

UNBUMPED LOW CAPACITANCE FLIP CHIP ARRAY

APPLICATIONS

- ✓ Cellular Phones
- ✓ Personal Digital Assistant (PDA)
- ✓ Notebook Computers
- ✓ SMART Cards

IEC COMPATIBILITY (EN61000-4)

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

FEATURES

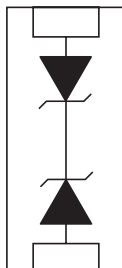
- ✓ ESD Protection > 25 kilovolts
- ✓ Available in Six Voltage Types Ranging From 3.3V to 24V
- ✓ Low ESD Overshoot Voltage
- ✓ Bidirectional Configuration & Monolithic Structure
- ✓ Protects 1 Line
- ✓ **LOW CAPACITANCE: 6pF**
- ✓ **LOW LEAKAGE CURRENT**

MECHANICAL CHARACTERISTICS

- ✓ Standard EIA Chip Size: 0402
- ✓ Weight 0.73 milligrams (Approximate)
- ✓ Flammability Rating UL 94V-0
- ✓ 8mm Plastic & Paper Tape and Reel Per EIA Standard 481
- ✓ Device Marking On Reel



PIN CONFIGURATION



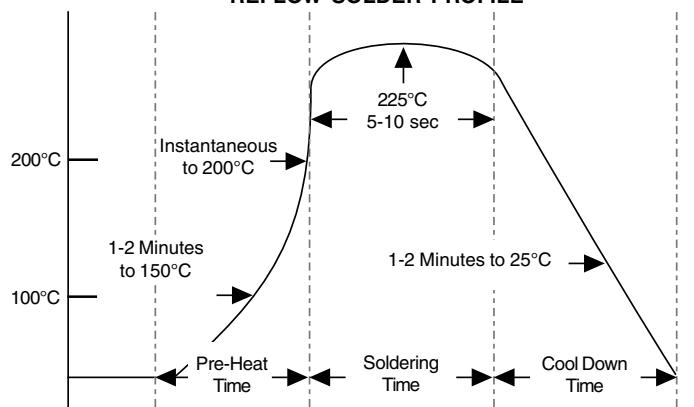
DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
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 LEAKAGE CURRENT @ V_{WM} I_D μA	TYPICAL CAPACITANCE @ 0V, 1 MHz C pF
ULLC0402FC3.3C	3.3	4.0	75	6
ULLC0402FC05C	5.0	6.0	1.0	6
ULLC0402FC08C	8.0	8.5	0.1	6
ULLC0402FC12C	12.0	13.3	0.1	6
ULLC0402FC15C	15.0	16.7	0.1	6
ULLC0402FC24C	24.0	26.7	0.1	6

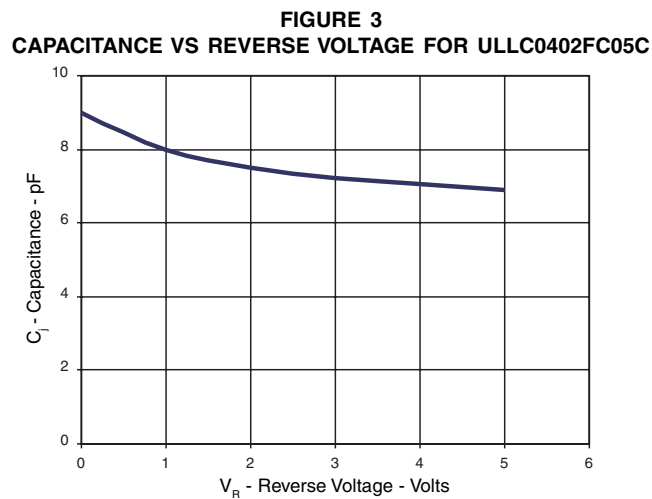
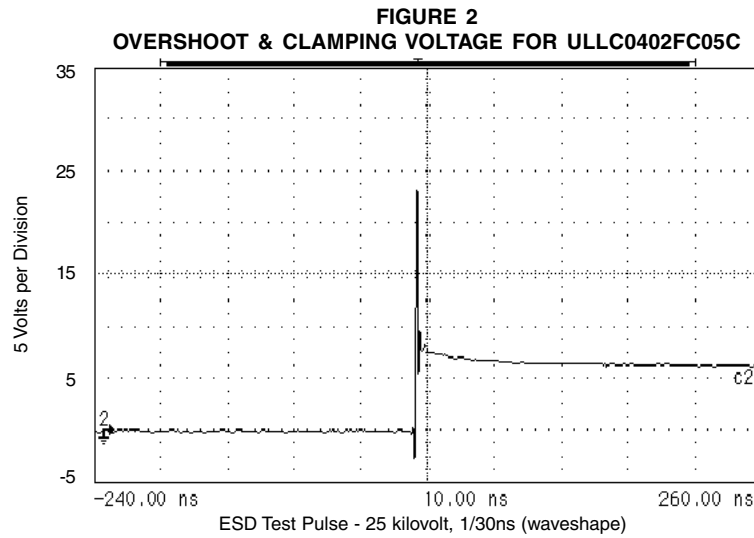
Note 1: All devices are bidirectional.

