

## APPLICATIONS

- ✓ Cellular Phones
- ✓ MCM Boards
- ✓ Wireless Communication Circuits
- ✓ IR LEDs
- ✓ SMART & PCMCIA Cards

## IEC COMPATIBILITY (EN61000-4)

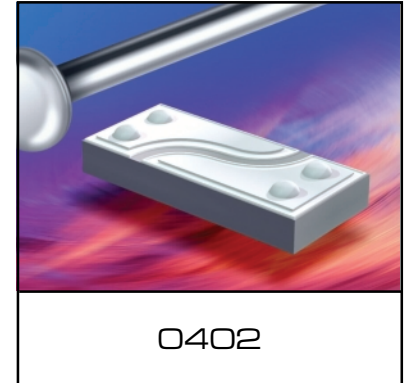
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

## FEATURES

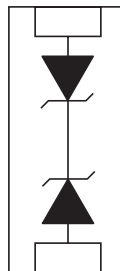
- ✓ ESD Protection > 25 kilovolts
- ✓ Available in Multiple Voltage Types Ranging From 3.3V to 36V
- ✓ 250 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu s$ )
- ✓ Bidirectional Configuration & Monolithic Structure
- ✓ Protects 1 Line

## 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
- ✓ Top Contacts: Solder Bump 0.004" in Height (Nominal)



## PIN CONFIGURATION



**DEVICE CHARACTERISTICS**

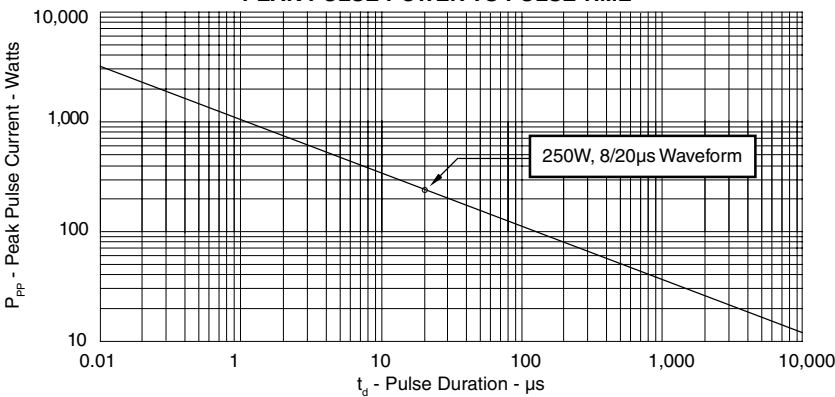
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1	$P_{PP}$	250	Watts
Operating Temperature	$T_J$	-55°C to 150°C	°C
Storage Temperature	$T_{STG}$	-55°C to 150°C	°C

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 $\mu s$ $V_C @ I_{PP}$	MAXIMUM LEAKAGE CURRENT (See Note 2)  @ $V_{WM}$ $I_D$ $\mu A$	TYPICAL CAPACITANCE  @ 0V, 1 MHz C pF
P0402FC3.3C	3.3	4.0	7.0	12.5V @ 20A	75*	150
P0402FC05C	5.0	6.0	9.8	14.7V @ 17A	10**	100
P0402FC08C	8.0	8.5	13.4	19.2V @ 13A	10***	75
P0402FC12C	12.0	13.3	19.0	29.7V @ 9.0A	1	50
P0402FC15C	15.0	16.7	24.0	35.7V @ 7.0A	1	40
P0402FC24C	24.0	26.7	43.0	55.0V @ 5.0A	1	30
P0402FC36C	36.0	40.0	64.0	84.0V @ 3.0A	1	25

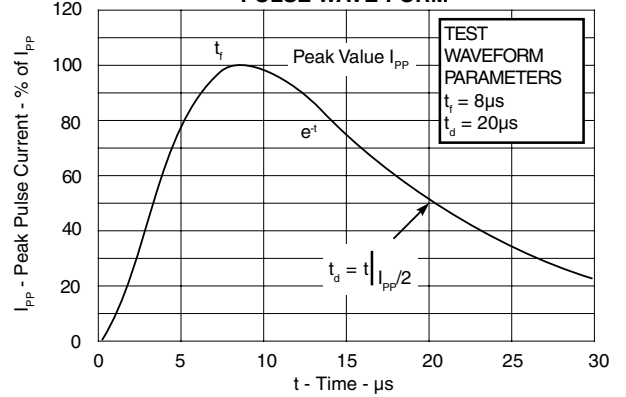
**Note 1:** All devices are bidirectional. Electrical characteristics apply in both directions.

