

**SURFACE MOUNT 130 kW
 Transient Voltage Suppressor**

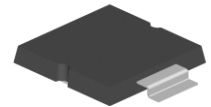
- High Reliability controlled devices
- Bidirectional (CA) construction
- 275 V standoff voltages (V_{WM})
- Fast response

DEVICES MPLAD130KP275CA and MPLAD130KP275CV, e3

**LEVELS
 M, MA, MX, MXL**

FEATURES

- High reliability controlled devices with wafer fabrication and assembly lot traceability
- 100 % surge tested devices
- Low profile surface mount
- Low package inductance
- Available as either low clamp with "CV" suffix or normal clamping features with "CA" suffix
- Optional up screening available by replacing the M prefix with MA, MX or MXL. These prefixes specify various screening and conformance inspection options based on MIL-PRF-19500. Refer to [MicroNote 129](#) for more details on the screening options.
- Suppresses transients up to 130 kW1 @ 6.4/69 μ s
- Moisture classification is Level 1 with no dry pack required per IPC/JEDEC J-STD-020B
- RoHS compliant devices available by adding an "e3" suffix
- 3 σ lot norm screening performed on Standby Current I_D



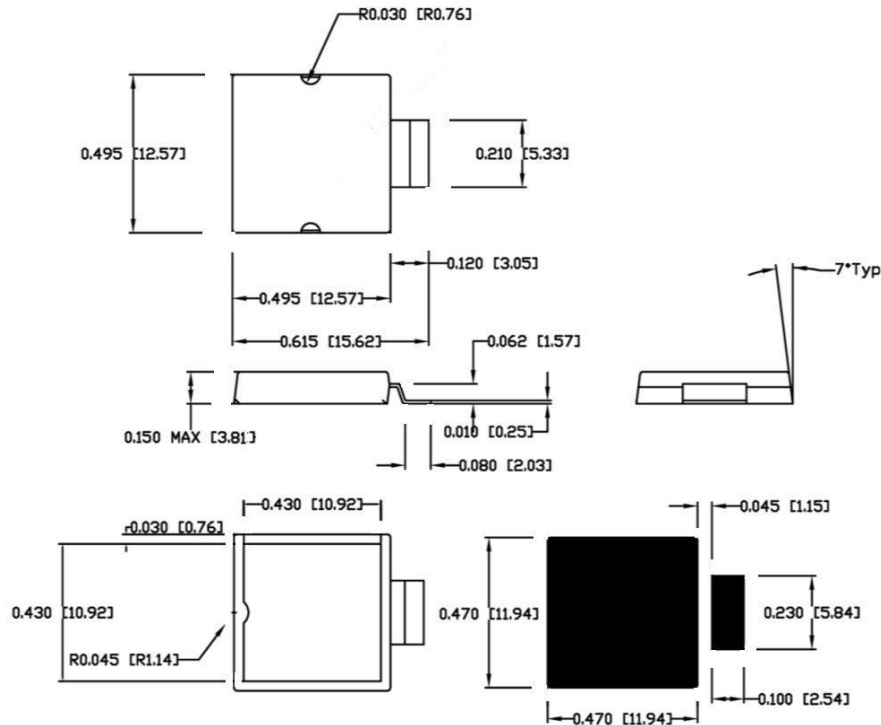
MAXIMUM RATINGS

- Peak Pulse Power dissipation at 25 °C: 130,0001 watts @ 6.4/69 μ s (also see Figure 1) with impulse repetition rate (duty factor) of 0.05% or less
- tclamping (0 volts to VBR min.): < 5 ns (theoretical)
- Operating and Storage temperature: -55 °C to +150 °C
- Thermal resistance: 0.5 °C/W junction to case or 50 °C/W junction to ambient when mounted on FR4 PC board with recommended mounting pad (see page 2) and 1oz Cu
- Steady-State Power dissipation: 250 watts at $T_C = 25$ °C with good heat sink, or 2.5 watts at $T_A = 25$ °C if mounted on FR4 PC board as described for thermal resistance
- Temperature Coefficient of voltage: 0.1 %/°C
- Solder temperatures: 260 °C for 10 s (maximum)

MECHANICAL AND PACKAGING

- Void-free transfer molded thermosetting epoxy body meeting UL94V-0
- Tin-Lead (90 % Sn, 10 % Pb) or RoHS (100 % Sn) compliant annealed matte-tin plating readily solderable per MIL-STD-750, method 2026
- Body marked with part number
- No Cathode band for Bi-directional devices
- Available in custom tape-and-reel or bulk packaging
- TAPE-AND-REEL Standard per EIA-481-B (add "TR" suffix to part number)
- Weight: 2.2 grams (approximately)

PACKAGE AND MOUNTING PAD DIMENSIONS Inches [mm]



