

MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

Product data sheet


TO-277


■ Features

- Low forward voltage drop.
- Excellent high temperature stability.
- Fast switching capability.
- Suffix "G" indicates Halogen-free part, ex.CP10S45SG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : Molded plastic, TO-277.
- Lead : Solder plated, solderable per MIL-STD-750, Method 2026.
- Polarity: Indicated by cathode band.
- Mounting Position : Any.
- Weight : Approximated 0.093 grams.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.
 Single phase half wave, 60Hz, resistive or inductive load.
 For capacitive load, derate current by 20%.

| TYPE NUMBER | SB2045L | UNITS |
|---|------------|-------|
| Maximum Recurrent Peak Reverse Voltage | 45 | V |
| Maximum RMS Voltage | 32 | V |
| Maximum DC Blocking Voltage | 45 | V |
| Maximum Average Forward Rectified Current See Fig. 1 | 20.0 | A |
| Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | 200 | A |
| Maximum Instantaneous Forward Voltage at 20.0A | 0.52 | V |
| Maximum DC Reverse Current Ta=25°C | 0.3 | mA |
| at Rated DC Blocking Voltage Ta=100°C | 20 | mA |
| Typical Junction Capacitance (Note1) | 650 | pF |
| Typical Thermal Resistance R JA (Note 2) | 31 | °C/W |
| Operating Temperature Range Tj | -65 — +150 | °C |
| Storage Temperature Range Tstg | -65 — +150 | °C |

Note : 1.FR-4 PCB, 2oz.Copper.

2.Polyimide PCB, 2oz.Copper.Cathode pad dimensions 18.8mm x 14.4mm.Anode pad dimensions 5.6mm x 14.4mm.

