

Features

- Zero Reverse Recovery Current
- Positive Temperature Coefficient
- High-Speed Switching
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant(Note 2) ("P" Suffix designates RoHS Compliant. See ordering information)

Benefits

- Temperature-Independent Performance
- Low Switching Loss
- Low Heat Dissipation Requirements

Applications

- Switching Power Supply
- Power Factor Correction
- Motor Drive, Traction
- Charging Pile

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 1.1°C/W Junction to Case

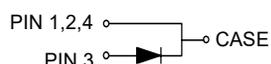
| MCC Part Number | Device Marking |
|-----------------|----------------|
| SICB1060P | SICB1060P |

| | | | |
|---|-----------|------|--|
| Peak Repetitive Reverse Voltage | V_{RRM} | 650V | |
| Surge Peak Reverse Voltage | V_{RSM} | 650V | |
| DC Reverse Voltage | V_{DC} | 650V | |
| Average Forward Current | I_F | 10A | $T_C=154^\circ\text{C}$ |
| Non-repetitive Peak Forward Surge Current | I_{FSM} | 70A | $T_C=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Pulse |
| Power Dissipation | P_D | 136W | $T_C=25^\circ\text{C}$ |

Note:

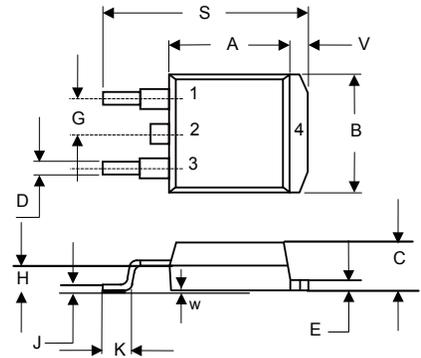
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

Internal Structure:



10Amp Silicon Carbide Schottky Barrier Rectifier 650 Volts

D²-PAK



| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|-------|-------|-------|------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | 0.331 | 0.370 | 8.40 | 9.40 | |
| B | 0.378 | 0.417 | 9.60 | 10.60 | |
| C | 0.165 | 0.189 | 4.20 | 4.80 | |
| D | 0.027 | 0.037 | 0.68 | 0.94 | |
| E | 0.045 | 0.055 | 1.14 | 1.40 | |
| G | 0.010 | | 2.54 | | TYP. |
| H | 0.096 | 0.134 | 2.43 | 3.40 | |
| J | 0.011 | 0.025 | 0.28 | 0.64 | |
| K | 0.071 | 0.131 | 1.80 | 3.32 | |
| S | 0.575 | 0.625 | 14.60 | 15.87 | |
| V | 0.042 | 0.058 | 1.07 | 1.47 | |
| W | 0.000 | 0.010 | 0.00 | 0.25 | |

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

| Parameter | Symbol | Conditions | Typ. | Max. | Units |
|---------------------------|--------|-----------------------------|------|------|---------|
| Forward Voltage | V_F | $I_F=10A, T_J=25^\circ C$ | 1.35 | 1.55 | V |
| | | $I_F=10A, T_J=175^\circ C$ | 1.8 | | V |
| Reverse Leakage Current | I_R | $V_R=650V, T_J=25^\circ C$ | 0.5 | 25 | μA |
| | | $V_R=650V, T_J=175^\circ C$ | 2 | | μA |
| Total Capacitive Charge | Q_C | $V_R=400V$ | 30 | | nC |
| Total capacitance | C | $V_R=0V, f=1MHz$ | 543 | | pF |
| | | $V_R=200V, f=1MHz$ | 55 | | pF |
| | | $V_R=400V, f=1MHz$ | 52 | | pF |
| Capacitance Stored Energy | E_C | $V_R=400V$ | 3.7 | | μJ |

