

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 Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)

Benefits

- Temperature-Independent Performance
- Essentially No Switching Loss
- Higher Efficiency
- Reduced EMI
- Reduction of Heat Sink Requirements

Applications

- Switching Power Supply
- Power Factor Correction
- Solar Inverter

Maximum Ratings

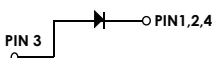
- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 3°C/W Junction to Case

| MCC Part Number | Device Marking |
|-----------------|----------------|
| SICU02120B | SICU02120B |

| | | | |
|---------------------------------|-----------|-------|--|
| Peak Repetitive Reverse Voltage | V_{RRM} | 1200V | |
| Surge Peak Reverse Voltage | V_{RSM} | 1200V | |
| DC Reverse Voltage | V_{DC} | 1200V | |
| Average Forward Current | I_F | 2A | $T_C=163^\circ\text{C}$ |
| Peak Forward Surge Current | I_{FSM} | 27A | $T_C=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Pulse |
| Repetitive Peak Forward Current | I_{FRM} | 18A | $T_C=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Pulse |
| Power Dissipation | P_D | 50W | $T_C=25^\circ\text{C}$ |

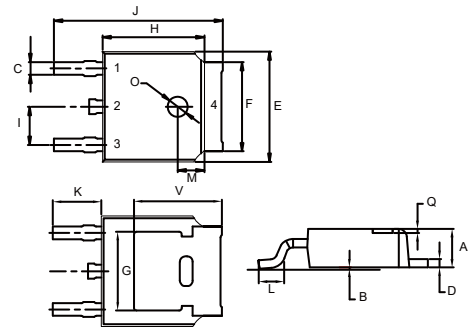
Note:1.High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

Internal Structure:



2 Amp Silicon Carbide Schottky Barrier Rectifier 1200 Volts

DPAK



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|-------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.087 | 0.094 | 2.20 | 2.40 | |
| B | 0.000 | 0.005 | 0.00 | 0.13 | |
| C | 0.026 | 0.034 | 0.66 | 0.86 | |
| D | 0.018 | 0.023 | 0.46 | 0.58 | |
| E | 0.256 | 0.264 | 6.50 | 6.70 | |
| F | 0.201 | 0.215 | 5.10 | 5.46 | |
| G | 0.190 | | 4.83 | | TYP. |
| H | 0.236 | 0.244 | 6.00 | 6.20 | |
| I | 0.086 | 0.094 | 2.18 | 2.39 | |
| J | 0.386 | 0.409 | 9.80 | 10.40 | |
| K | 0.114 | | 2.90 | | TYP. |
| L | 0.055 | 0.067 | 1.40 | 1.70 | |
| M | 0.063 | | 1.60 | | TYP. |
| O | 0.043 | 0.051 | 1.10 | 1.30 | |
| Q | 0.000 | 0.012 | 0.00 | 0.30 | |
| V | 0.211 | | 5.35 | | TYP. |

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

| Parameter | Symbol | Conditions | Typ. | Max. | Units |
|---------------------------|--------|------------------------------|------|------|---------|
| Forward Voltage | V_F | $I_F=2A, T_J=25^\circ C$ | 1.45 | 1.7 | V |
| | | $I_F=2A, T_J=175^\circ C$ | 2.1 | 2.7 | V |
| Reverse Leakage Current | I_R | $V_R=1200V, T_J=25^\circ C$ | 2 | 10 | μA |
| | | $V_R=1200V, T_J=175^\circ C$ | 10 | 50 | μA |
| Total Capacitive Charge | Q_C | $V_R=800V$ | 12.1 | | nC |
| Total capacitance | C | $V_R=0V, f=1MHz$ | 140 | | pF |
| | | $V_R=400V, f=1MHz$ | 11.7 | | pF |
| | | $V_R=800V, f=1MHz$ | 9.5 | | pF |
| Capacitance Stored Energy | E_C | $V_R=800V$ | 3.67 | | μJ |

