

PACKAGED FLIP CHIP ARRAY

**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

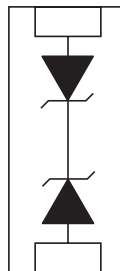
**FEATURES**

- ✓ **CHIP SCALE PACKAGE 0.050" (1.270mm) x 0.030" (0.762mm)**
- ✓ ESD Protection > 25 kilovolts
- ✓ Available in 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**

- ✓ Encapsulated 0502 Chip
- ✓ 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**



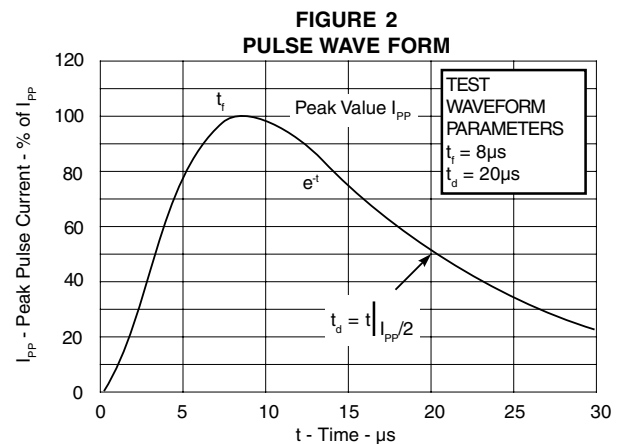
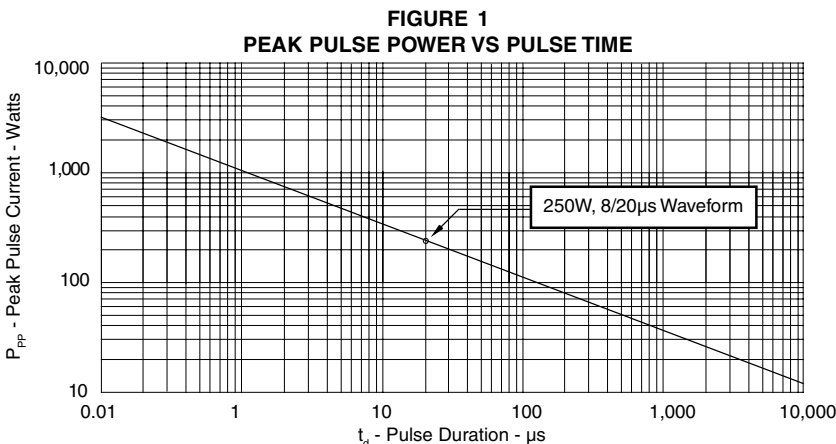
**DEVICE CHARACTERISTICS**

| MAXIMUM RATINGS @ 25°C Unless Otherwise Specified     |           |                |       |
|---|-----------|----------------|-------|
| PARAMETER   | SYMBOL    | VALUE          | UNITS |
| 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<br>(See Note 1)   | RATED STAND-OFF VOLTAGE<br><br>$V_{WM}$<br>VOLTS | MINIMUM BREAKDOWN VOLTAGE    | MAXIMUM CLAMPING VOLTAGE<br>(See Fig. 2) | MAXIMUM CLAMPING VOLTAGE<br>(See Fig. 2) | MAXIMUM LEAKAGE CURRENT<br>(See Note 2) | TYPICAL CAPACITANCE<br><br>@0V, 1 MHz<br>C<br>pF |
|   |  | @ 1mA<br>$V_{(BR)}$<br>VOLTS | @ $I_p = 1A$<br>$V_C$<br>VOLTS           | @ 8/20 $\mu s$<br>$V_C @ I_{PP}$         | @ $V_{WM}$<br>$I_D$<br>$\mu A$          |  |
| PKFC3.3C  | 3.3  | 4.0                          | 7.0                                      | 12.5V @ 20A                              | 75*                                     | 150  |
| PKFC05C   | 5.0  | 6.0                          | 9.8                                      | 14.7V @ 17A                              | 10**                                    | 100  |
| PKFC08C   | 8.0  | 8.5                          | 13.4                                     | 19.2V @ 13A                              | 10***                                   | 75   |
| PKFC12C   | 12.0   | 13.3                         | 19.0                                     | 29.7V @ 9.0A                             | 1                                       | 50   |
| PKFC15C   | 15.0   | 16.7                         | 24.0                                     | 35.7V @ 7.0A                             | 1                                       | 40   |
| PKFC24C   | 24.0   | 26.7                         | 43.0                                     | 55.0V @ 5.0A                             | 1                                       | 30   |
| PKFC36C   | 36.0   | 40.0                         | 64.0                                     | 84.0V @ 3.0A                             | 1                                       | 25   |

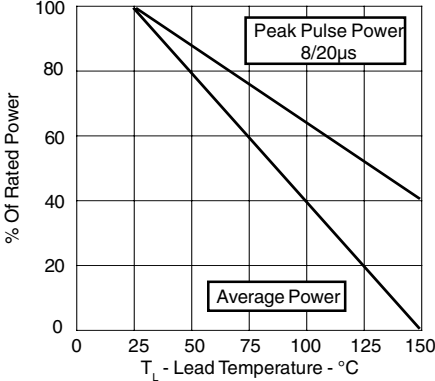
**Note 1:** All devices are bidirectional. Electrical characteristics apply in both directions.

