

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

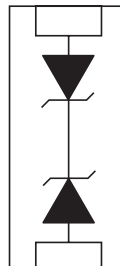
FEATURES

- ✓ Chip Scale Package 0.050" (1.270mm) x 0.030" (0.762mm)
- ✓ ESD Protection > 25 kilovolts
- ✓ Available in Voltages Ranging From 3.3V to 36V
- ✓ 250 Watts Peak Pulse Power per Line (tp = 8/20µs)
- ✓ Bidirectional Configuration & Monolithic Structure
- ✓ Protects 1 Line
- ✓ RoHS Compliant

MECHANICAL CHARACTERISTICS

- ✓ Encapsulated 0502 Chip
- ✓ Weight 0.73 milligrams (Approximate)
- ✓ Available in Lead-Free Plating
- ✓ Solder Reflow Temperature:
 Lead-Free - Sn/Ag/Cu, 96/3.5/0.5: 260-270°C
- ✓ Consult Factory for Leaded Device Availability
- ✓ Flammability Rating UL 94V-0
- ✓ 8mm Plastic & Paper Tape and Reel Per EIA Standard 481
- ✓ Device Marking On Reel

PIN CONFIGURATION



PKFC3.3C* thru PKFC36C*

DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20µs) - See Figure 1	P _{PP}	250	Watts
Operating Temperature	T _A	-55 to 150	°C
Storage Temperature	T _{STG}	-55 to 150	°C

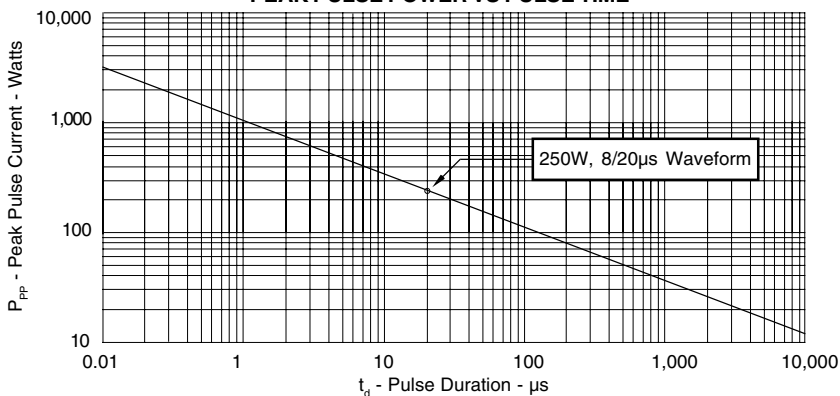
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (See Note 1)	DEVICE MARKING CODE	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) @ 8/20µs V _C @ I _{PP}	MAXIMUM LEAKAGE CURRENT (See Note 2) @ V _{WM} I _D µA	TYPICAL CAPACITANCE @ 0V, 1 MHz C pF
PKFC3.3C	03	3.3	4.0	7.0	12.5V @ 20A	75*	150
PKFC05C	05	5.0	6.0	9.8	14.7V @ 17A	10**	100
PKFC08C	08	8.0	8.5	13.4	19.2V @ 13A	10***	75
PKFC12C	12	12.0	13.3	19.0	29.7V @ 9.0A	1	50
PKFC15C	15	15.0	16.7	24.0	35.7V @ 7.0A	1	40
PKFC24C	24	24.0	26.7	43.0	55.0V @ 5.0A	1	30
PKFC36C	36	36.0	40.0	64.0	84.0V @ 3.0A	1	25

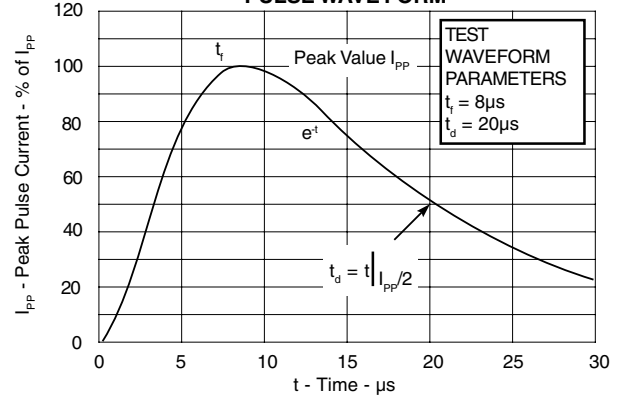
Note 1: All devices are bidirectional. Electrical characteristics apply in both directions.

