

**ESD4-LFC****LOW CAPACITANCE FLIP CHIP ARRAY****APPLICATIONS**

- ✓ Cellular Phones
- ✓ I/O Ports
- ✓ Notebooks & Pocket PCs
- ✓ Personal Digital Assistant (PDA)
- ✓ Ground Positioning System (GPS)
- ✓ SMART Cards

IEC COMPATIBILITY (EN61000-4)

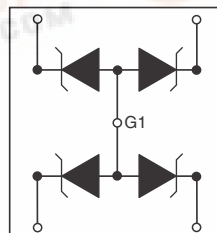
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

FEATURES

- ✓ ESD Protection > 25 kilovolts
- ✓ Unidirectional Configuration
- ✓ Low Capacitance: 15pF
- ✓ Protects Up to Four(4) Data 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

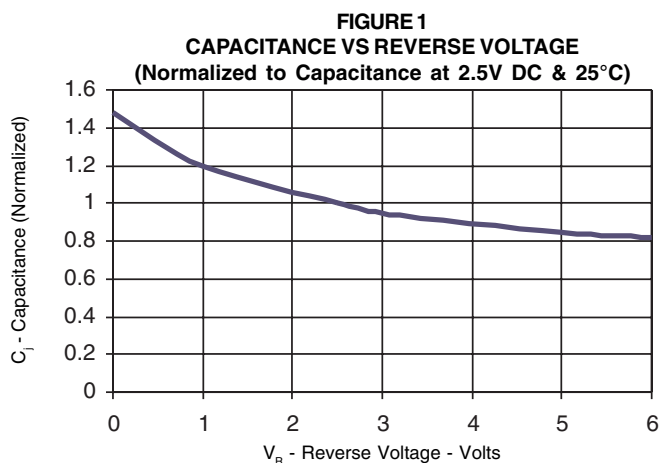
**PIN CONFIGURATION**

DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
DC Power Rating	P	200	mW
Operating Temperature	T _J	-40°C to 85°C	°C
Storage Temperature	T _{STG}	-55°C to 150°C	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified						
PART NUMBER	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM LEAKAGE CURRENT	TYPICAL FORWARD VOLTAGE	MAXIMUM CLAMPING VOLTAGE	TYPICAL CAPACITANCE PER LINE (See Note 1)
	V _{WM} VOLTS	@ 1mA V _(BR) VOLTS	@ 3.3V I _D μA	@ 10mA V _F VOLTS	@ I _P = 10mA V _C VOLTS	@ 2.5V, 1 MHz C pF
ESD4-LFC	5.0	6.0	0.1	0.8	8	15

Note 1: ±20% tolerance.

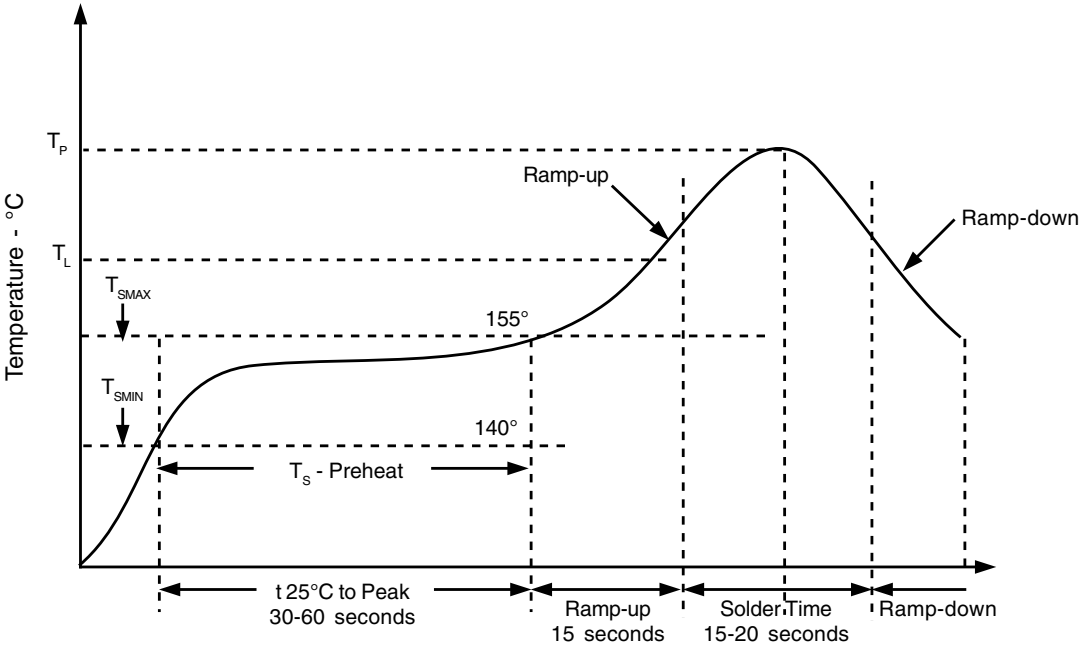
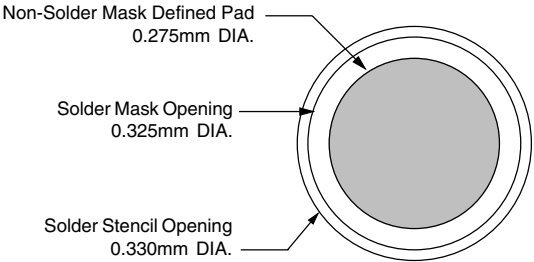


