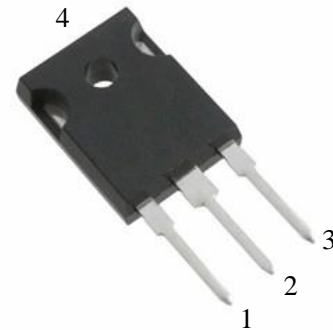


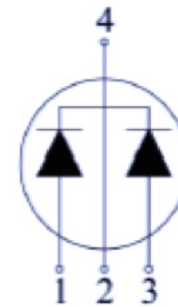
GS2S06020C Silicon Carbide Schottky Rectifier

Features

- Positive temperature coefficient, easier for parallel connection
- Temperature-insensitive switching characteristics
- Working temperature up to 175°C
- Reverse recovery current $I_{rr} = 0$
- Forward recovery Voltage $V_{FR} = 0$



TO-247



Schematic Diagram

Applications

- Photovoltaic inverter
- Switching mode power supply(SMPS)
- Power factor correction(PFC)
- Eddy-current heating
- Uninterrupted power supply(UPS)
- Motor drive

Absolute Maximum Ratings

| Parameter | Symbol | Test Condition | Value | Units |
|---|-----------|-----------------------------|------------|-------------|
| DC Reverse Voltage | V_{DC} | $T_J=25^{\circ}C$ | 600 | V |
| Average Forward Current(Per Leg/Per Device) | I_F | $T_C < 150^{\circ}C$ | 10/20 | A |
| Total Power Dissipation | P_{TOT} | $T_C=25^{\circ}C$ | 163 | W |
| Reverse Recovery Time | T_{rr} | $I_F=10A, di/dt=200A/\mu s$ | 10 | ns |
| Junction Temperature | T_J | | -55 to 175 | $^{\circ}C$ |
| Storage Temperature | T_{stg} | | -55 to 175 | $^{\circ}C$ |

Thermal Characteristics

| Parameter | Symbol | Test Condition | Value | | | Unit |
|--------------------------------------|-----------------|----------------|-------|------|-----|---------------|
| | | | Min | Typ. | Max | |
| Thermal Resistance(Junction to Case) | $R_{\theta JC}$ | | - | 0.92 | - | $^{\circ}C/W$ |

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Condition | Value | | | Unit |
|-------------------------|--------|--|-------|------|-----|---------------|
| | | | Min | Typ. | Max | |
| Forward Voltage | V_F | $I_F=10\text{A}, T_J=25^{\circ}\text{C}$ | - | 1.42 | 1.7 | V |
| | | $I_F=10\text{A}, T_J=175^{\circ}\text{C}$ | - | 2.2 | 2.9 | |
| Reverse Leakage Current | I_R | $V_R=600\text{V}, T_J=25^{\circ}\text{C}$ | - | 23 | 100 | μA |
| | | $V_R=600\text{V}, T_J=175^{\circ}\text{C}$ | - | 50 | 200 | |
| Total Storage Charge | Q_C | $V_R=600\text{V}, I_F=10\text{A}$ $di/dt=500\text{A}/\mu\text{s}, T_J=25^{\circ}$ | - | 26 | - | nC |
| Capacitance | C | $V_R=0\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHZ}$ | - | 726 | - | pF |
| | | $V_R=200\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHZ}$ | - | 72 | - | |
| | | $V_R=400\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHZ}$ | - | 68 | - | |

