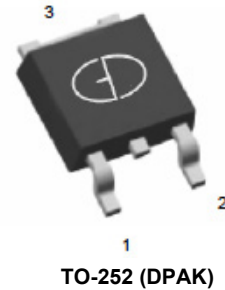


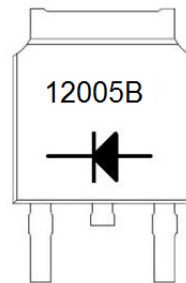
Features

- 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 $V_{FR} = 0$

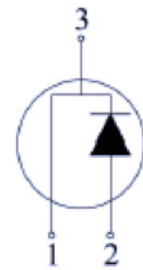


Applications

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



Marking



Schematic Diagram

Absolute Maximum Ratings

| Parameter | Symbol | Test Condition | Value | Units |
|-------------------------------------|-----------|------------------------------------------------------------------|------------|--------------------|
| Peak Repetitive Reverse Voltage | V_{RRM} | $T_J=25^{\circ}\text{C}$ | 1200 | V |
| Peak Reverse Surge Voltage | V_{RSM} | $T_J=25^{\circ}\text{C}$ | 1200 | |
| DC Reverse Voltage | V_{DC} | $T_J=25^{\circ}\text{C}$ | 1200 | |
| Average Forward Current | I_F | $T_C=150^{\circ}\text{C}$ | 5 | A |
| Repetitive Peak Forward Current | I_{FRM} | $T_C=25^{\circ}\text{C}, t_p=10\text{ms}, \text{Half Sine Wave}$ | 35 | A |
| Non Repetitive Peak Forward Current | I_{FSM} | $T_C=25^{\circ}\text{C}, t_p=10\mu\text{s}, \text{Pulse}$ | 100 | A |
| Total Power Dissipation | P_{TOT} | $T_C=25^{\circ}\text{C}$ | 163 | W |
| | | $T_C=110^{\circ}\text{C}$ | 71 | W |
| Reverse Recovery Time | T_{rr} | $I_F=5\text{A}, di/dt=200\text{A}/\mu\text{s}$ | 10 | ns |
| Case Temperature | T_C | | 135 | $^{\circ}\text{C}$ |
| Junction Temperature | T_J | | -55 to 175 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to 175 | $^{\circ}\text{C}$ |

Thermal Characteristics

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

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

| Parameter | Symbol | Test Condition | Value | | | Unit |
|-------------------------|--------|------------------------------------------------------------|-------|------|-----|---------------|
| | | | Min | Typ. | Max | $^{\circ}C/W$ |
| Forward Voltage | V_F | $I_F=5A, T_J=25^{\circ}C$ | - | 1.6 | 1.8 | V |
| | | $I_F=5A, T_J=175^{\circ}C$ | - | 2.1 | 2.8 | |
| Reverse Leakage Current | I_R | $V_R=1200V, T_J=25^{\circ}C$ | - | 5.5 | 100 | μA |
| | | $V_R=1200V, T_J=175^{\circ}C$ | - | 50 | 200 | |
| Total Storage Charge | Q_C | $V_R=1200V, I_F=5A$ $di/dt=500A/\mu s, T_J=25^{\circ}C$ | - | 27 | - | nC |
| Capacitance | C | $V_R=0V, T_J=25^{\circ}C, f=1MHz$ | - | 350 | - | pF |
| | | $V_R=400V, T_J=25^{\circ}C, f=1MHz$ | - | 39 | - | |
| | | $V_R=800V, T_J=25^{\circ}C, f=1MHz$ | - | 30 | - | |

