泰科天润
Global Power Technology Co., Ltd.

Datasheet
V2022.A.0

G5S12005H

1200V/5A Silicon Carbide Power Schottky Barrier Diode

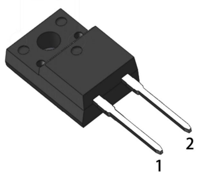
Features

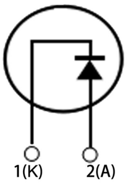
- Zero reverse recovery current
- Zero forward recovery voltage
- Temperature independent switching behavior
- High temperature operation
- High frequency operation

Key Characteristics		
V_{RRM}	**1200**	**V**
I_F, $T_c \leqslant 153℃$	**5**	**A**
Q_C	**28**	**nC**

Benefits

- Unipolar rectifier
- Substantially reduced switching losses
- No thermal run-away with parallel devices
- Reduced heat sink requirements





Applications

- SMPS, e.g., CCM PFC;
- Motor drives, Solar application, UPS,
  Wind turbine, Rail traction, EV/HEV

REACH SVHC

Halogen-Free

RoHS

Part No.	Package Type	Marking
G5S12005H	TO-220F	G5S12005H

Maximum Ratings

Parameter	Symbol	Test Condition	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}		1200	V
Surge Peak Reverse Voltage	V_{RSM}		1200	V
DC Blocking Voltage	V_{DC}		1200	V
Continuous Forward Current	I_F	T_C=25℃ T_C=125℃ T_C=153℃	17 9.2 5	A
Repetitive Peak Forward Surge Current	I_{FRM}	T_C=25℃, tp=10ms， Half Sine Wave， D=0.3	25	A
Non-repetitive Peak Forward Surge Current	I_{FSM}	T_C=25℃, tp=10ms， Half Sine Wave	75	A
Power Dissipation	P_{TOT}	T_C=25℃	74.6	W
		T_C=110℃	32.3	W
Operating Junction	T_j		-55℃ to 175℃	℃
Storage Temperature	T_{stg}		-55℃ to 175℃	℃
Mounting Torque		M3 Screw 6-32 Screw	1 8.8	Nm lbf-in

Thermal Characteristics

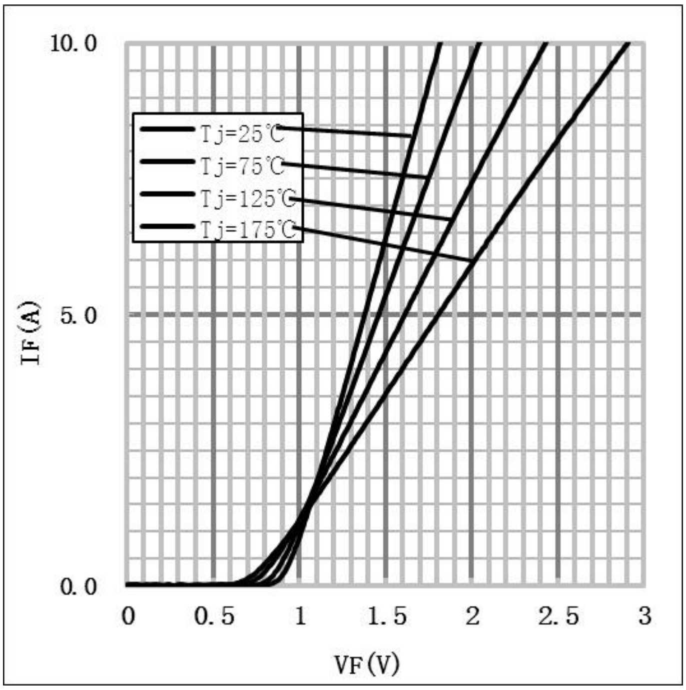
Parameter	Symbol	Test Condition	Value	Unit
			Typ.	
Thermal resistance from junction to case	$R_{th\ JC}$		2.01	℃/W