**Note 2:** \*Maximum leakage current < 5 $\mu A$  @ 2.8V. \*\*Maximum leakage current < 500nA @ 3.3V. \*\*\*Maximum leakage current < 200nA @ 5V.

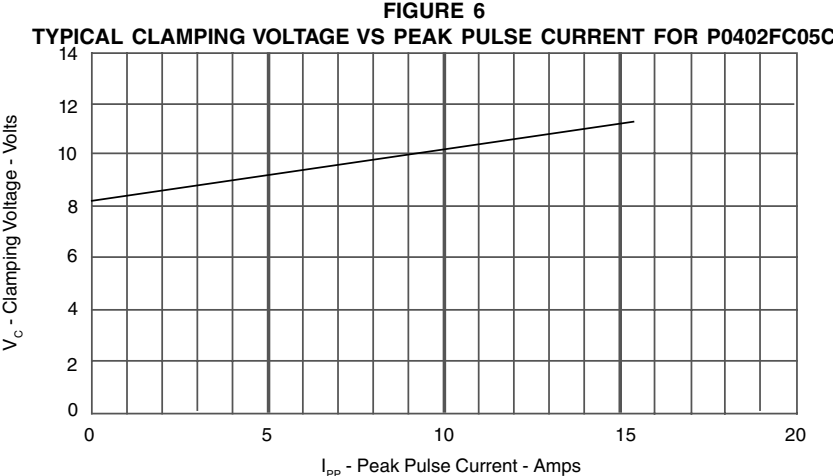
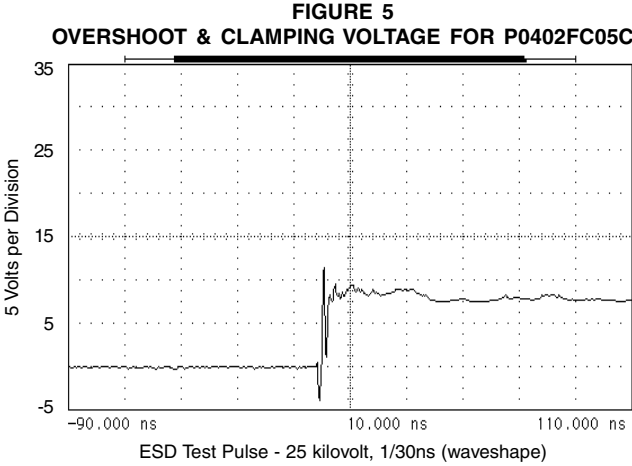
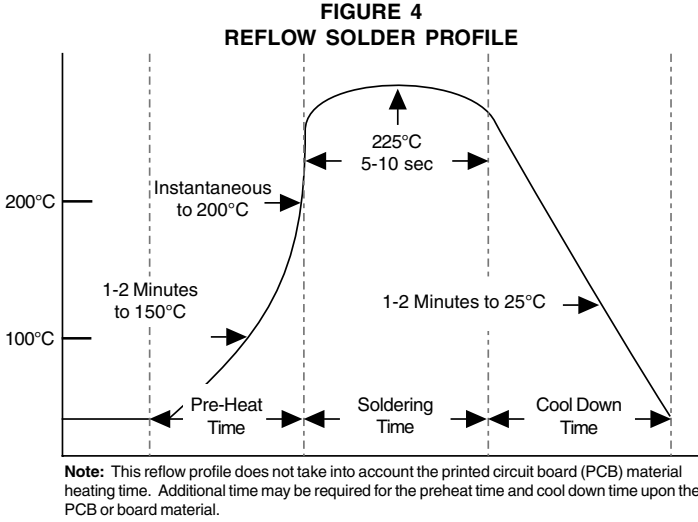
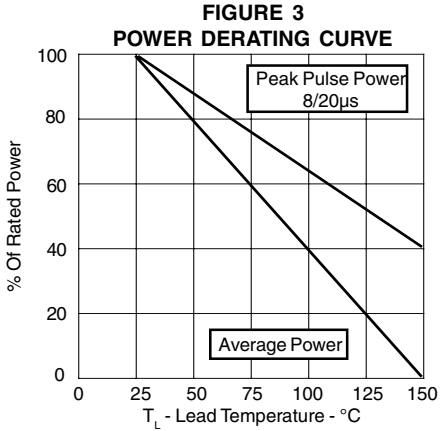
**FIGURE 1**  
**PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2**  
**PULSE WAVE FORM**

