



LC0404FC3.3C
thru
LC0404FC24C

BIDIRECTIONAL LOW CAPACITANCE FLIP CHIP

APPLICATIONS

- ✓ Cellular Phones
- ✓ Handheld Electronics
- ✓ Personal Digital Assistants (PDAs)
- ✓ Notebook Computers
- ✓ SMART Cards

IEC COMPATIBILITY (EN61000-4)

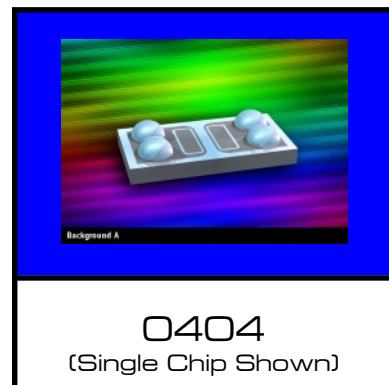
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

FEATURES

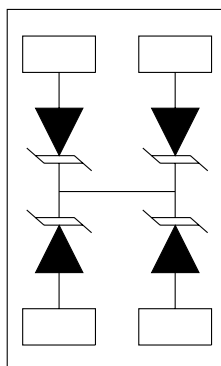
- ✓ ESD Protection > 25 kilovolts
- ✓ Available in Six Voltage Types Ranging From 3.3V to 24V
- ✓ 200 Watts Peak Pulse Power Dissipation per Line (8/20μs)
- ✓ Low Clamping Voltage
- ✓ **LOW CAPACITANCE**
- ✓ **LOW STANDBY CURRENT**

MECHANICAL CHARACTERISTICS

- ✓ Standard EIA Chip Size: 0404
- ✓ Weight 0.73 milligrams (Approximate)
- ✓ Flammability Rating UL 94V-0
- ✓ 8mm Plastic & Paper Tape and Reel Per EIA Standard 481
- ✓ Device Marking On Reel
- ✓ Top Contacts: Solder Bump 0.004" in Height (Nominal)



CIRCUIT DIAGRAM



LC0404FC3.3C thru LC0404FC24C

DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

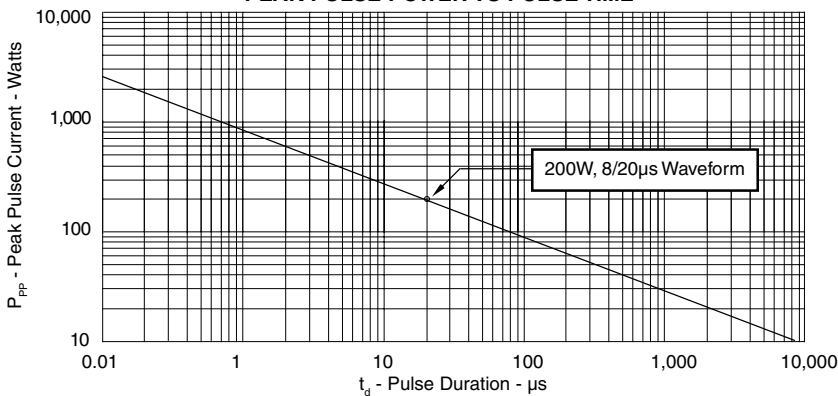
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1	P_{PP}	200	Watts
Operating Temperature	T_J	-55°C to 150°C	°C
Storage Temperature	T_{STG}	-55°C to 150°C	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

