

EMI FILTER/TVS ARRAY

**APPLICATIONS**

- ✓ Cellular Phones
- ✓ Notebooks
- ✓ Personal Digital Assistant (PDA)
- ✓ Ground Positioning System (GPS)
- ✓ Audio Ports

**IEC COMPATIBILITY (EN61000-4)**

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

**FEATURES**

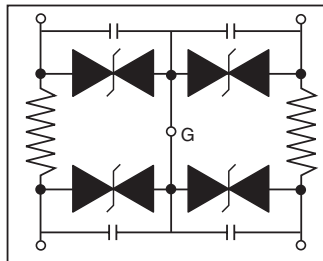
- ✓ ESD Protection > 25 kilovolts
- ✓ Bidirectional EMI Filtering/TVS Low Pass Filters
- ✓ Low Insertion Loss: -3db Roll-Off @ 80MHz
- ✓ Bidirectional Configuration
- ✓ Protects Up to Two(2) Signal Lines
- ✓ RoHS Compliant on Lead-Free Versions

**MECHANICAL CHARACTERISTICS**

- ✓ 5 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 CONFIGURATION**



## 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% Tolerance)	R	10	OHMS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified						
PART NUMBER	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM DIODE LEAKAGE CURRENT	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	@ 5V $I_D$ $\mu A$	@ 800-3000 MHz dB	$f_c$ MHz	@0V, 1 MHz C pF
EMIF2SPK-10FCC	5.0	6.0	1	30	80	80

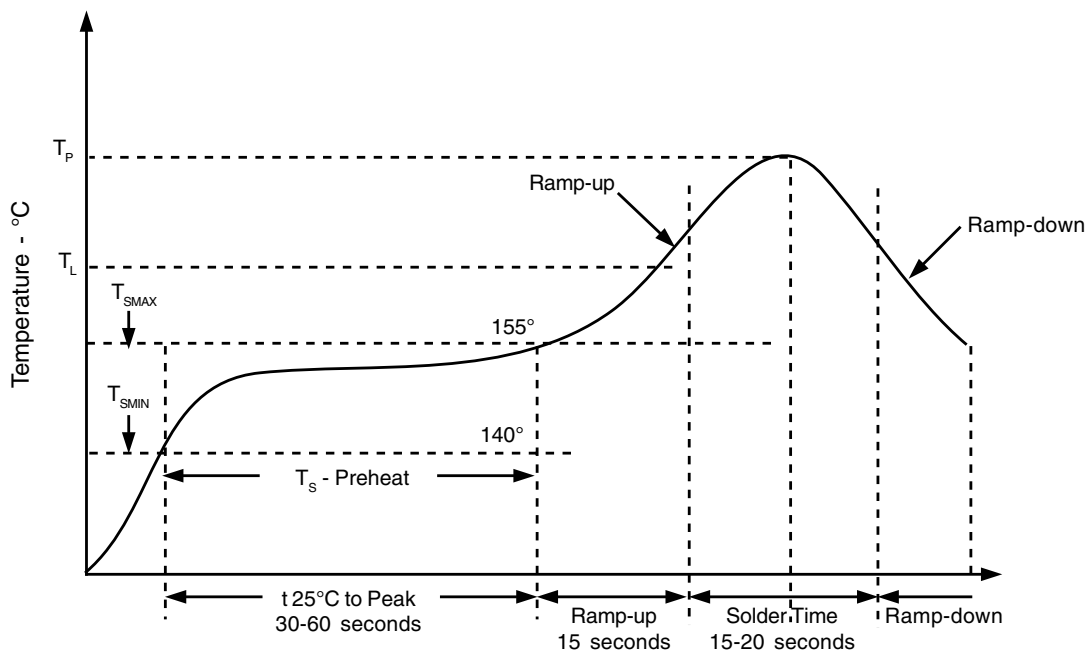
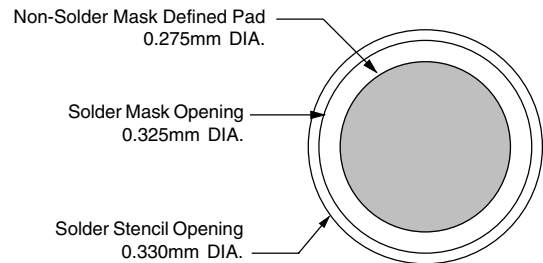
**Note 1:** ±20% tolerance.

