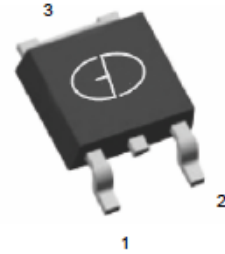


GS2S06010B Silicon Carbide Schottky Rectifier

Features

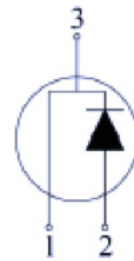
- Positive temperature coefficient, easier for parallel connection
- Temperature-insensitive switching characteristics
- Working temperature up to 175°C
- Reverse recovery current $I_{rr} = 0$
- Forward recovery Voltage $V_{FR} = 0$



TO-252 (DPAK)

Applications

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



Schematic Diagram

Absolute Maximum Ratings

Parameter	Symbol	Test Condition	Value	Units
Peak Repetitive Reverse Voltage	V_{RRM}	$T_J=25^{\circ}\text{C}$	600	V
Peak Reverse Surge Voltage	V_{RSM}	$T_J=25^{\circ}\text{C}$	600	
DC Reverse Voltage	V_{DC}	$T_J=25^{\circ}\text{C}$	600	
Average Forward Current	I_F	$T_C < 150^{\circ}\text{C}$	10	A
		$T_C < 140^{\circ}\text{C}$	12	
Repetitive Peak Forward Current	I_{FRM}	$T_C=25^{\circ}\text{C}$, $t_p=10\text{ms}$, Half Sine Wave, $D=0.3$	70	A
		$T_C=110^{\circ}\text{C}$, $t_p=10\text{ms}$, Half Sine Wave, $D=0.3$	50	A
Non Repetitive Peak Forward Current	I_{FSM}	$T_C=25^{\circ}\text{C}$, $t_p=10\text{ms}$, Half Sine Wave, $D=0.3$	95	A
		$T_C=110^{\circ}\text{C}$, $t_p=10\text{ms}$, Half Sine Wave, $D=0.3$	75	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}	$I_F=10\text{A}$, $di/dt=200\text{A}/\mu\text{s}$	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	Test Condition	Value			Unit
			Min	Typ.	Max	
Thermal Resistance(Junction to Case)	$R_{\theta JC}$		-	0.92	-	$^{\circ}C/W$