Note 2: *Typical leakage current < 5µA @ 2.8V. **Typical leakage current < 500nA @ 3.3V. ***Typical leakage current < 200nA @ 5V.

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

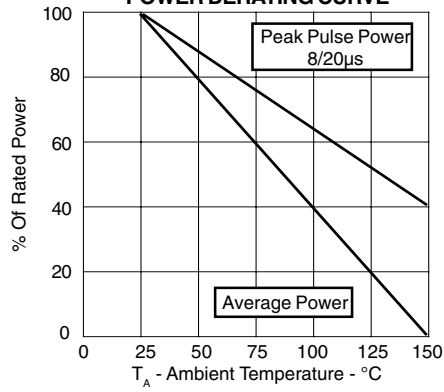


**FIGURE 2
PULSE WAVEFORM**

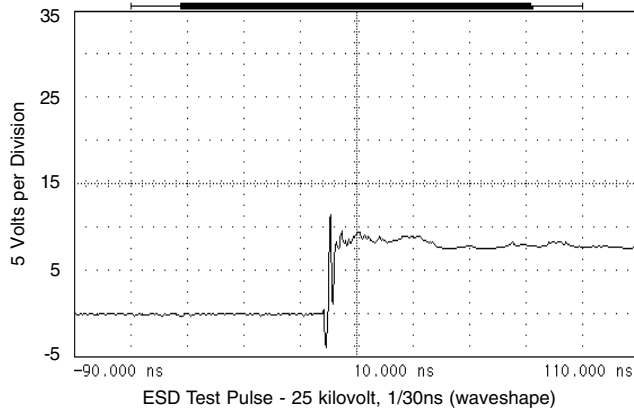