## APPLICATION INFORMATION

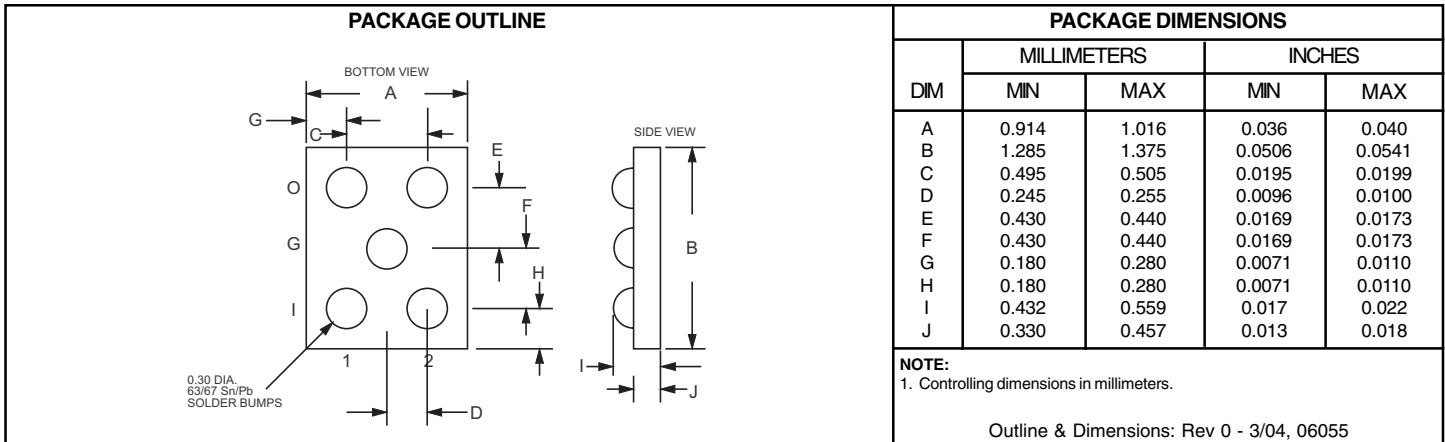
PRINTED CIRCUIT BOARD RECOMMENDATIONS	
PARAMETER	VALUE
Pad Size on PCB	0.275mm
Pad Shape	Round
Pad Definition	Non-Solder Mask Defined Pads
Solder Mask Opening	0.325mm Round
Solder Stencil Thickness	0.150mm
Solder Stencil Aperture Opening (laser cut, 5% tapered walls)	0.330mm Round
Solder Paste Type	No 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
<p>Temperature:</p> <p><math>T_p</math> for Lead-Free (SnAgCu): 260-270°C</p> <p><math>T_p</math> for Tin-Lead: 240-245°C</p> <p>Preheat time and temperature depends on solder paste and flux activation temperature, component size, weight, surface area &amp; plating.</p>

### RECOMMENDED NON-SOLDER MASK DEFINED PAD ILLUSTRATION

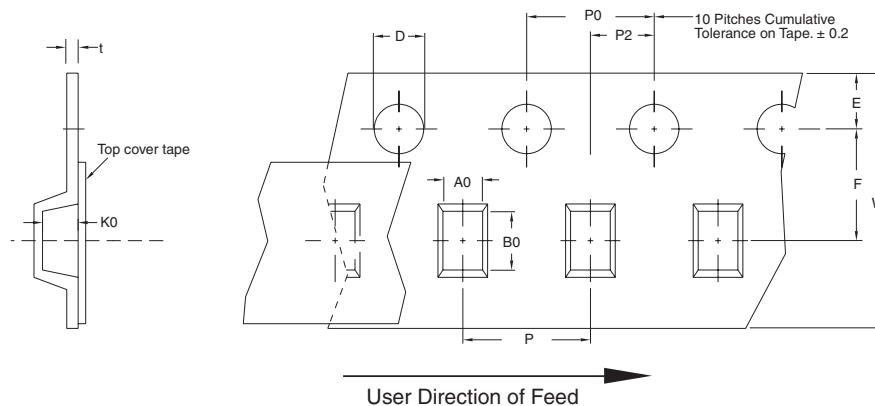


## PACKAGE OUTLINE & DIMENSIONS



Tape & Reel Specifications (Dimensions in millimeters)

Reel Dia.	Tape Width	A0	B0	K0	D	E	F	W	P0	P2	P	t
178mm (7")	8mm	1.08 ± 0.05	1.60 ± 0.05	0.72 ± 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., *EMIF2SPK-10FCC-T73-1*.
3. Suffix - LF - Lead-Free, i.e., *EMIF2SPK-10FCC-LF-T73-1*.

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