

➤ General Description

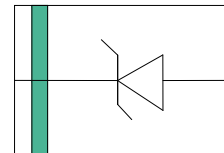
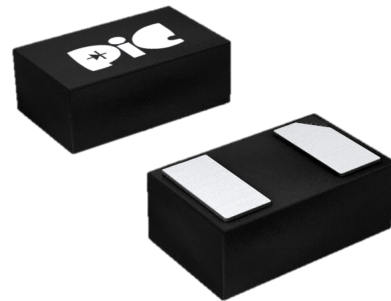
The PAE0511EUF is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium.

It has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge), and EFT (electrical fast transients).

➤ Feature

- Peak Power Dissipation – 300 W (8 x 20 us Waveform)
- Stand-off Voltage: 5.0 V
- Replacement for MLV (0402)
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Low Capacitance
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- ROHS compliant
- Solid-state TVS Process technology

➤ DFN-1006



➤ Application

- Data Line :USB1.0 VGA,
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV
- Cellular handsets and accessories
- Portable instrumentation
- Peripherals

➤ Protection solution to meet

- IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

➤ Maximum Ratings (TA=25°C Unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|---------|---------------|-------|
| Peak Pulse Power (tp=8/20μs waveform) | PPPP | 300 | Watts |
| ESD Rating per IEC61000-4-2: | Contact | 30 | KV |
| | Air | 30 | |
| Lead Soldering Temperature | TL | 260 (10 sec.) | °C |
| Operating Temperature Range | TJ | -55 ~ 150 | °C |
| Storage Temperature Range | TSTG | -55 ~ 150 | °C |
| Lead Solder Temperature – Maximum (10 Second Duration) | TL | 260 | °C |

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

*Other voltages may be available upon request.

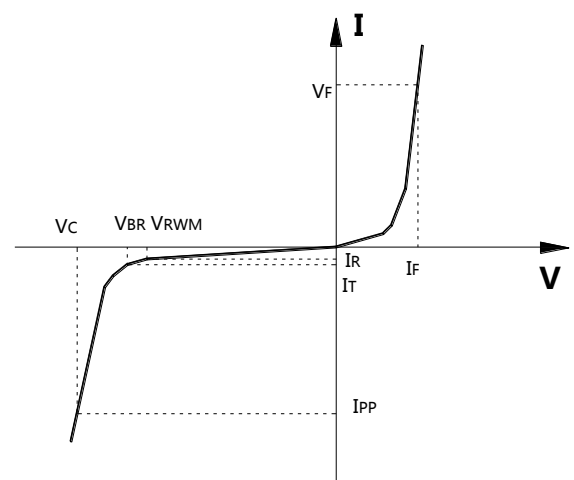
1. Non-repetitive current pulse, per Figure 1.

➤ Electrical Characteristics (TA=25°C Unless otherwise specified)

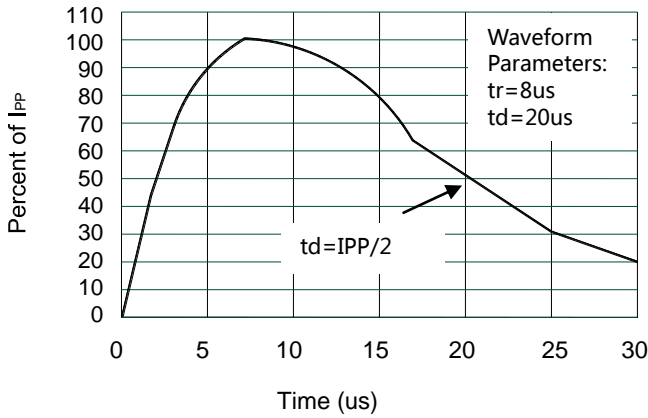
| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Units |
|-----------------|---------------------------|-------------------------------------|------|------|------|-------|
| VRWM | Reverse Working Voltage | | | | 5.0 | V |
| VBR | Reverse Breakdown Voltage | IT = 1mA, | 6.0 | | | V |
| IR | Reverse Leakage Current | VRWM = 5V, | | | 1 | μA |
| VF | Diode Forward Voltage | IF = 15mA | | 0.85 | 1.2 | V |
| VC | Clamping Voltage | I _{PP} = 1A, tp = 8/20μs, | | | 8.7 | V |
| | | I _{PP} = 18A, tp = 8/20μs, | | | 17 | V |
| I _{PP} | Peak Pulse Current | tp = 8/20μs | | | 22 | A |
| C _J | Junction Capacitance | VR = 0V, f = 1MHz, | | 150 | | pF |