GRAPHS

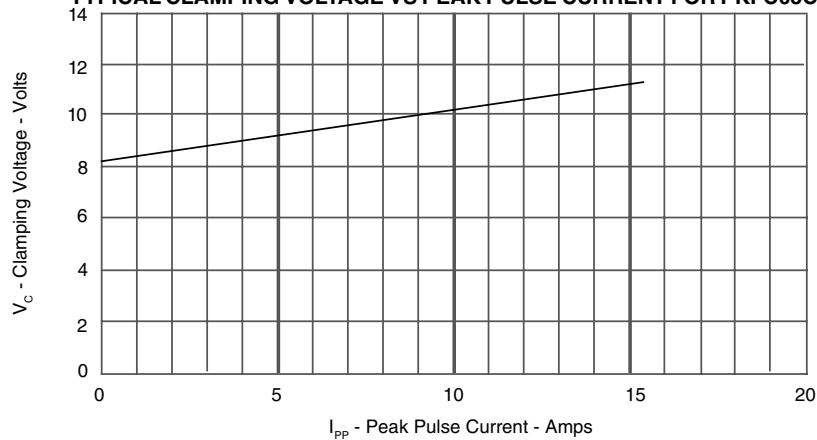
**FIGURE 3
 POWER DERATING CURVE**



**FIGURE 4
 OVERSHOOT & CLAMPING VOLTAGE FOR PKFC05C**



**FIGURE 5
 TYPICAL CLAMPING VOLTAGE VS PEAK PULSE CURRENT FOR PKFC05C**

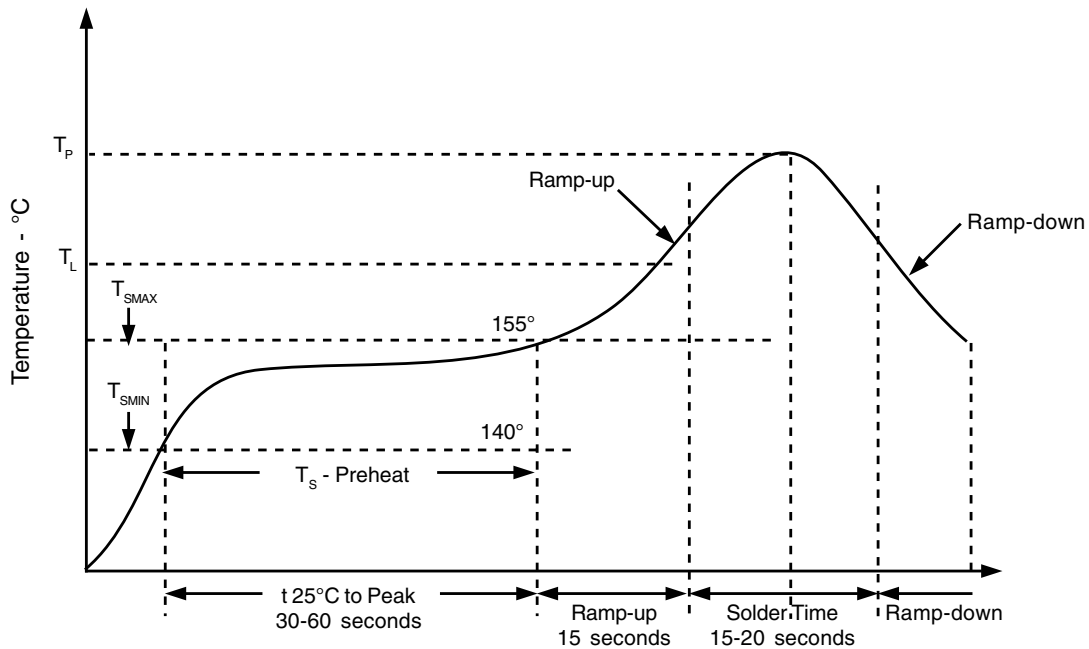
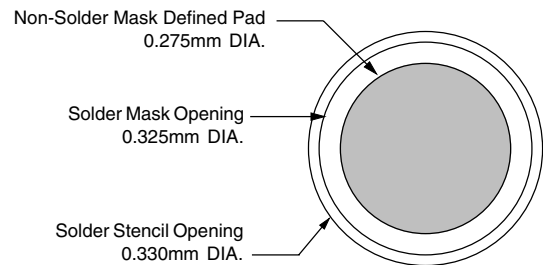