Curve Characteristics

Fig. 1 - Typical Forward Characteristics

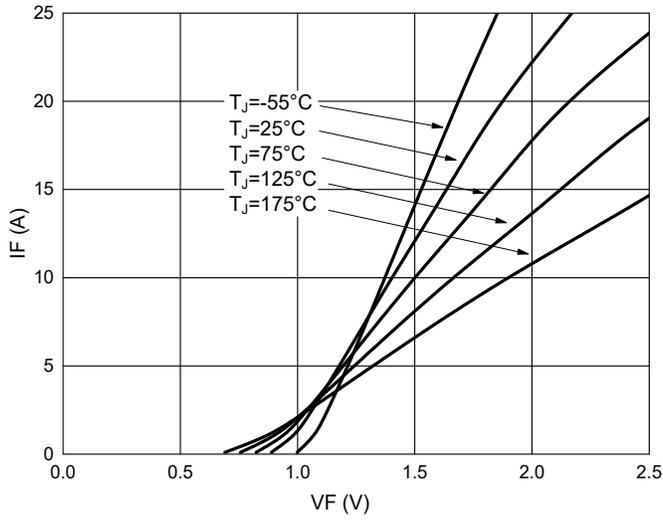


Fig. 2 - Typical Reverse Leakage Characteristics

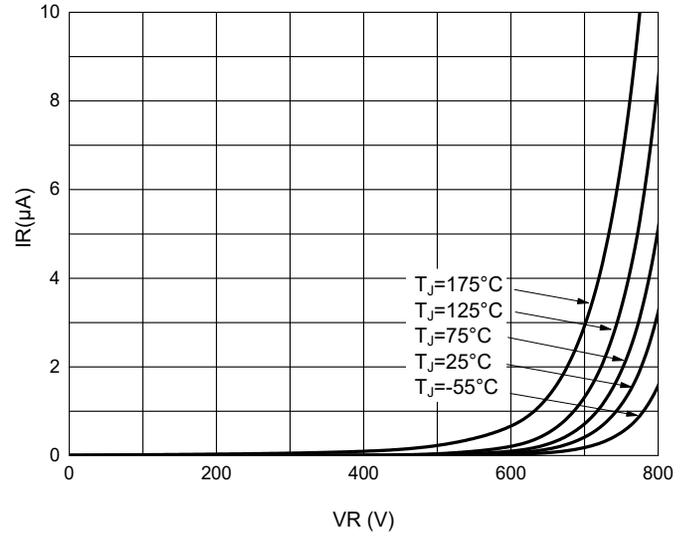


Fig. 3 - Capacitance vs Reverse Voltage

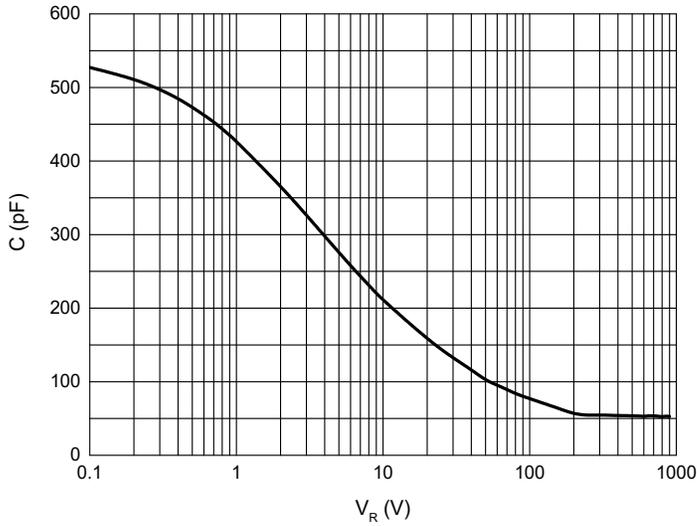


Fig. 4 - Current Derating

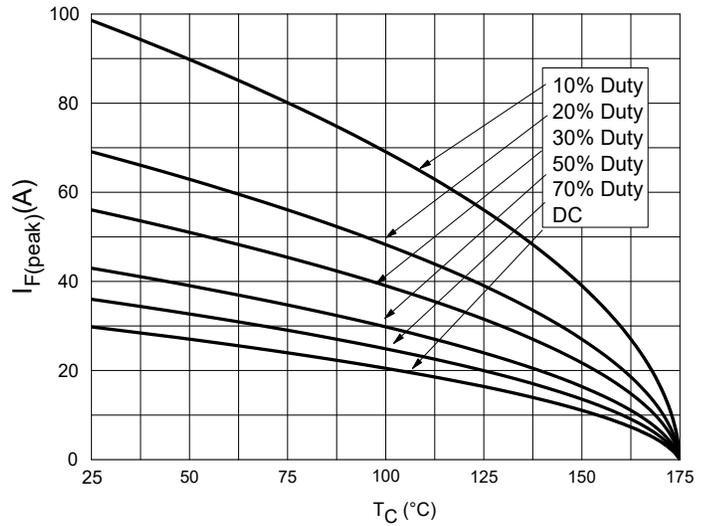


Fig. 5 - Capacitive Charge vs Reverse Voltage

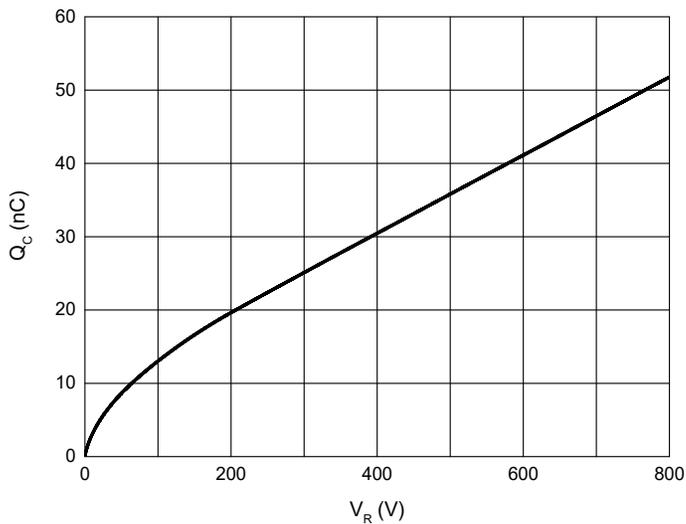