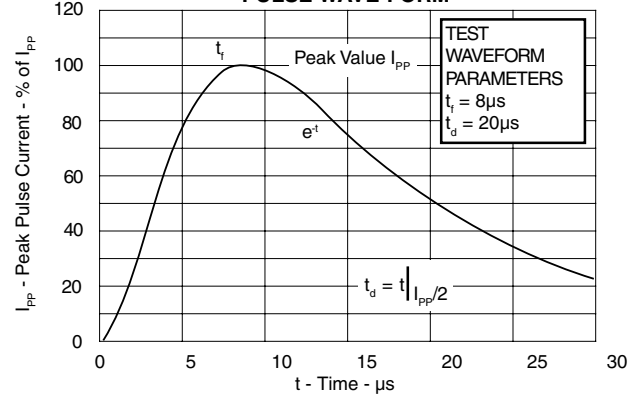
PART NUMBER (See Note 1)	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ $I_p = 1A$ V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ 8/20 μs $V_C @ I_{PP}$	MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D μA	TYPICAL CAPACITANCE 0V @ 1 MHz C pF
LC0404FC3.3C	3.3	4.0	7.0	12.5V @ 16A	75	70
LC0404FC05C	5.9	6.0	11.0	13V @ 15A	10	35
LC0404FC08C	8.0	8.0	13.2	18V @ 11A	1	32
LC0404FC12C	12.0	13.3	19.8	26.9V @ 7.4A	1	30
LC0404FC15C	15.0	16.7	25.4	34.5V @ 5.8A	1	25
LC0404FC24C	24.0	26.7	37.2	50.6V @ 4A	1	20

Note 1: All devices are bidirectional. Electrical characteristics apply in both directions. Electrical characteristics for 3V, 8V, 12V, 15V and 24V devices are preliminary.

**FIGURE 1
PEAK PULSE POWER VS PULSE TIME**

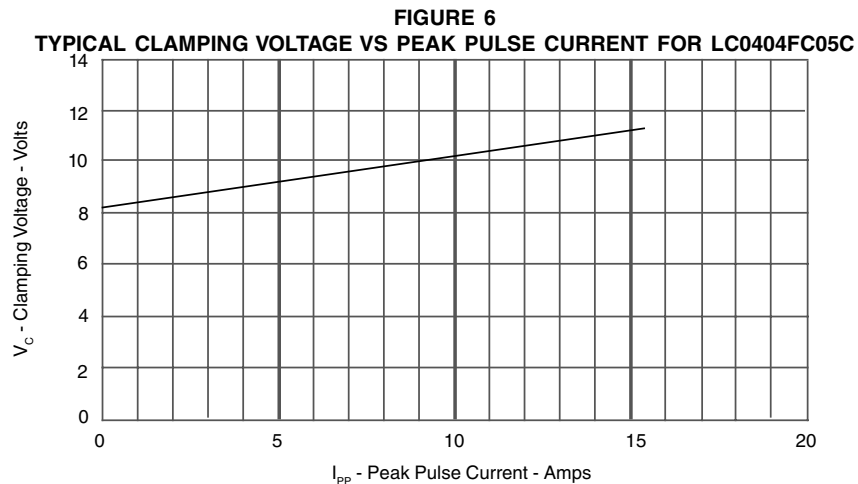
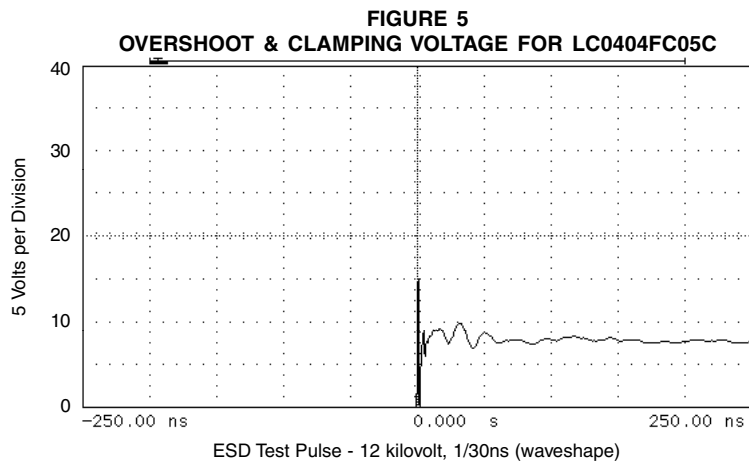
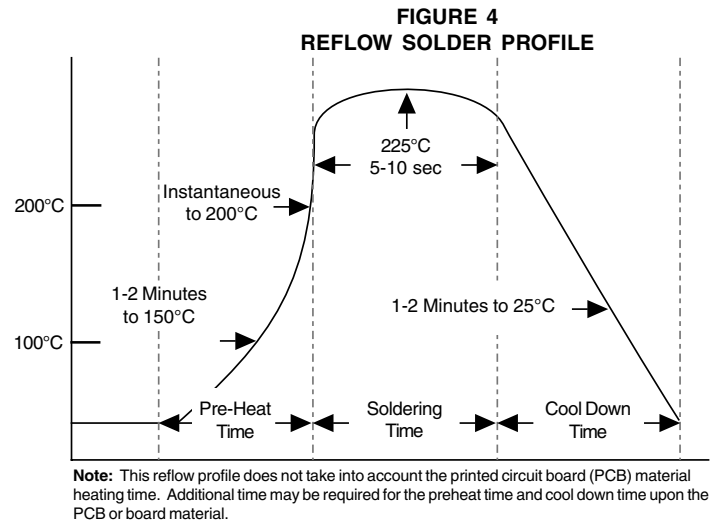
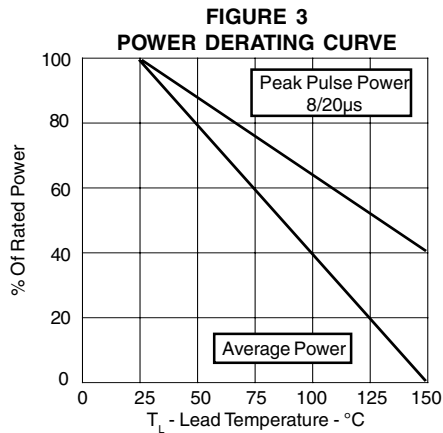