Curve Characteristics

Fig. 1 - Typical Instantaneous Forward Characteristics

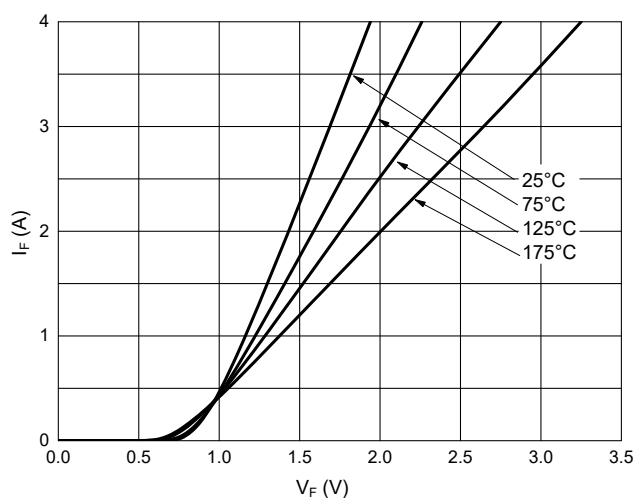
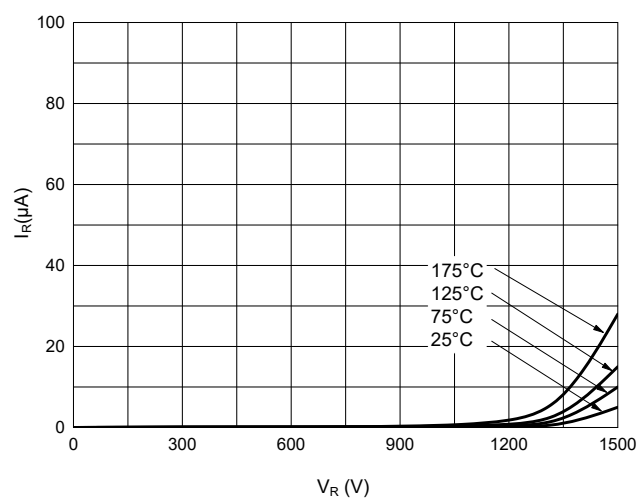