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

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

Typical Characteristic Curves

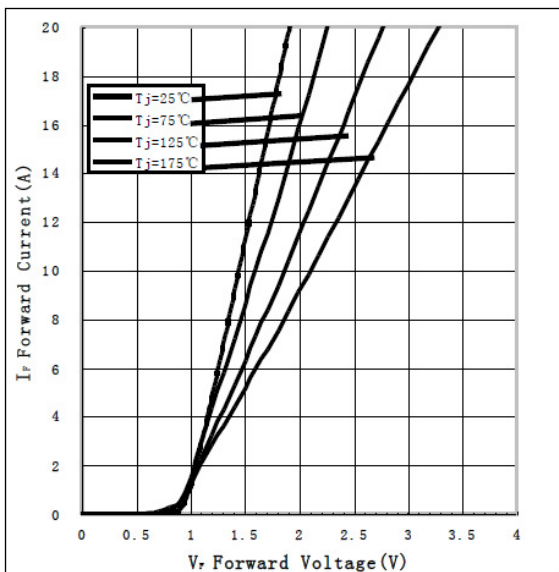


Figure 1. Typical Forward Characteristics Test Temperature: T_J

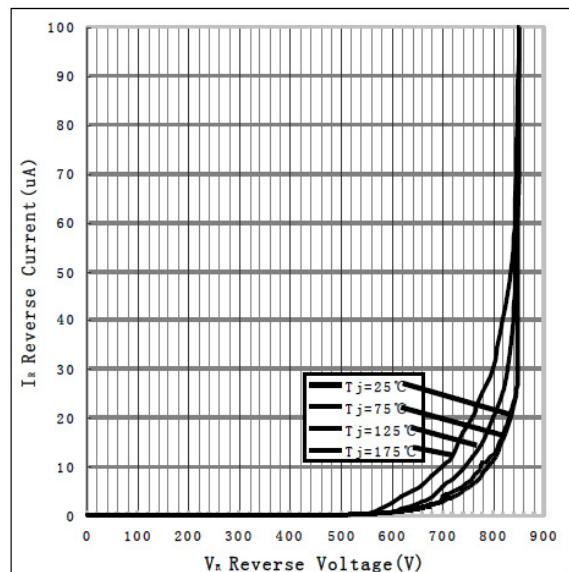


Figure 2. Typical Reverse Characteristics Test Temperature: T_J

Typical Characteristic Curves

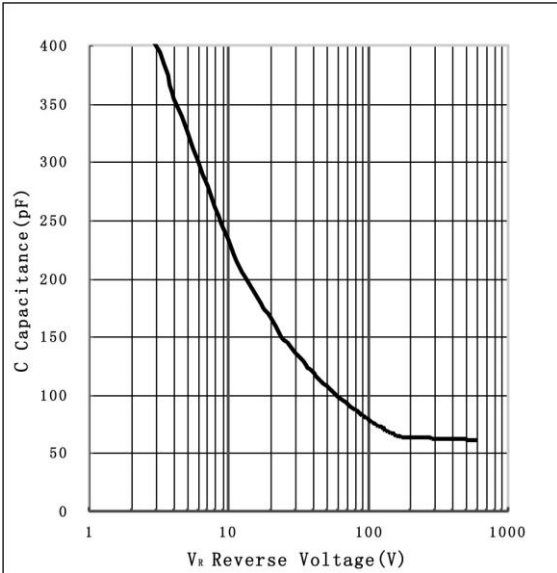


Figure 3. Typical Capacitance-Reverse Voltage Curve

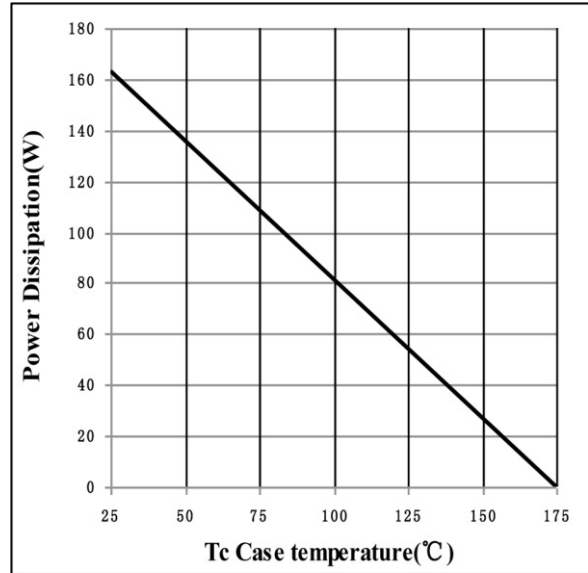


Figure 4. Power Dissipation Rate

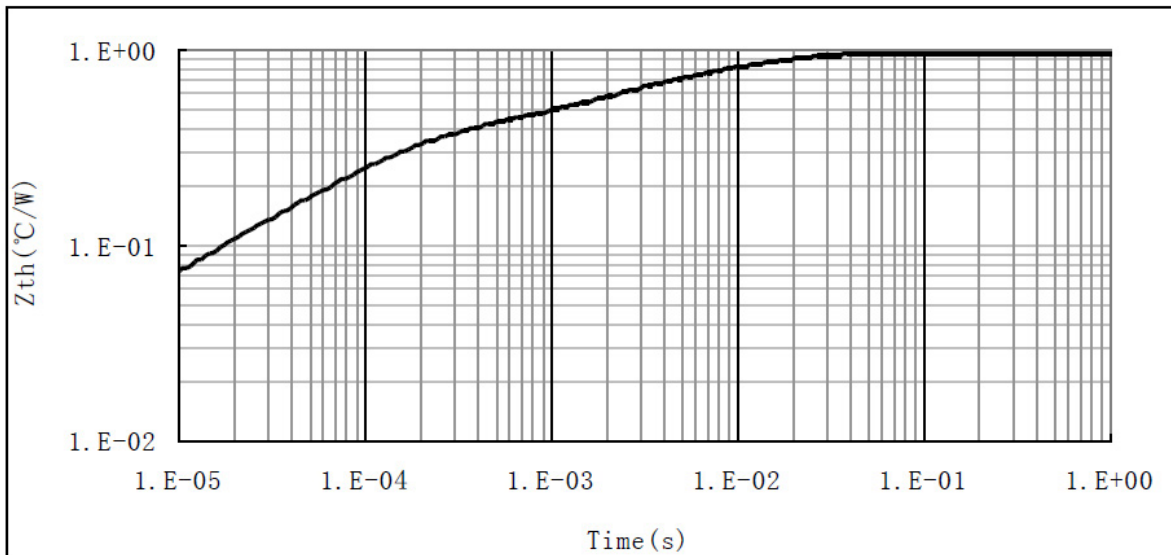
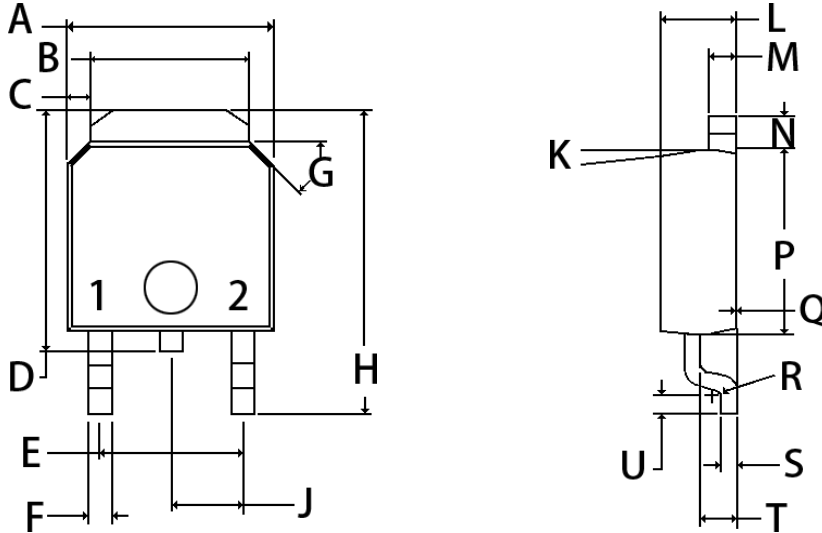


Figure 5. Transient Thermal Resistance

GS2S06010B

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