**FIGURE 2
PULSE WAVE FORM**



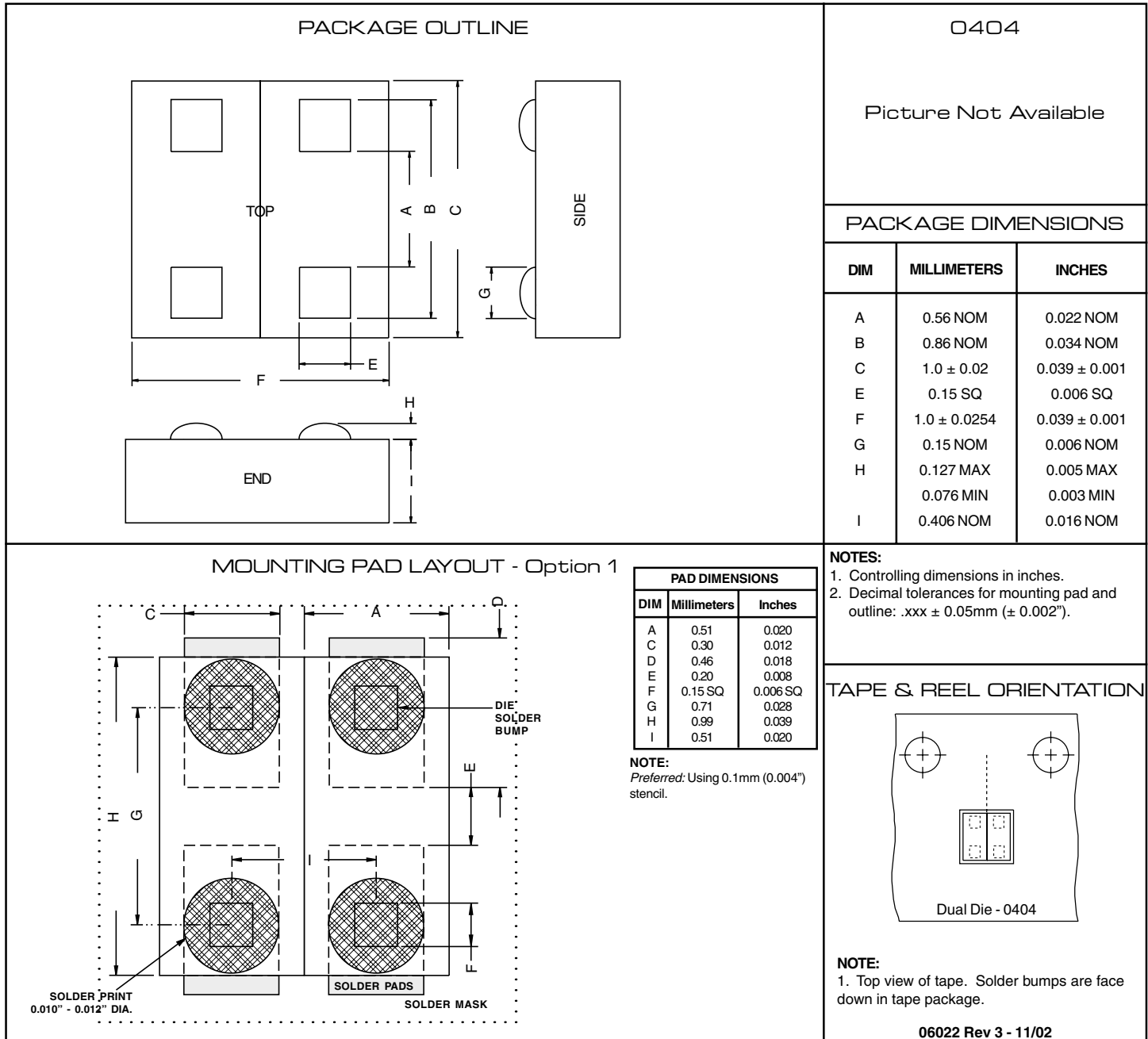
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GRAPHS