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

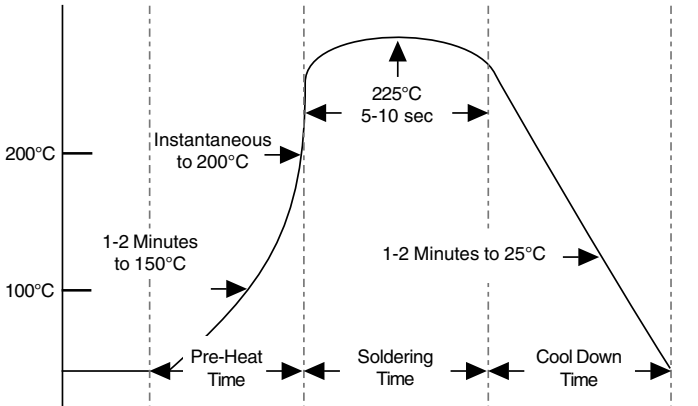


**GRAPHS**

**FIGURE 3  
 POWER DERATING CURVE**

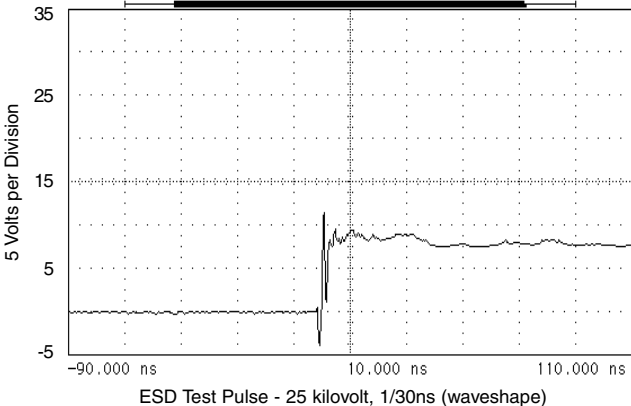


**FIGURE 4  
 REFLOW SOLDER PROFILE**

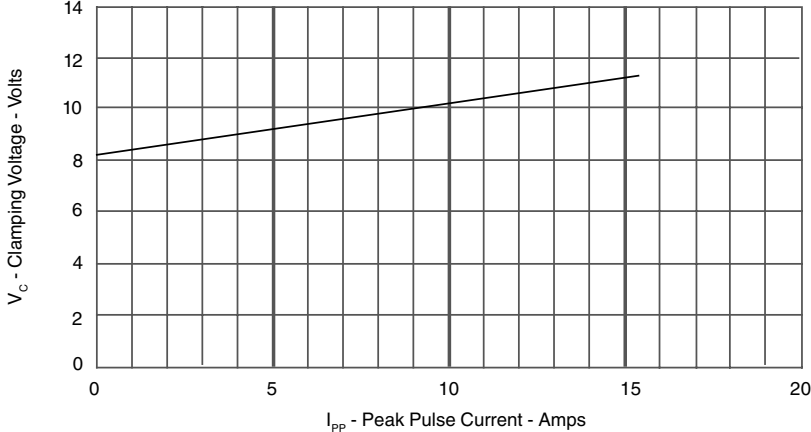


**Note:** This reflow profile does not take into account the printed circuit board (PCB) material heating time. Additional time may be required for the preheat time and cool down time upon the PCB or board material.

**FIGURE 5  
 OVERSHOOT & CLAMPING VOLTAGE FOR PKFC05C**



**FIGURE 6  
 TYPICAL CLAMPING VOLTAGE VS PEAK PULSE CURRENT FOR PKFC05C**



**PACKAGE OUTLINE & DIMENSIONS**

| PACKAGE OUTLINE |             | PACKAGE DIMENSIONS |  |
|-----------------|-------------|--------------------|--|
| DIM             | MILLIMETERS | INCHES             |  |
| A               | 0.838       | 0.033              |  |
| B               | 1.245       | 0.049              |  |
| C               | 0.762       | 0.030              |  |
| D               | 0.533       | 0.021              |  |
| E               | 0.228       | 0.009              |  |
| F               | 0.533       | 0.021              |  |
| G               | 0.305       | 0.012              |  |
| H               | 0.432       | 0.017              |  |
| J               | 0.432       | 0.017              |  |
| K               | 0.355       | 0.014              |  |

| MOUNTING PAD |             | PAD DIMENSIONS |  |
|--------------|-------------|----------------|--|
| DIM          | MILLIMETERS | INCHES         |  |
| A            | 1.016       | 0.040          |  |
| B            | 0.635       | 0.025          |  |
| C            | 1.473       | 0.058          |  |
| E            | 0.203       | 0.008          |  |
| F            | 0.508       | 0.020          |  |
| G            | 0.343       | 0.0135         |  |
| J            | 0.343       | 0.0135         |  |

| TAPE & REEL ORIENTATION   |  |
|---|--|
|   |  |
| <p><b>NOTE</b></p> <p>1. Top view of tape. Solder PADS face down in tape package.</p> |  |

**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., PKFC05C-T75-1).
3. *8mm Paper Tape:* 7 Inch Reels - 5,000 pieces per reel. Ordering Suffix: -T75-2 (i.e., PKFC05C-T75-2)

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