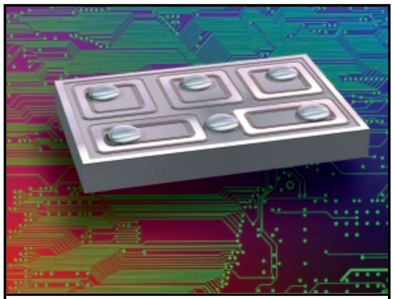
PROTEK DEVICES
Only One Name Means ProTek'Tion™

SFC05-5

FLIP CHIP ARRAY



PENTA

APPLICATIONS

- ✔ Cellular Phones
- ✔ Personnal Digital Assistant (PDA)
- ✔ Ground Positioning System (GPS)
- ✔ SMART & PCMCIA Cards

IEC COMPATIBILITY (EN61000-4)

- ✔ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✔ 61000-4-4 (EFT): 40A - 5/50ns
- ✔ 61000-4-5 (Surge): 24A, 8/20μs - Level 2(Line-Gnd) & Level 3(Line-Line)

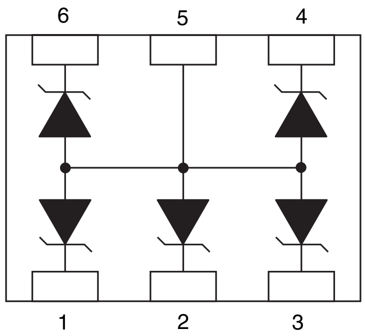
FEATURES

- ✔ ESD Protection > 25 kilovolts
- ✔ 250 Watts Peak Pulse Power per Line (tp = 8/20μs)
- ✔ Protects up to Five(5) Unidirectional & Four (4) Bidirectional Lines

MECHANICAL CHARACTERISTICS

- ✔ 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



BOTTOM VIEW

DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (t_p = 8/20µs) - 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	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ I_P = 5A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @8/20µs V_C @ I_{PP}	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	TYPICAL CAPACITANCE @0V, 1 MHz C_j pF
SFC05-5	5.0	6.0	9.5	11.0V @ 24A	10	150

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

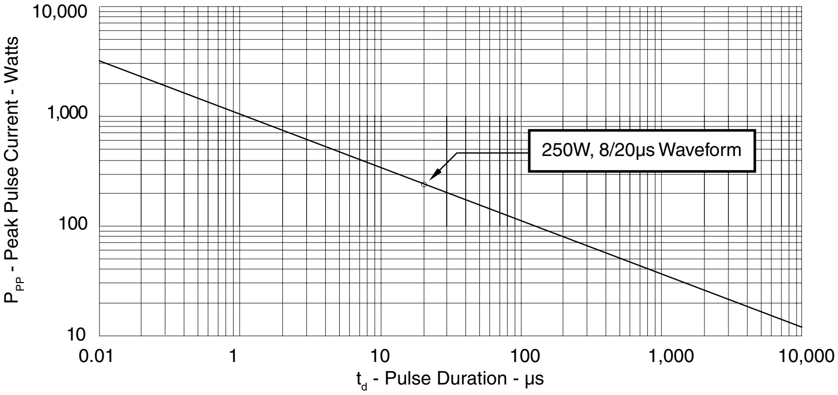
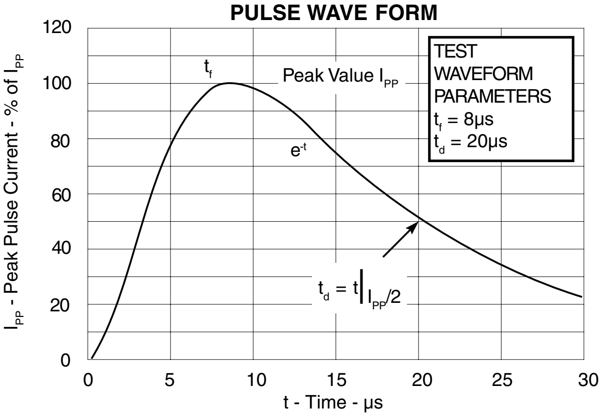