Fig. 2 - Typical Reverse Leakage Characteristics



Curve Characteristics

Fig. 3 - Capacitance vs Reverse Voltage

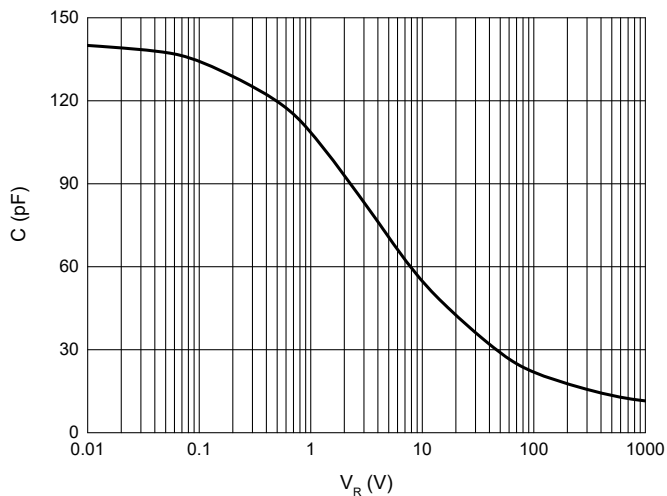


Fig. 4 - Capacitive Charge vs Reverse Voltage

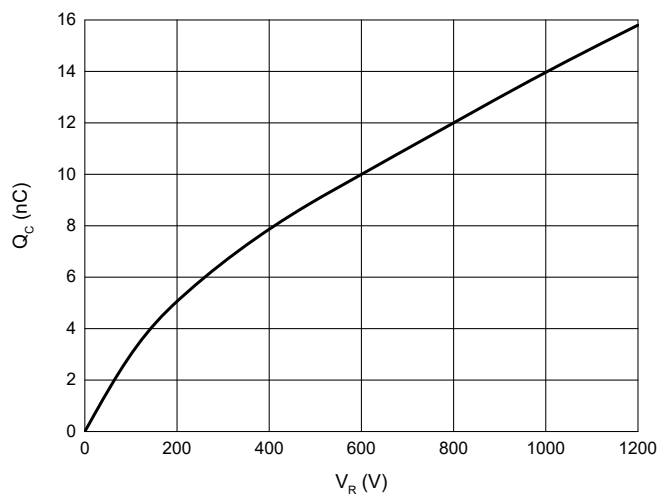


Fig. 5 - Capacitance Stored Energy

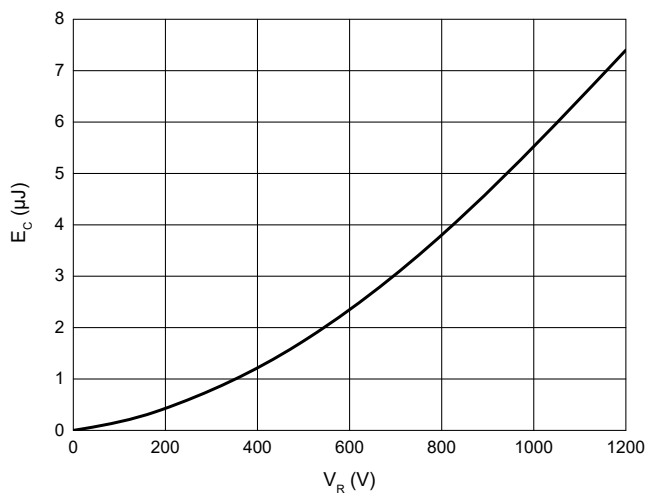


Fig. 6 - Power Derating

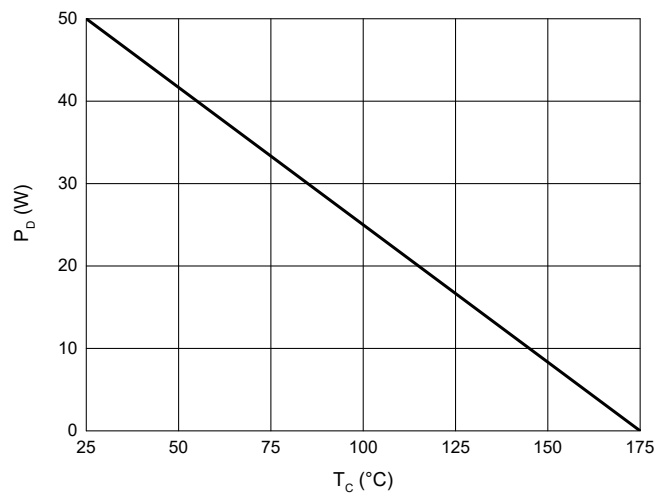


Fig. 7 - Current Derating

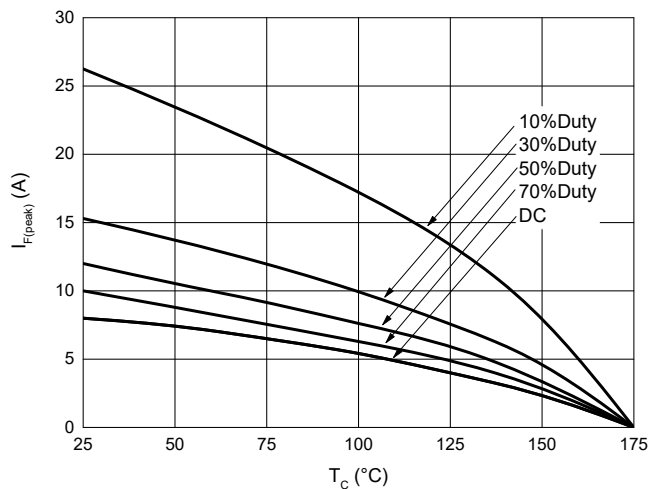
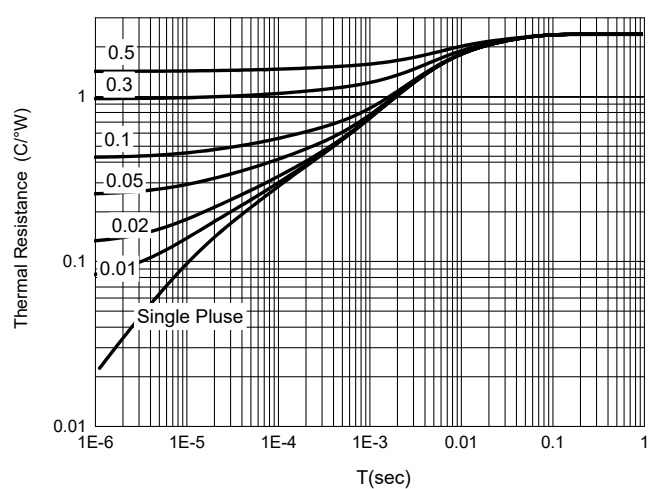


Fig. 8 - Transient Thermal Impedance



Ordering Information

| Device | Packing |
|----------------|-------------------------|
| Part Number-TP | Tape&Reel: 2.5Kpcs/Reel |

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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