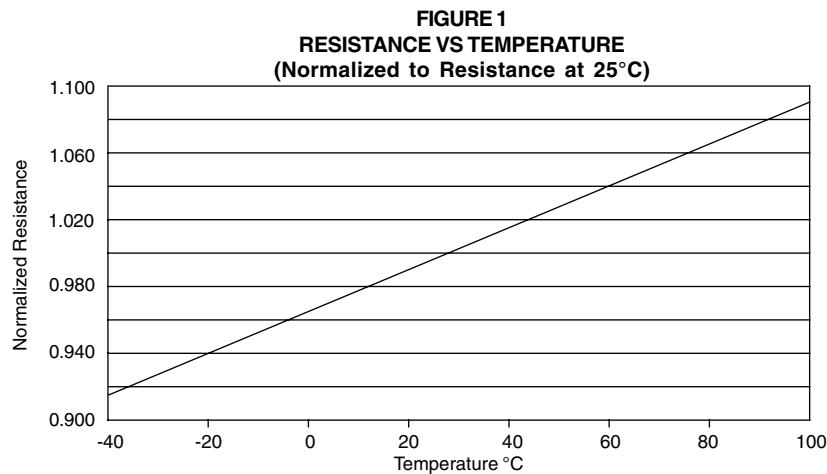


## DEVICE CHARACTERISTICS

| 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 @ ± 20%                        | R         | 100            | OHMS  |

| ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified |                         |                              |                                 |                          |                         |   |   |
|---|-------------------------|------------------------------|---------------------------------|--------------------------|-------------------------|---|---|
| PART NUMBER   | 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) |
|   | $V_{WM}$<br>VOLTS       | @ 1mA<br>$V_{(BR)}$<br>VOLTS | @ 3V<br>$I_D$<br>$\mu A$        | @ 10mA<br>$V_F$<br>VOLTS | @<br>800-3000 MHz<br>dB | fc<br>MHz                                 | @ 2.5V, 1 MHz<br>$C_{Line}$<br>pF         |
| EMIF6-100LFC  | 5.0                     | 6.0                          | 0.1                             | 0.8                      | 30                      | 90  | 30  |

Note 1: ±20% tolerance.



GRAPHS

FIGURE 2  
OVERSHOOT & CLAMPING VOLTAGE

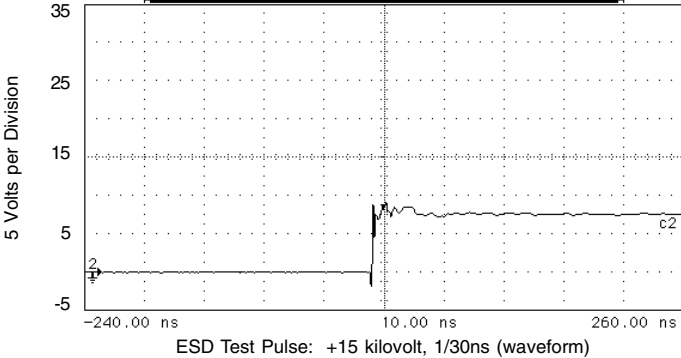
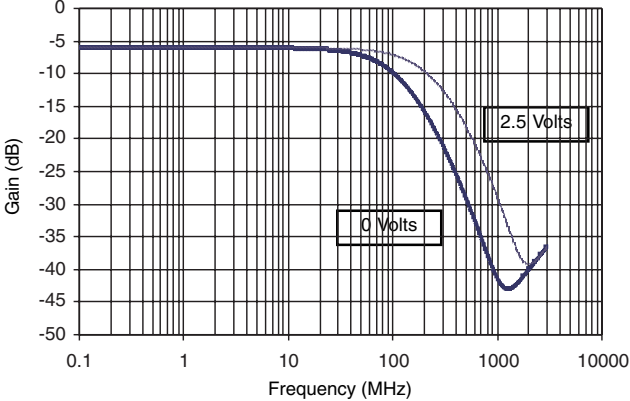