RATING AND CHARACTERISTIC CURVES

Fig. 1 - Forward Power Dissipation

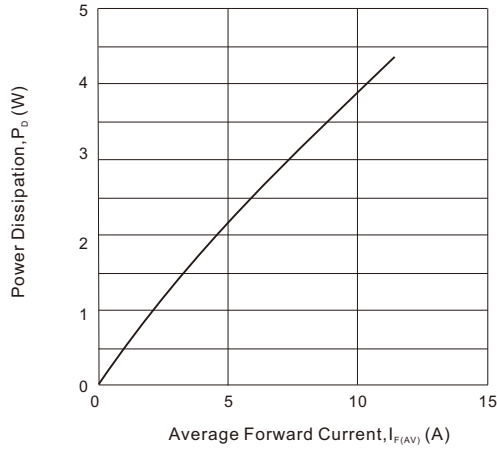


Fig. 2 - Instantaneous Forward Characteristics

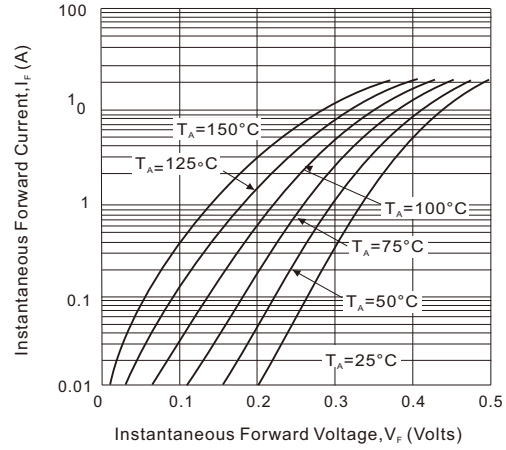


Fig. 3 - Reverse Characteristics

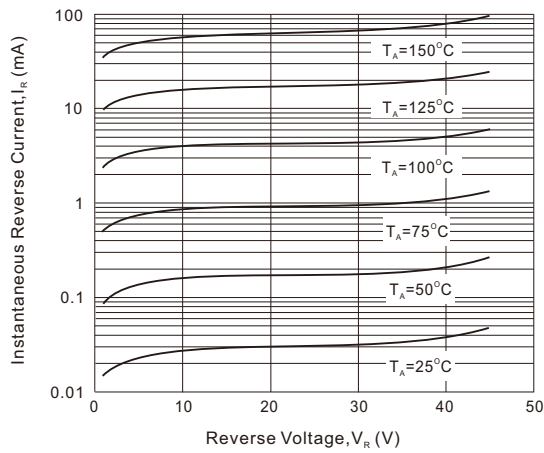


Fig. 4 - Forward Current Derating Curve

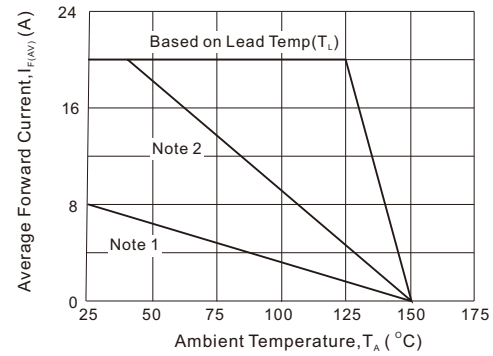


Fig. 5 - Total Capacitance VS. Reverse Voltage

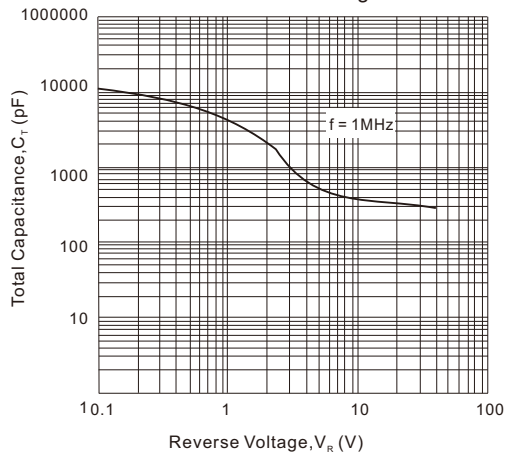
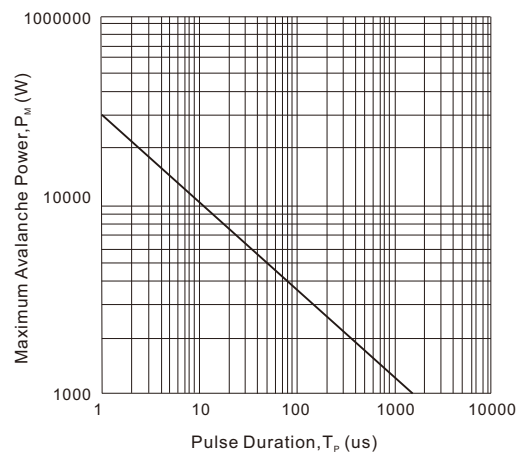
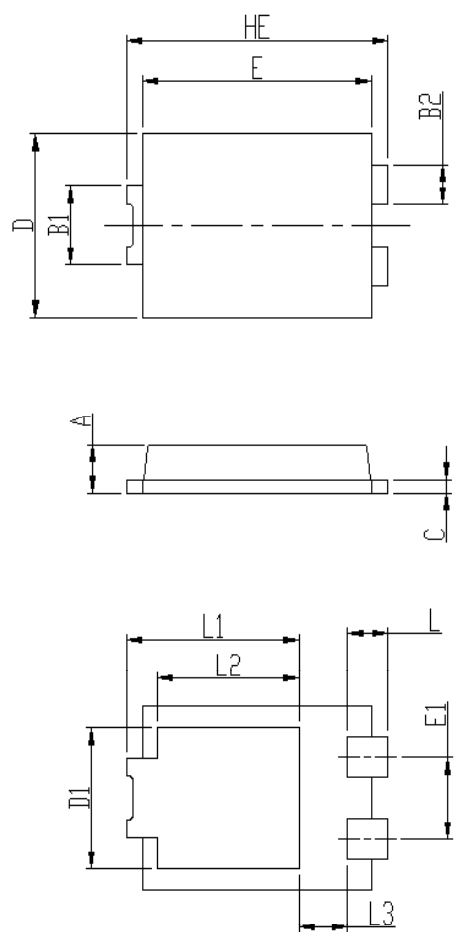


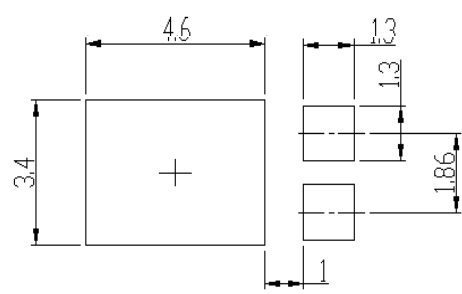
Fig. 6 - Maximum Avalanche Power Curve





| DIM | Unit: mm | | Unit: inch | |
|-----|-----------|-----|------------|-------|
| | MIN | MAX | MIN | MAX |
| HE | 6.4 | 6.6 | 0.252 | 0.260 |
| E | 5.6 | 5.8 | 0.220 | 0.228 |
| D | 4.1 | 4.3 | 0.161 | 0.169 |
| B1 | 1.7 | 1.9 | 0.067 | 0.075 |
| B2 | 0.8 | 1 | 0.031 | 0.039 |
| A | 1.05 | 1.2 | 0.041 | 0.047 |
| C | 0.3 | 0.4 | 0.012 | 0.016 |
| L | 0.85 | 1.1 | 0.033 | 0.043 |
| L1 | 4.2 | 4.4 | 0.165 | 0.173 |
| L2 | 3.52 Typ. | | 0.139 Typ. | |
| L3 | 1.1 | 1.4 | 0.043 | 0.055 |
| D1 | 3 | 3.3 | 0.118 | 0.130 |
| E1 | 1.86 Typ. | | 0.073 Typ. | |

T0-277 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

REEL SPECIFICATION

| | | |
|---------|--------|------|
| P/N | PKG | QTY |
| SB2045L | TO-277 | 5000 |

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