Typical Characteristics Curves

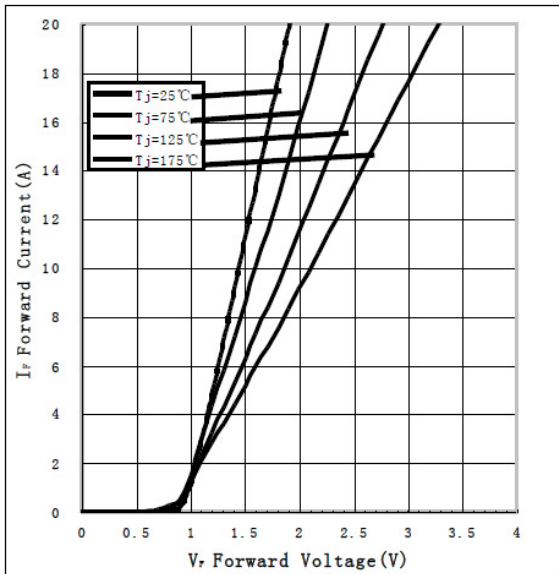


Figure 1. Typical Forward Characteristics Test Temperature: T_J

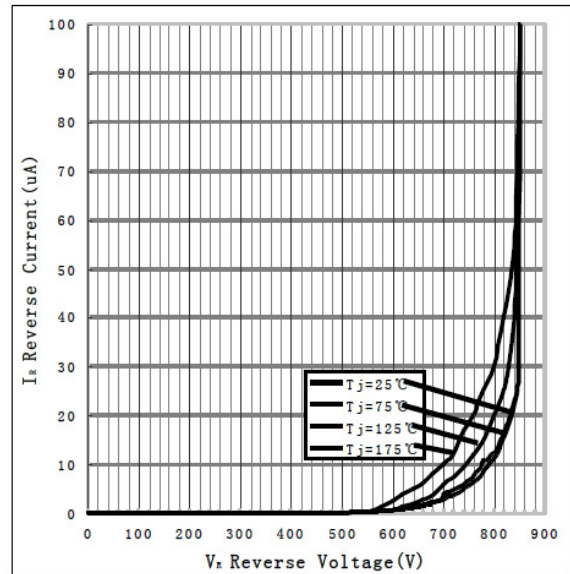


Figure 2. Typical Reverse Characteristics Test Temperature: T_J

Typical Characteristics Curves

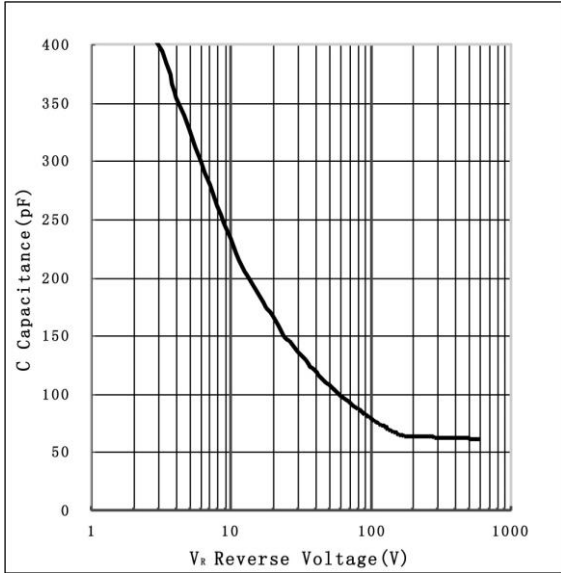


Figure 3. Typical Capacitance-Reverse Voltage Curve

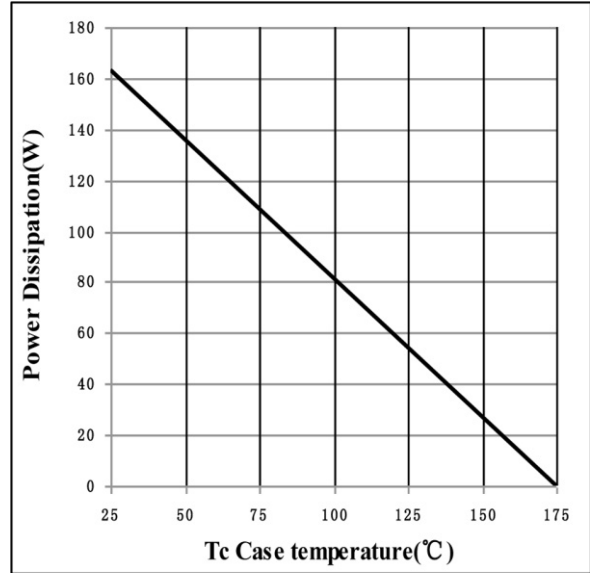


Figure 4. Power Dissipation Rate

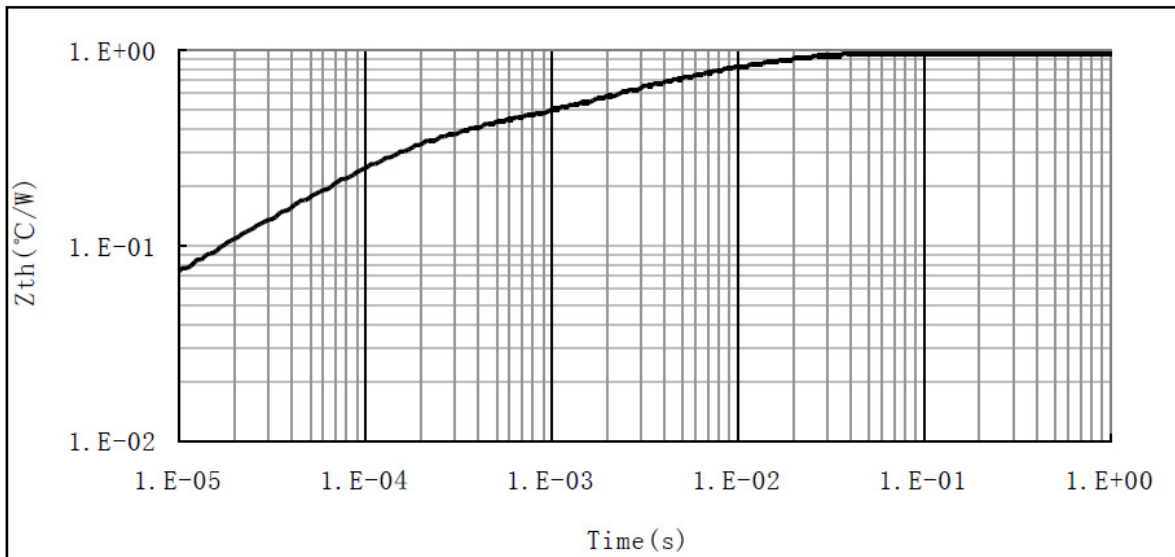


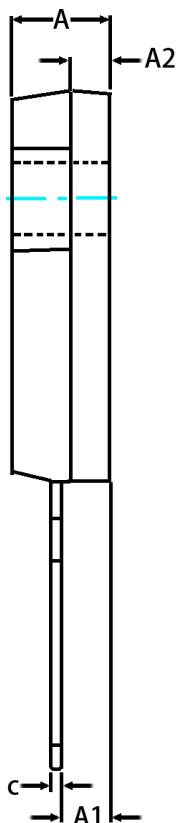
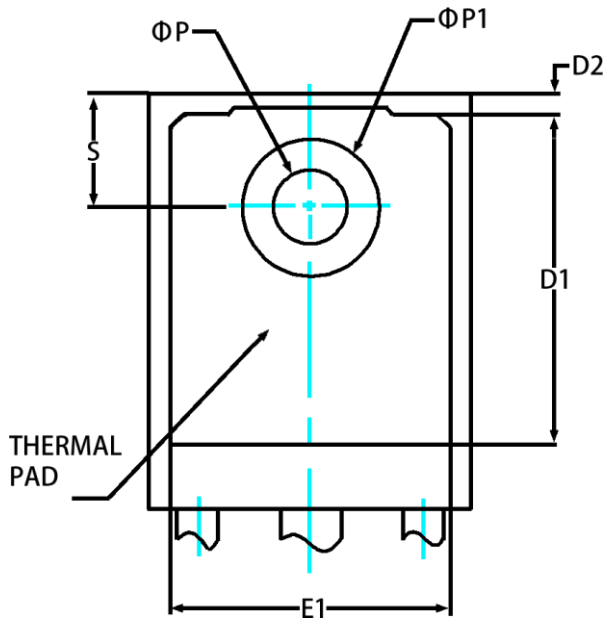
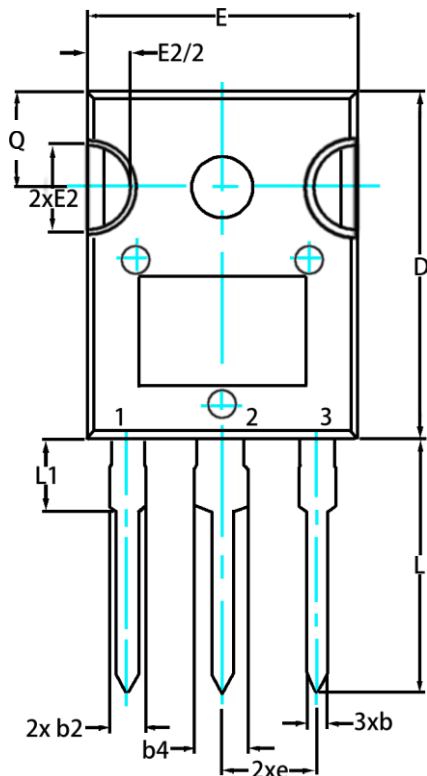
Figure 5. Transient Thermal Resistance

GS2S06020C

Silicon Carbide Schottky Rectifier

Package Outline Dimensions

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| SYM-BOLS | DIMENSIONS | | | |