Typical Characteristics Curves

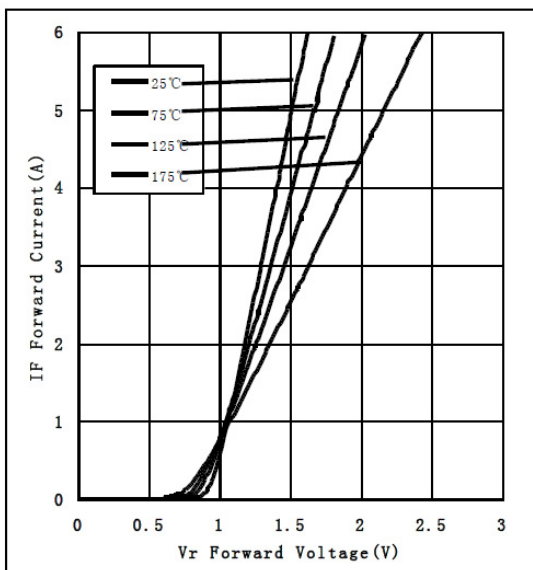


Fig.1 Typical Forward Characteristics
 Test Temperature: T_J

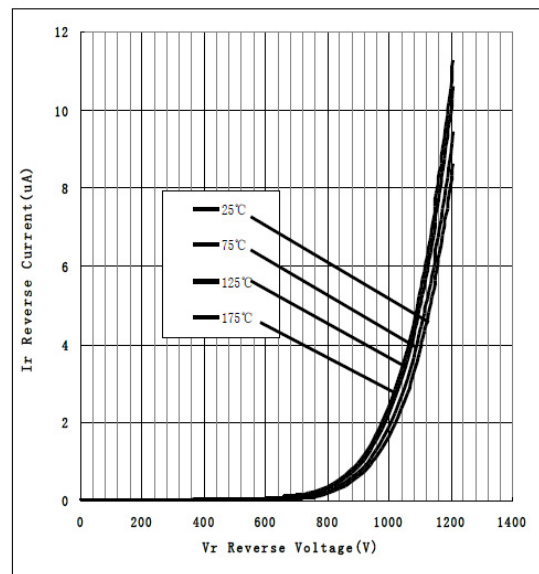


Fig.2 Typical Reverse Characteristics
 Test Temperature: T_J

Typical Characteristics Curves

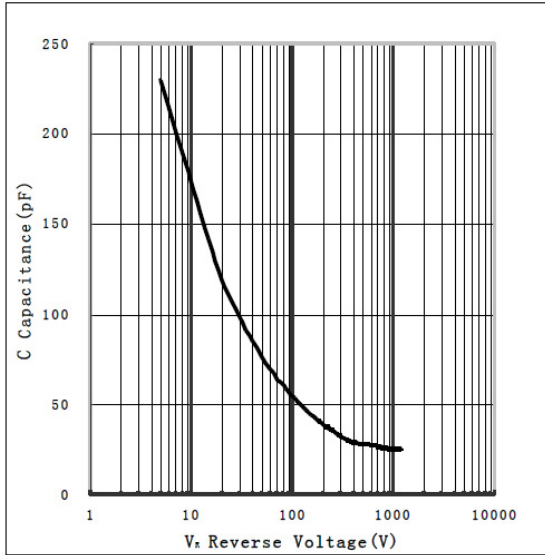


Fig.3 Typical Capacitance-Reverse Voltage Curve
 Test Temperature: T_J

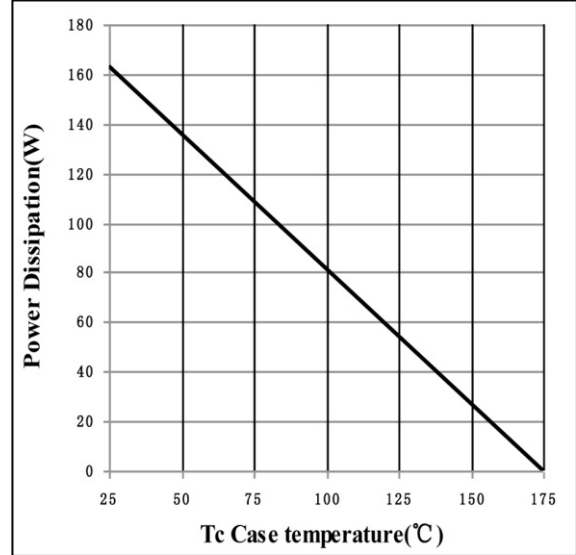


Fig.4 Power Dissipation Rate

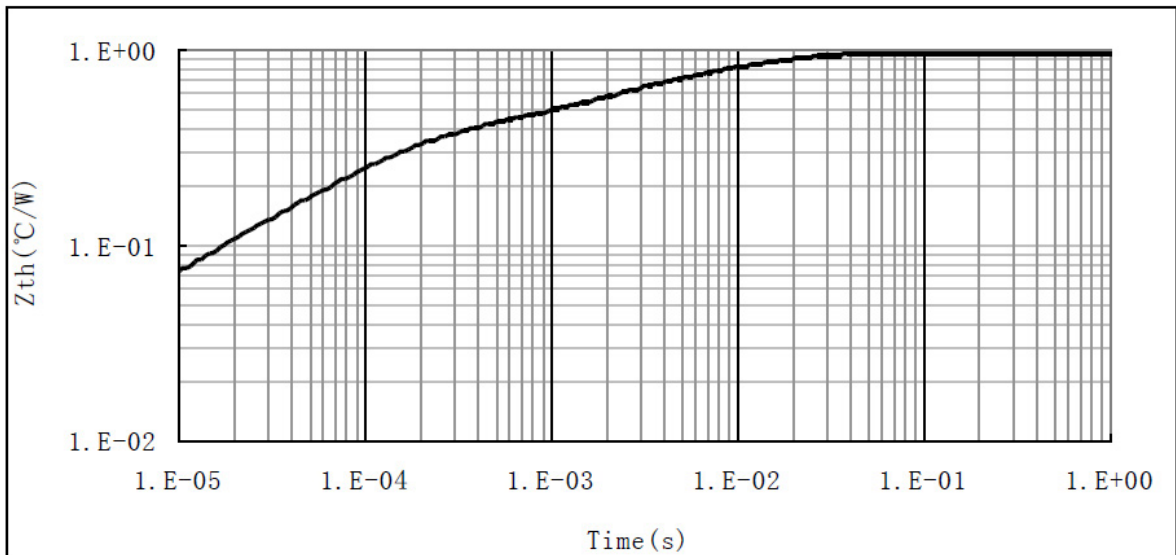
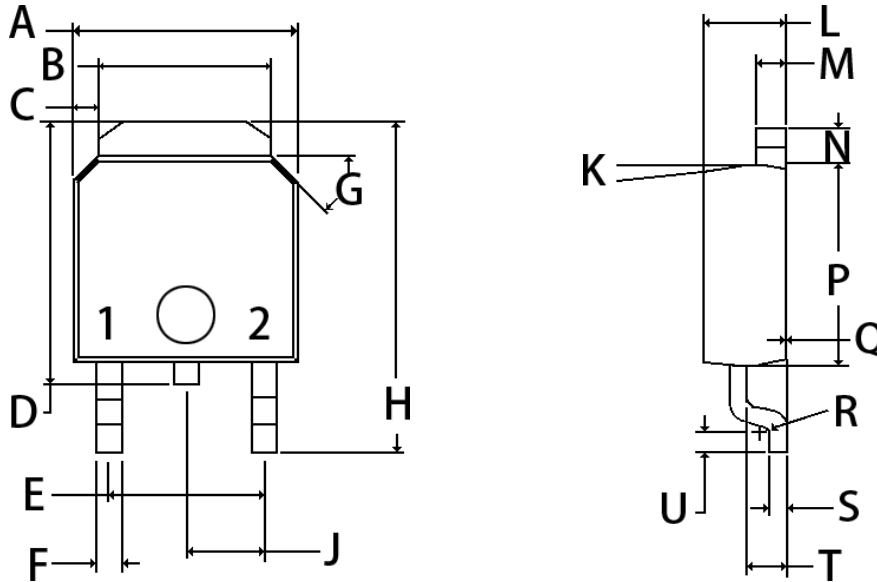


Fig.5 Transient Thermal Resistance

GS2S12005B
Silicon Carbide Schottky Rectifier

Package Outline Dimensions

TO-252 (DPAK)



| DIM | Millimeters | | Inches | |
|-----|-------------|--------|----------|------|
| | Min. | Max. | Min. | Max. |
| A | 6.350 | 7.341 | .250 | .289 |
| B | 5.004 | 5.461 | .197 | .215 |
| C | .686 | 1.270 | .027 | .050 |
| D | 6.858 | 8.179 | .270 | .322 |
| E | 4.521 | 4.623 | .178 | .182 |
| F | .635 | 1.143 | .025 | .045 |
| G | 44° | 46° | 44° | 46° |
| H | 9.4 | 10.414 | .370 | .410 |
| J | 2.286 TYP | | .090 TYP | |
| K | 6° | 8° | 6° | 8° |
| L | 2.184 | 2.41 | .086 | .095 |
| M | .457 | .864 | .018 | .034 |
| N | .889 | 1.270 | .035 | .050 |
| P | 5.567 | 6.248 | .219 | .246 |
| Q | 0.00 | .127 | 0.00 | .005 |
| R | R0.010 | | TYP | |
| S | .432 | .584 | .017 | .023 |
| T | .965 | 1.143 | .038 | .045 |
| U | .533 | .737 | .021 | .029 |