**FIGURE 1
REFLOW SOLDER PROFILE**

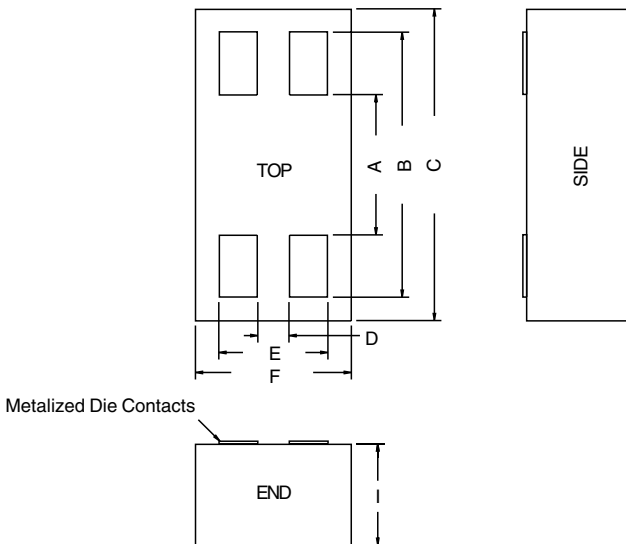
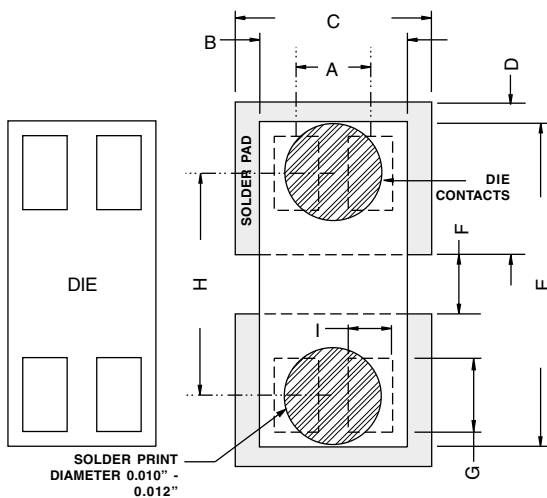
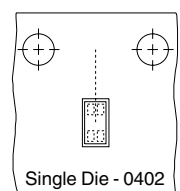


Note: This reflow profile does not take into account the printed circuit board (PCB) material heating time. Additional time may be required for the preheat time and cool down time upon the PCB or board material.

GRAPHS



PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE  Metalized Die Contacts	U0402  PACKAGE DIMENSIONS <table><tr><th>DIM</th><th>MILLIMETERS</th><th>INCHES</th></tr><tr><td>A</td><td>0.46 NOM</td><td>0.018 NOM</td></tr><tr><td>B</td><td>0.86 NOM</td><td>0.034 NOM</td></tr><tr><td>C</td><td>0.99 ± 0.0254</td><td>0.039 ± 0.001</td></tr><tr><td>D</td><td>0.10 NOM</td><td>0.004 NOM</td></tr><tr><td>E</td><td>0.35 NOM</td><td>0.014 NOM</td></tr><tr><td>F</td><td>0.483 ± 0.0254</td><td>0.019 ± 0.001</td></tr><tr><td>I</td><td>0.406 NOM</td><td>0.016 NOM</td></tr></table> NOTES: 1. Controlling dimensions in inches. 2. Decimal tolerances for mounting pad and outline: .xxx ± 0.05mm (± 0.002"). 3. Maximum chip size: 1.02 (0.040") by 0.51(0.020").	DIM	MILLIMETERS	INCHES	A	0.46 NOM	0.018 NOM	B	0.86 NOM	0.034 NOM	C	0.99 ± 0.0254	0.039 ± 0.001	D	0.10 NOM	0.004 NOM	E	0.35 NOM	0.014 NOM	F	0.483 ± 0.0254	0.019 ± 0.001	I	0.406 NOM	0.016 NOM						
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MOUNTING PAD  SOLDER PRINT DIAMETER 0.010" - 0.012"	PAD DIMENSIONS <table><tr><th>DIM</th><th>MILLIMETERS</th><th>INCHES</th></tr><tr><td>A</td><td>0.23</td><td>0.009</td></tr><tr><td>B</td><td>0.48</td><td>0.019</td></tr><tr><td>C</td><td>0.69</td><td>0.027</td></tr><tr><td>D</td><td>0.46</td><td>0.018</td></tr><tr><td>E</td><td>0.99</td><td>0.039</td></tr><tr><td>F</td><td>0.20</td><td>0.008</td></tr><tr><td>G</td><td>0.20</td><td>0.008</td></tr><tr><td>H</td><td>0.66</td><td>0.026</td></tr><tr><td>I</td><td>0.13</td><td>0.005</td></tr></table> NOTE: 1. Top view of tape. Metal contacts are face down in tape package. TAPE & REEL ORIENTATION  Single Die - 0402 NOTE: 1. Preferred: Using 0.1mm (0.004") stencil. Outline & Dimensions: Rev 3 - 11/02, 06020	DIM	MILLIMETERS	INCHES	A	0.23	0.009	B	0.48	0.019	C	0.69	0.027	D	0.46	0.018	E	0.99	0.039	F	0.20	0.008	G	0.20	0.008	H	0.66	0.026	I	0.13	0.005
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TAPE & REEL ORDERING NOMENCLATURE

- Surface mount product is taped and reeled in accordance with EIA 481.
- 8mm Plastic Tape: 7 Inch Reels - 5,000 pieces per reel. Ordering Suffix: -T75-1 (i.e., ULLC0402FC05C-T75-1).
- 8mm Paper Tape: 7 Inch Reels - 10,000 pieces per reel. Ordering Suffix: -T710-2 (i.e., ULLC0402FC05C-T710-2).

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