APPLICATION INFORMATION

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

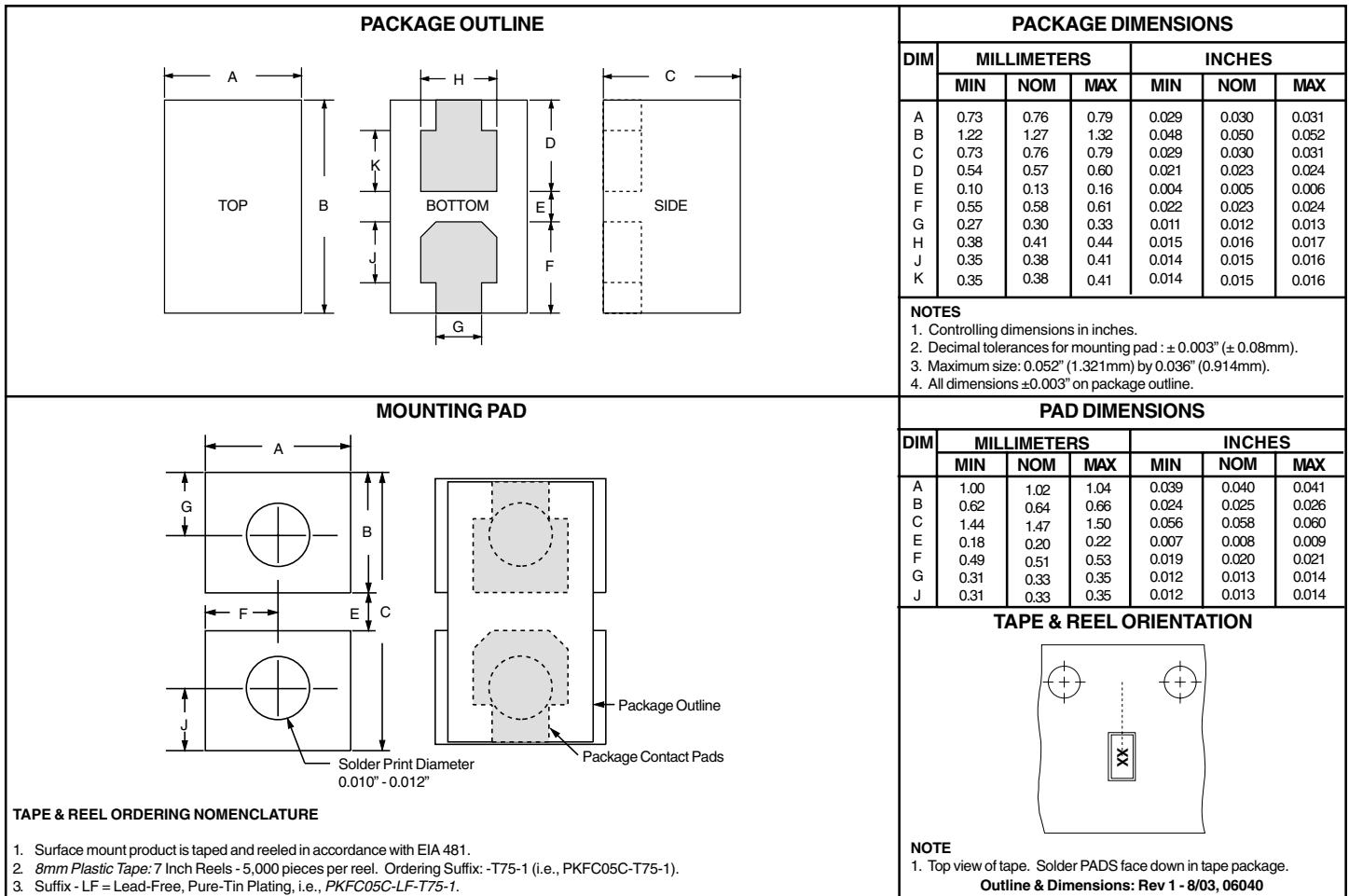
REQUIREMENTS
Temperature: T_p for Lead-Free (SnAgCu): 260-270°C T_p for Tin-Lead: 240-245°C Preheat time and temperature depends on solder paste and flux activation temperature, component size, weight, surface area & plating.

RECOMMENDED NON-SOLDER MASK DEFINED PAD ILLUSTRATION



PKFC3.3C* thru PKFC36C*

0502 PACKAGE OUTLINE & DIMENSIONS

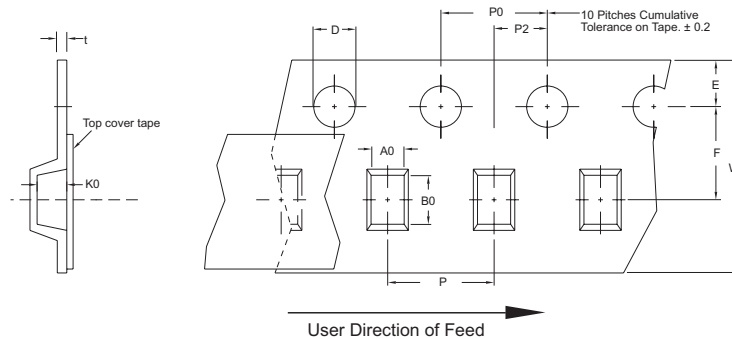


TAPE & REEL ORDERING NOMENCLATURE

- 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., PKFC05C-T75-1).
- Suffix - LF = Lead-Free, Pure-Tin Plating, i.e., PKFC05C-LF-T75-1.

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



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ProTek Devices
2929 South Fair Lane, Tempe, AZ 85282
Tel: 602-431-8101 Fax: 602-431-2288
E-Mail: sales@protekdevices.com
Web Site: www.protekdevices.com