APPLICATION INFORMATION

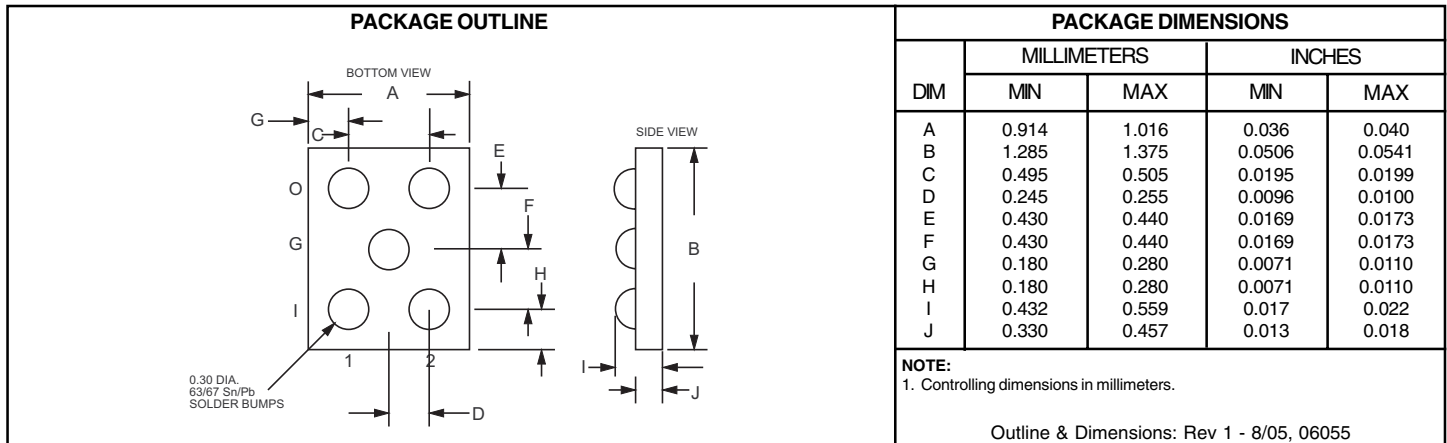
PRINTED CIRCUIT BOARD RECOMMENDATIONS	
PARAMETER	VALUE
Pad Size on PCB	0.275mm
Pad Shape	Round
Pad Definition	Non-Solder Mask Defined Pads
Solder Mask Opening	0.325mm Round
Solder Stencil Thickness	0.150mm
Solder Stencil Aperture Opening (laser cut, 5% tapered walls)	0.330mm Round
Solder Paste Type	No 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
Temperature: T _p for Lead-Free (SnAgCu): 260-270°C T _p for Tin-Lead: 240-245°C 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



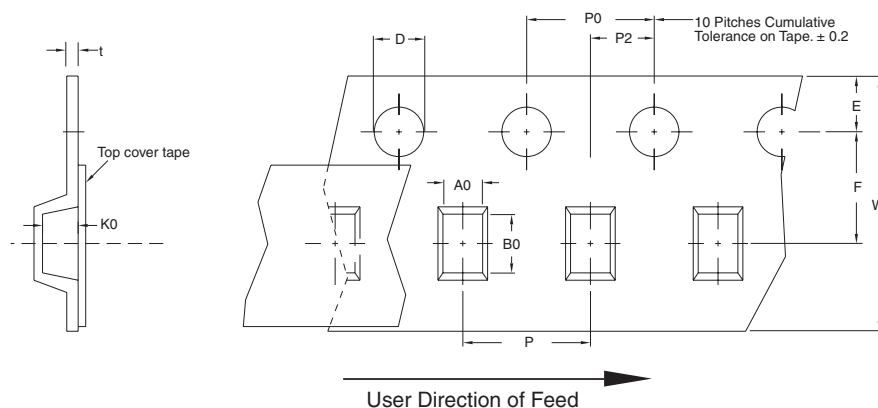
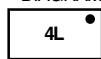
PACKAGE OUTLINE & DIMENSIONS



Tape & Reel Specifications (Dimensions in millimeters)

Reel Dia.	Tape Width	A0	B0	K0	D	E	F	W	P0	P2	P	t
178mm (7")	8mm	1.08 ± 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

MARKING CODE
DIAGRAM



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., *ESD4-LFC-T73-1*.
3. Suffix - LF - Lead-Free, i.e., *ESD4-LFC-LF-T73-1*.
4. Suffix - C - Coated Version, i.e., *ESD4-LFC-LF-T73C-1*.

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