FIGURE 3  
INSERTION LOSS

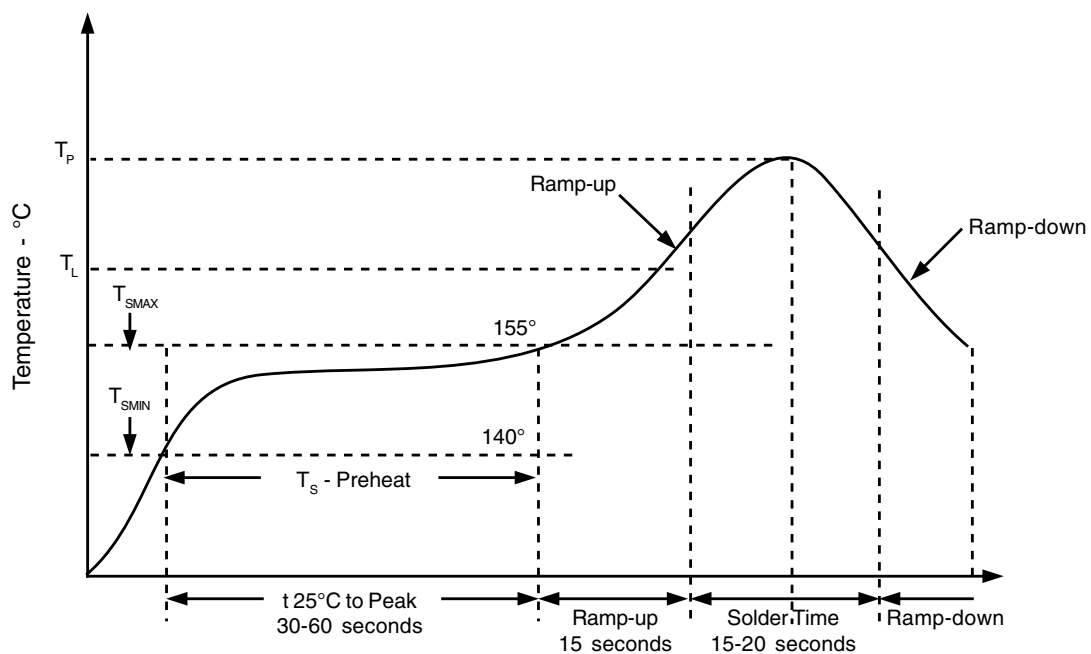
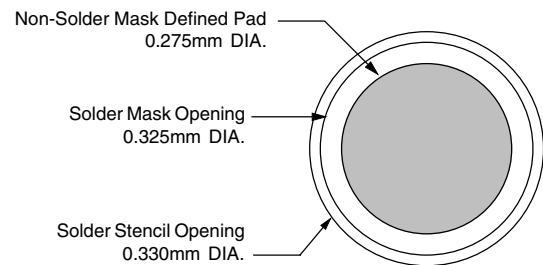


## APPLICATION INFORMATION

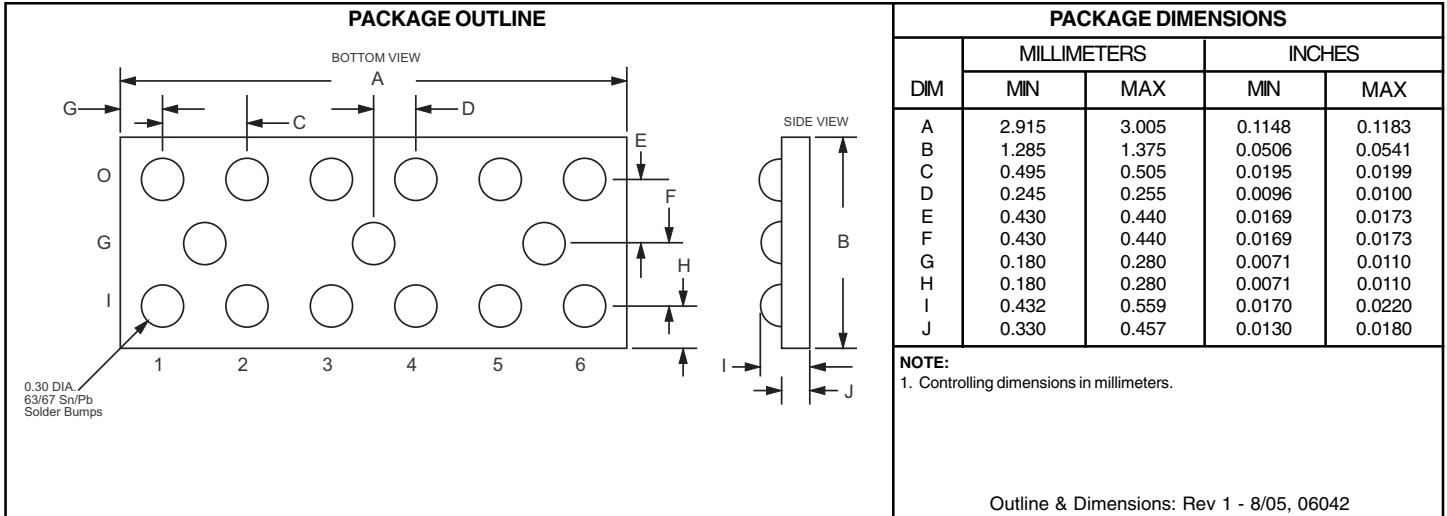
| PRINTED CIRCUIT BOARD RECOMMENDATIONS                         |                              |
|---|------------------------------|
| PARAMETER   | VALUE                        |
| Pad Size on PCB   | 0.275mm                      |
| Pad Shape   | Round                        |
| Pad Definition  | Non-Solder Mask Defined Pads |
| Solder Mask Opening   | 0.325mm Round                |
| Solder Stencil Thickness                                      | 0.150mm                      |
| Solder Stencil Aperture Opening (laser cut, 5% tapered walls) | 0.330mm Round                |
| Solder Paste Type   | No Clean                     |
| Pad Protective Finish   | OSP(Entek Cu Plus 106A)      |
| Tolerance - Edge To Corner Ball                               | ±50µm                        |
| Solder Ball Side Coplanarity                                  | ±20µm                        |
| Maximum Dwell Time Above Liquidous (183°C)                    | 60 Seconds                   |
| Soldering Maximum Temperature                                 | 270°C                        |