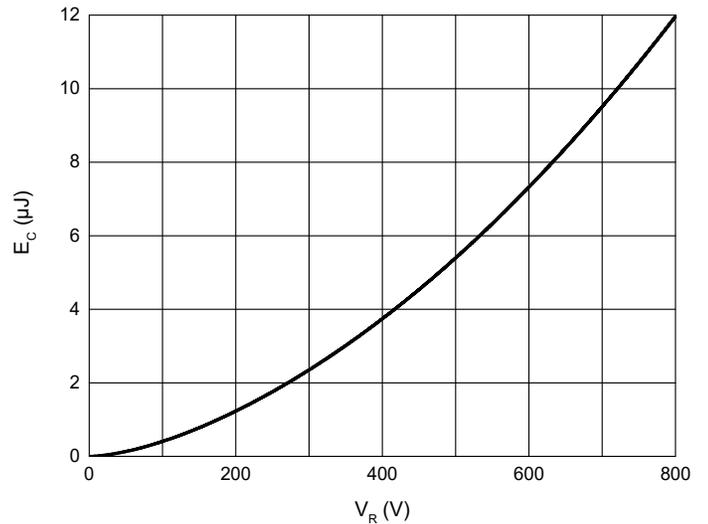
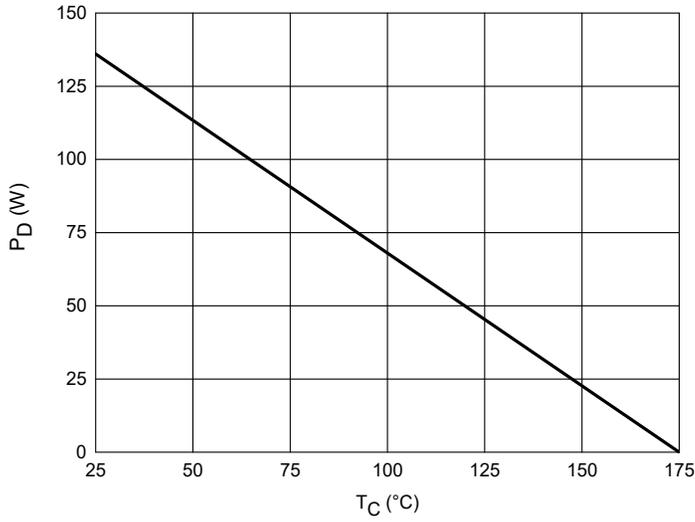


Fig. 6 - Capacitance Stored Energy



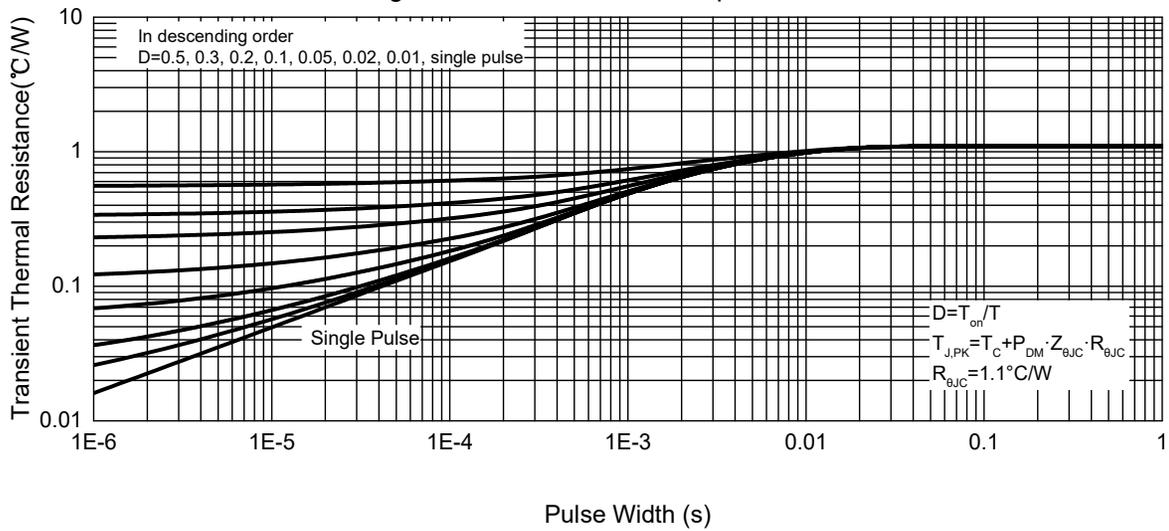
Curve Characteristics

Fig. 7 - Typical Power Derating



Curve Characteristics

Fig. 8 - Transient Thermal Impedance



Ordering Information

| Device | Packing |
|--------------|------------------------|
| SICB1060P-TP | Tape&Reel: 800pcs/Reel |

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