FIGURE 2
PULSE WAVE FORM



GRAPHS

FIGURE 3
POWER DERATING CURVE

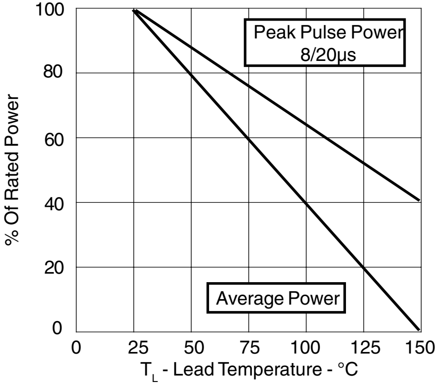
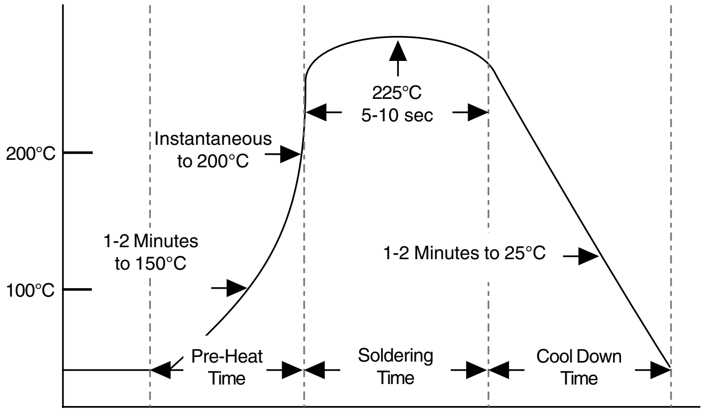
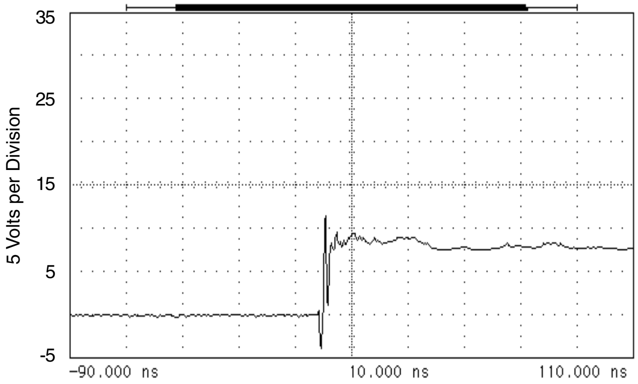


FIGURE 4
REFLOW SOLDER PROFILE



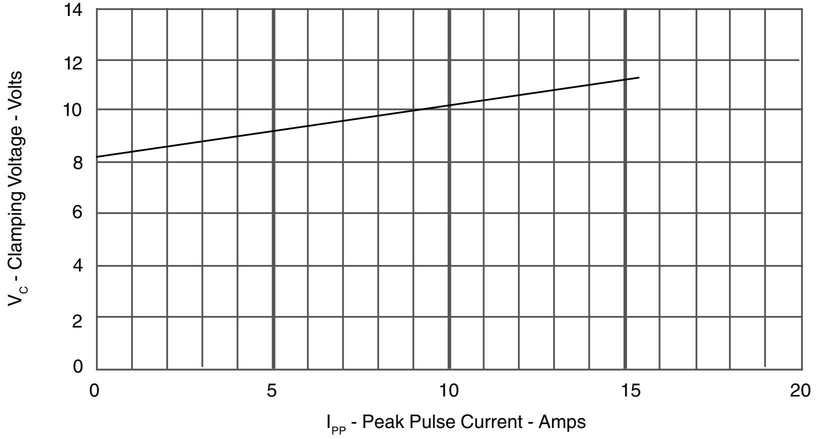
Note: This reflow profile does not take into account the printed circuit board (PCB) material heating time. Additional time may be required for the preheat time and cool down time upon the PCB or board material.

FIGURE 5
OVERSHOOT & CLAMPING VOLTAGE FOR SFC05-5



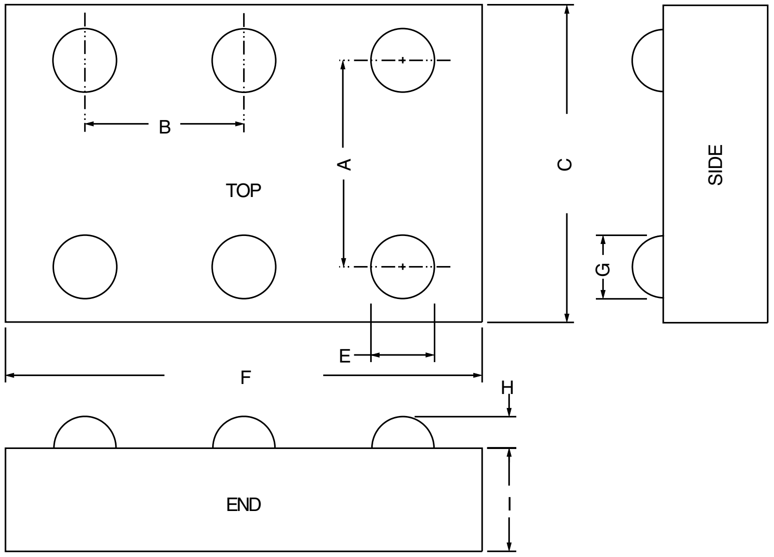
ESD Test Pulse - 25 kilovolt, 1/30ns (waveshape)