SYMBOLS & DEFINITIONS

| Symbol | Definition | Symbol | Definition |
|----------|---------------------------------|----------|--------------------------------|
| V_{WM} | Working Peak (Standoff) Voltage | I_{PP} | Peak Pulse Current |
| P_{PP} | Peak Pulse Power | V_C | Clamping Voltage |
| V_{BR} | Breakdown Voltage | I_{BR} | Breakdown Current for V_{BR} |
| I_D | Standby Current | | |

ELECTRICAL CHARACTERISTICS @ 25°C

| Description | Symbol | Conditions | Min | Typ | Max | Unit |
|--------------------------|----------|---------------------------|-----|-----|-----|---------|
| Breakdown Voltage | V_{BR} | $I_{BR} = 5mA$ | 300 | | | V |
| Working Standoff Voltage | V_{WM} | | | | 275 | V |
| Standby Current | I_D | $V_R = V_{WM}$ | | | 5 | μA |
| Peak Pulse Current 1 | I_{PP} | $tr=6.4\mu s, tp=69\mu s$ | | | 292 | A |
| Clamping Voltage | V_C | $I_C = I_{PP}$ | | | | |
| PLAD130KP275CV | | | | | 400 | V |
| PLAD130KP275CA | | | | | 445 | V |

Note:

 1) Also equivalent to 40 kW at a longer pulse of 10/1000 us with clamping voltages shown and $I_{PP} = 90A$

GRAPHS

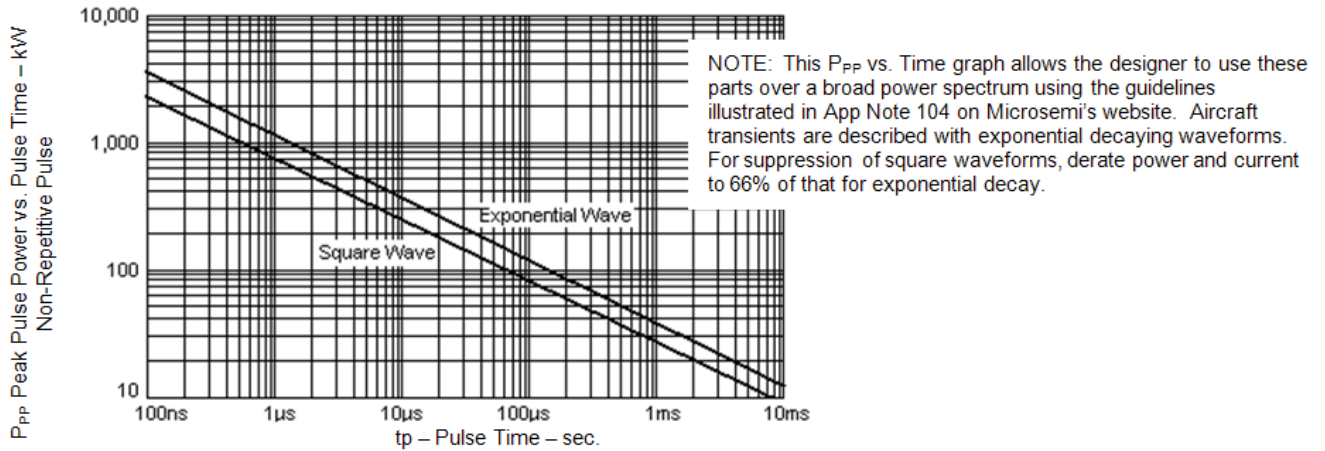


FIGURE 1
 Peak Pulse Power vs. Pulse Time
 To 50% of Exponentially Decaying Pulse

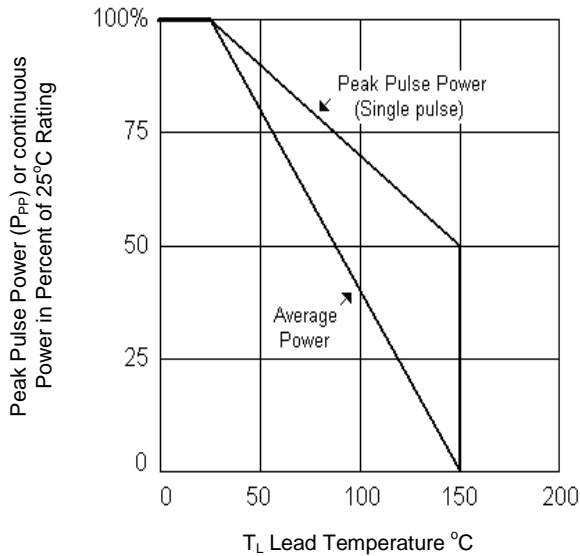


FIGURE 2
 Derating Curve