LC0404FC3.3C thru LC0404FC24C

PACKAGE OUTLINE & DIMENSIONS



TAPE & REEL ORDERING INFORMATION:

Surface mount product is taped and reeled in accordance with EIA-481.

Plastic Tape: 7 Inch Reels - 5,000 pieces per reel. Ordering Suffix: -T75-1 (i.e., LC0404FC05C-T75-1).

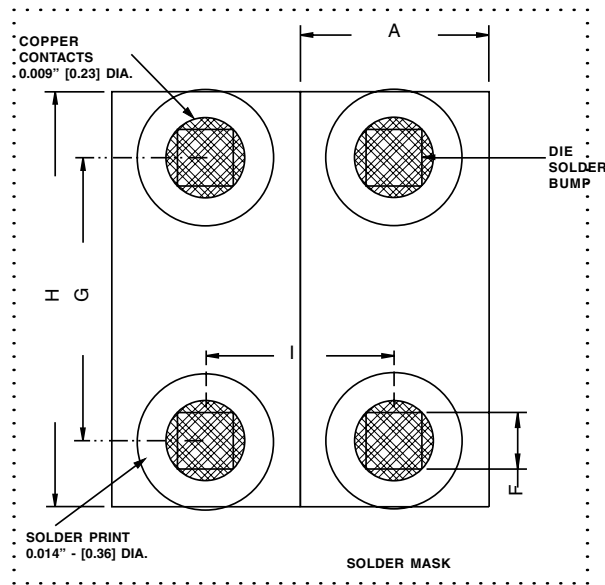
Paper Tape: 7 Inch Reels - 10,000 pieces per reel. Ordering Suffix: -T710-2 (i.e., LC0404FC05C-T710-2).

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PACKAGE OUTLINE & DIMENSIONS

MOUNTING PAD LAYOUT - Option 2



PAD DIMENSIONS

DIM	Millimeters	Inches
A	0.51	0.020
F	0.15 SQ	0.006 SQ
G	0.71	0.028
H	0.99	0.039
I	0.51	0.020

NOTES:

1. Controlling dimensions in inches.
2. Decimal tolerances for mounting pad and outline:
.xxx ± 0.05mm (± 0.002").
3. Preferred: Using 0.1mm (0.004") stencil.

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