FIGURE 6
TYPICAL CLAMPING VOLTAGE VS PEAK PULSE CURRENT FOR SFC05-5



PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE



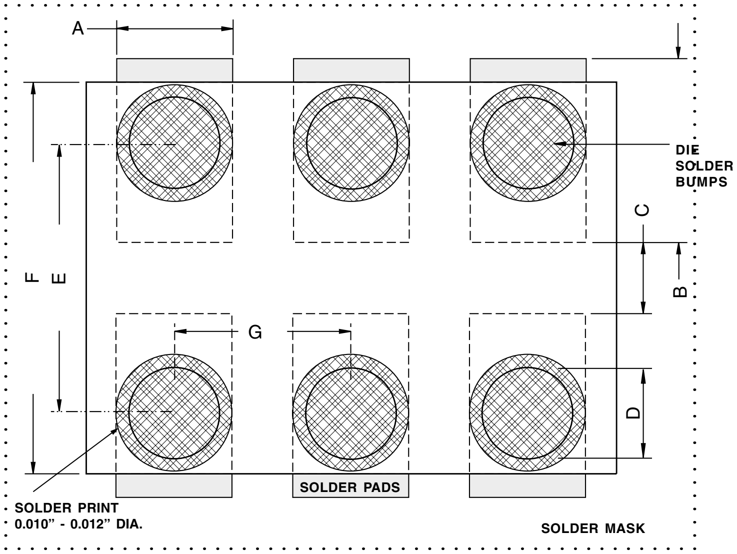
PACKAGE DIMENSIONS

DIM	MILLIMETERS	INCHES
A	0.510	0.020
B	0.510	0.020
C	0.99 ± 0.0254	0.039 ± 0.001
E	0.15 NOM	0.006 NOM
F	1.5 ± 0.0254	0.059 ± 0.001
G	0.15 NOM	0.006 NOM
H	See Note 3	See Note 3
	0.076 MIN	0.003 MIN
I	0.419 NOM	0.0165 NOM

NOTES:

1. Controlling dimensions in inches.
2. Decimal tolerances for mounting pad and outline: .xxx ± 0.05mm (± 0.002”).
3. “H” Dimensions for the SFC05-5 device are 0.10mm Max and 0.004” Max.

MOUNTING PAD LAYOUT - Option 1



PAD DIMENSIONS

DIM	MILLIMETERS	INCHES
A	0.305	0.012
B	0.457	0.018
C	0.203	0.008
D	0.254	0.010
E	0.510	0.020
F	0.990	0.039
G	0.510	0.020

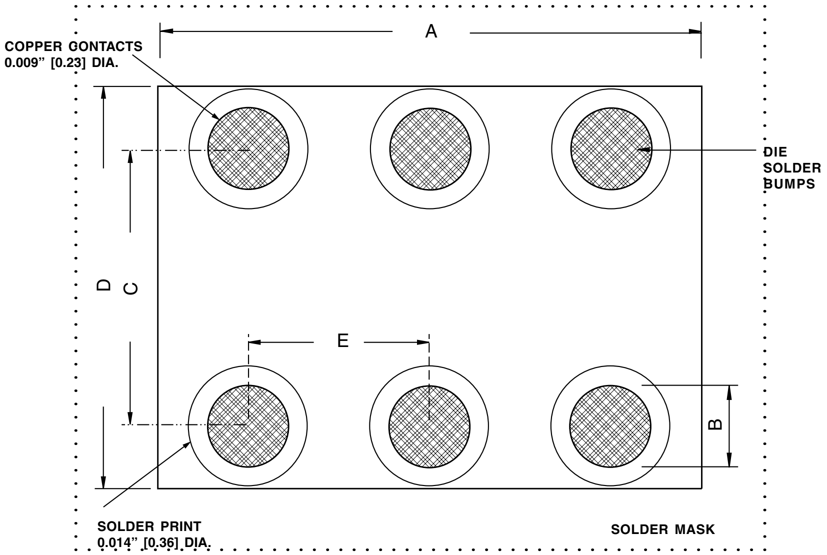
NOTE:

1. *Preferred:* Using 0.1mm (0.004”) stencil.

Outline & Dimensions: Rev 1 - 1/03, 06038

PACKAGE OUTLINE & DIMENSIONS

MOUNTING PAD LAYOUT - Option 2



PACKAGE DIMENSIONS

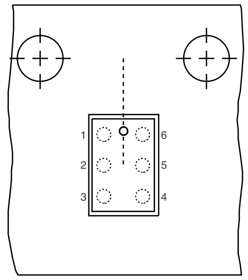
DIM	MILLIMETERS	INCHES
A	1.5 NOM	0.059
B	0.152 NOM	0.006 NOM
C	0.510	0.020
D	0.990	0.039
E	0.510	0.020

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.

Outline & Dimensions: Rev 0 - 10/02, 06039

TAPE & REEL ORIENTATION



NOTE:

1. Top view of tape. Solder bumps are face down in tape package.

TAPE & REEL ORDERING NOMENCLATURE

1. Surface mount product is taped and reeled in accordance with EIA 481.
2. *8mm Plastic Tape:* 7 Inch Reels - 5,000 pieces per reel. Ordering Suffix: -T75-1 (i.e., SFC05-5-T75-1).
3. *8mm Paper Tape:* 7 Inch Reels - 5,000 pieces per reel. Ordering Suffix: -T75-2 (i.e., SFC05-5-T75-2).

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