

Features

- low clamping voltage
- Low leakage current
- Small package
- Low Voltage Clamping Due To Integrated Zener Diode
- Four Ultra-Low Input Capacitance Rail-to-Rail Protection Diodes
- Lead-free parts meet RoHS requirements.
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

Applications

- Digital Cameras
- Portable Instrumentation
- Notebooks, Desktops, and Servers
- Personal Digital Assistants (PDAs)
- Cell phone handsets and accessories

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23-6L
- Terminals :Plated terminals, solderable per MIL-STD-750 Method 2026
- Mounting Position : Any
- Marking code: V05

Package outline

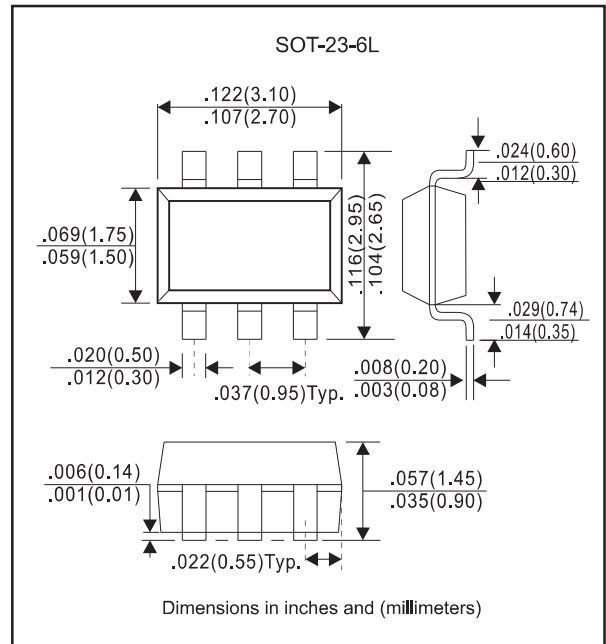


Fig. 1A

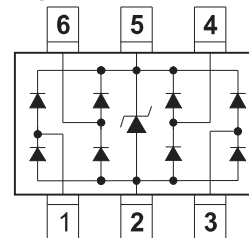
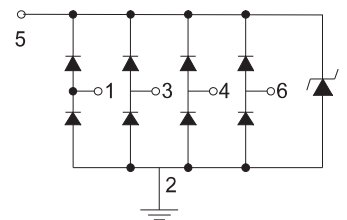


Fig. 1B



Maximum ratings (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter | Symbol | Ratings | Unit |
|--|-----------|----------------------|--------------------|
| Peak pulse power(8/20us) | P_{PP} | 60 | W |
| Peak pulse current IEC 61000-4-5(8/20us) | I_{PP} | 4 | A |
| ESD per IEC 61000-4-2(air) ESD per IEC 61000-4-2(contact) | V_{ESD} | ± 15 ± 15 | kV |
| Operating junction temperature range | T_{opr} | -55 to +125 | $^{\circ}\text{C}$ |
| Storage temperature range | T_{stg} | -55 to +150 | $^{\circ}\text{C}$ |

Electrical characteristics (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter | Conditions | Symbol | Min. | Typ. | Max. | Unit |
|---|---|-----------|------|------|------|---------------|
| Reverse working voltage | any I/O pin to GND | V_{RWM} | | | 5.0 | V |
| Reverse breakdown voltage | $I_T = 1\text{mA}$, any I/O pin to GND | V_{BR} | 6.0 | | | V |
| Reverse leakage current | $V_{RWM} = 5\text{V}$, any I/O pin to GND | I_R | | | 5.0 | μA |
| Clamping voltage | $I_{PP} = 1\text{A}$, $tp = 8/20\mu\text{s}$ I/O pin to GND | V_{C1} | | | 11 | V |
| | $I_{PP} = 4\text{A}$, $tp = 8/20\mu\text{s}$ I/O pin to GND | V_{C2} | | | 15 | V |
| Junction capacitance Between channel | $V_R = 0\text{V}$, $f = 1\text{MHz}$, between I/O pins | C_{J1} | | 0.5 | | pF |
| Junction capacitance Between I/O and GND | $V_R = 0\text{V}$, $f = 1\text{MHz}$, any I/O pin to GND | C_{J2} | | 1.0 | | pF |

Rating and characteristic curves

Figure 1: Peak Pulse Power vs. Pulse Time

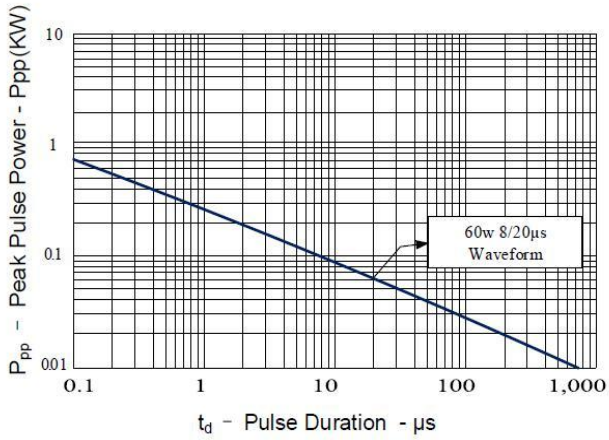


Figure 2: Power Derating Curve

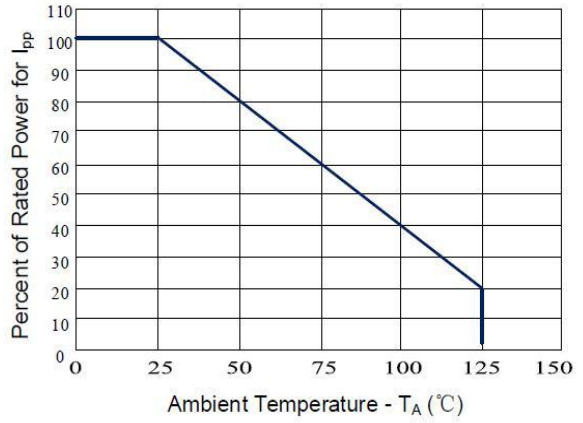


Figure 3: Capacitance vs. Reverse Voltage

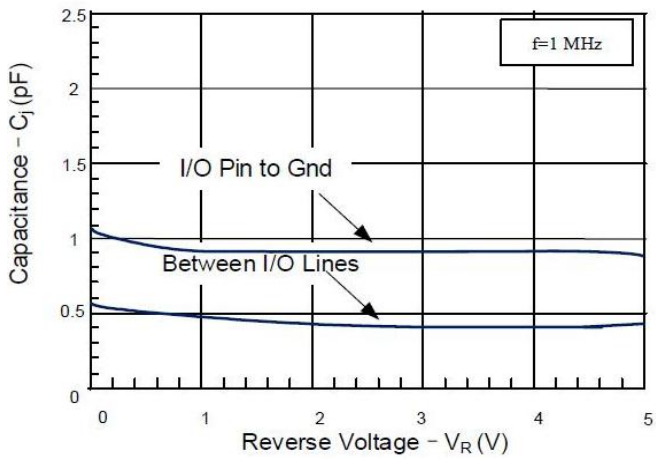


Figure 4: Clamping Voltage vs. Peak Pulse Current