Junction capacitance is measured in VR=0V,F=1MHz

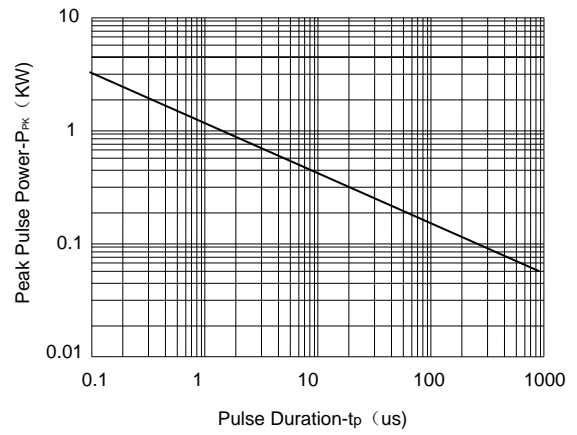
| Symbol | Parameter |
|--------|------------------------------|
| VRWM | Working Peak Reverse Voltage |
| VBR | Breakdown Voltage @ IT |
| VC | Clamping Voltage @ IPP |
| IT | Test Current |
| IRM | Leakage current at VRWM |
| IPP | Peak pulse current |
| CO | Off-state Capacitance |
| CJ | Junction Capacitance |



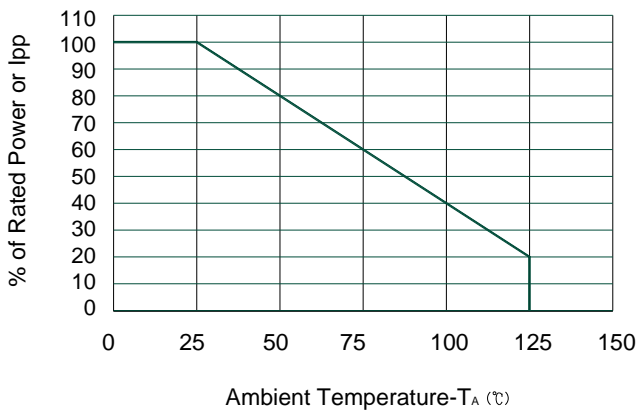
➤ Typical Characteristics



Pulse Waveform



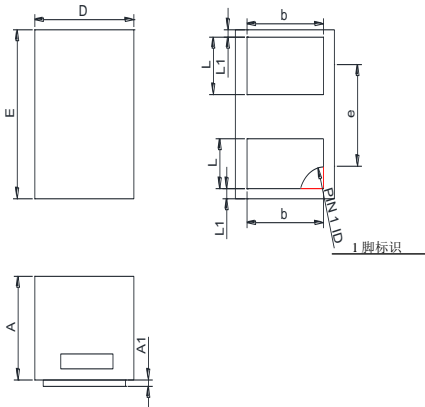
Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve

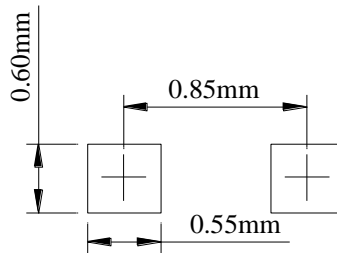
➤ Package Information (DFN1006)

Case Material: Molded Plastic. UL Flammability



| DIM | Millimeters | |
|-----|-------------|------|
| | Min | Max |
| A | 0.30 | 0.50 |
| A1 | 0.00 | 0.05 |
| D | 0.55 | 0.65 |
| E | 0.95 | 1.05 |
| b | 0.25 | 0.60 |
| e | 0.65TYP | |
| L | 0.15 | 0.35 |
| L1 | 0.05REF | |

Recommended Pad outline



➤ Ordering Information

| Part Number | Description | Quantity |
|-------------|--------------|-----------|
| PAE0511EUF | DFN1006 Reel | 10000 pcs |

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