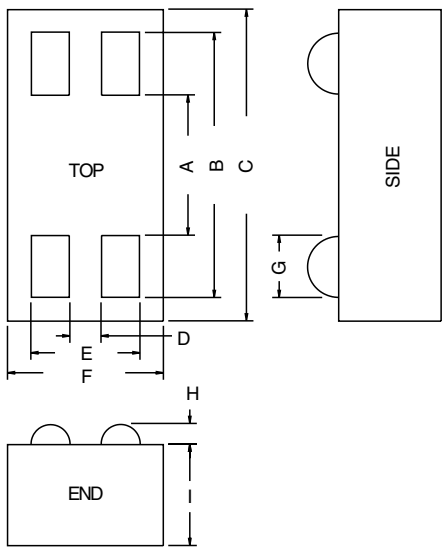

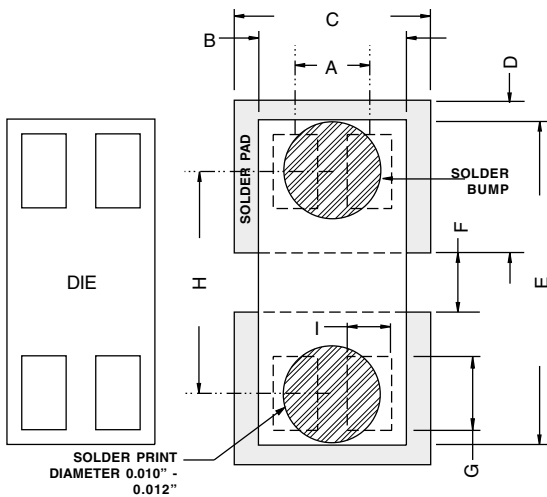
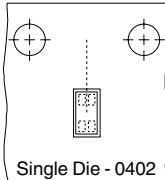


**GRAPHS**



# P0402FC3.3C\* thru P0402FC36C\*

## PACKAGE OUTLINE & DIMENSIONS

<p style="text-align: center;">PACKAGE OUTLINE</p> 	<p style="text-align: center;">0402</p> 	
PACKAGE DIMENSIONS		
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
G	0.20 NOM	0.008 NOM
H	0.127 MAX	0.005 MAX
I	0.076 MIN	0.003 MIN
	0.406 NOM	0.016 NOM
<p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>Controlling dimensions in inches.</li> <li>Decimal tolerances for mounting pad and outline: .xxx ± 0.05mm (± 0.002").</li> <li>Maximum chip size: 1.02 (0.040") by 0.51(0.020").</li> </ol>		
<p style="text-align: center;">MOUNTING PAD</p>  <p style="text-align: center;">SOLDER PRINT DIAMETER 0.010" - 0.012"</p>	PAD DIMENSIONS	
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
<p><b>NOTE:</b></p> <ol style="list-style-type: none"> <li>Top view of tape. Metal contacts are face down in tape package.</li> </ol>		
TAPE & REEL ORIENTATION		
 <p style="text-align: center;">Single Die - 0402</p>		
<p><b>NOTE:</b></p> <ol style="list-style-type: none"> <li>Preferred: Using 0.1mm (0.004") stencil.</li> </ol>		
<p><b>Outline &amp; Dimensions: Rev 3 - 11/02, 06001</b></p>		

### 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., P0402FC05C-T75-1).
- 8mm Paper Tape: 7 Inch Reels - 10,000 pieces per reel. Ordering Suffix: -T710-2 (i.e., P0402FC05C-T710-2).

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