| REQUIREMENTS  |
|---|
| Temperature:<br>$T_p$ for Lead-Free (SnAgCu): 260-270°C<br>$T_p$ for Tin-Lead: 240-245°C<br>Preheat time and temperature depends on solder paste and flux activation temperature, component size, weight, surface area & plating. |

### RECOMMENDED NON-SOLDER MASK DEFINED PAD ILLUSTRATION

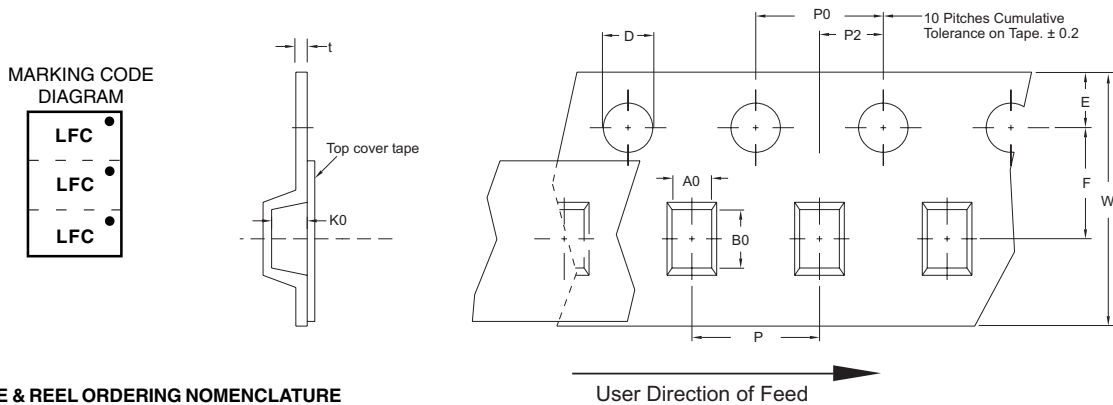


## PACKAGE OUTLINE & DIMENSIONS



Tape & Reel Specifications (Dimensions in millimeters)

| Reel Dia.  | Tape Width | A0          | B0          | K0          | D           | E           | F           | W           | P0          | P2          | P           | t            |
|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| 178mm (7") | 8mm        | 1.78 ± 0.05 | 3.35 ± 0.05 | 0.76 ± 0.05 | 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 | 0.20 ± 0.025 |



**TAPE & REEL ORDERING NOMENCLATURE**

1. Surface mount product is taped and reeled in accordance with EIA-481.
2. Plastic 8mm Tape: Suffix-T73-1 = 7 Inch Reel - 3,000 pieces per reel, i.e., *EMIF6-100LFC-T73-1*.
3. Suffix - LF = Lead-Free, i.e., *EMIF6-100LFC-LF-T73-1*.
4. Suffix - C = Coated Version, i.e., *EMIF6-100LFC-LF-T73C-1*.

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