|----------|------------|-------|----------|-------|
| | mm | | inch | |
| | MIN. | MAX. | MIN. | MAX. |
| A | 4.83 | 5.13 | 0.190 | 0.20 |
| A1 | 2.21 | 2.59 | 0.087 | 0.102 |
| A2 | 1.50 | 2.49 | 0.059 | 0.098 |
| b | 0.99 | 1.40 | 0.039 | 0.055 |
| b2 | 1.65 | 2.39 | 0.065 | 0.094 |
| b4 | 2.59 | 3.43 | 0.102 | 0.135 |
| c | 0.38 | 0.89 | 0.015 | 0.035 |
| D | 19.71 | 20.70 | 0.776 | 0.815 |
| D1 | 13.08 | - | 0.515 | - |
| D2 | 0.51 | 1.35 | 0.020 | 0.053 |
| E | 15.29 | 15.87 | 0.602 | 0.625 |
| E1 | 13.46 | - | 0.530 | - |
| E2 | 4.52 | 5.49 | 0.178 | 0.216 |
| e | 5.46BSC | | 0.215BSC | |
| L | 14.2 | 16.1 | 0.559 | 0.634 |
| L1 | 3.71 | 4.29 | 0.146 | 0.169 |
| ΦP | 3.56 | 3.66 | 0.140 | 0.144 |
| ΦP1 | - | 7.39 | - | 0.291 |
| Q | 5.31 | 5.69 | 0.209 | 0.224 |
| S | 5.51BSC | | 0.217BSC | |