Electrical Characteristics

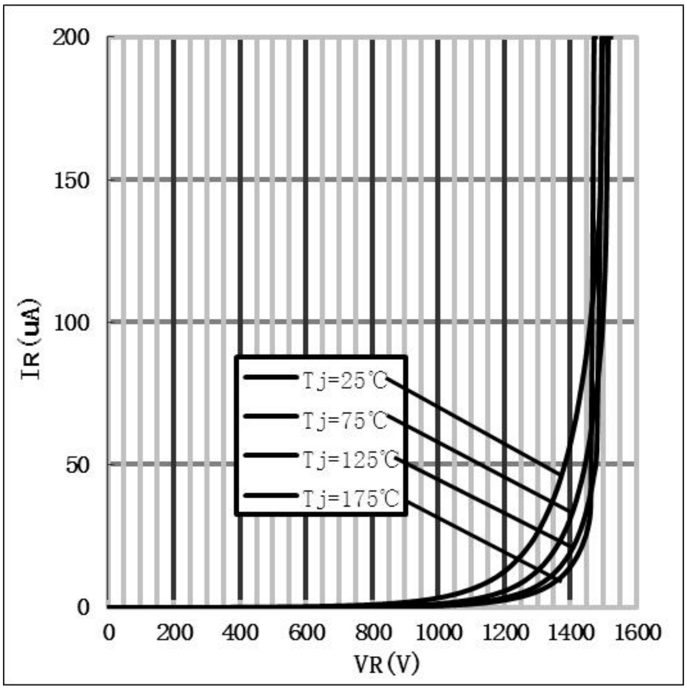
Parameter	Symbol	Test Conditions	Numerical		Unit
			Typ.	Max.	
Forward Voltage	V_F	I_F=5A, T_j=25℃	1.38	1.7	V
		I_F=5A, T_j=175℃	1.85	2.5	
Reverse Current	I_R	V_R=1200V, T_j=25℃	2.65	50	μA
		V_R=1200V, T_j=175℃	11	100	
Total Capacitive Charge	Q_C	V_R=800V, T_j=150℃ $Qc = \int_0^{VR} C(V)dV$	28	-	nC
Total Capacitance	C	V_R=0V, T_j=25℃, f=1MHZ	412	-	pF
		V_R=400V, T_j=25℃, f=1MHZ	26	-	
		V_R=800V, T_j=25℃, f=1MHZ	22	-	

Performance Graphs

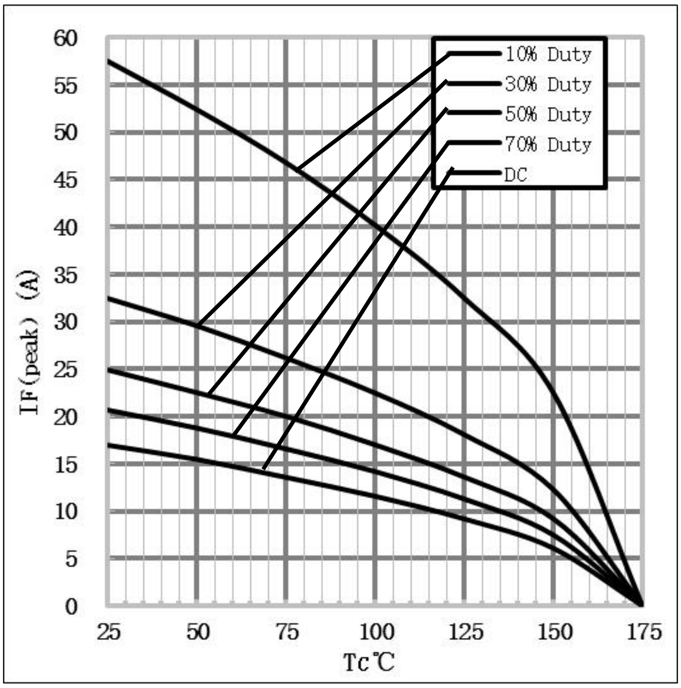
1) Forward IV characteristics as a function of T_j :



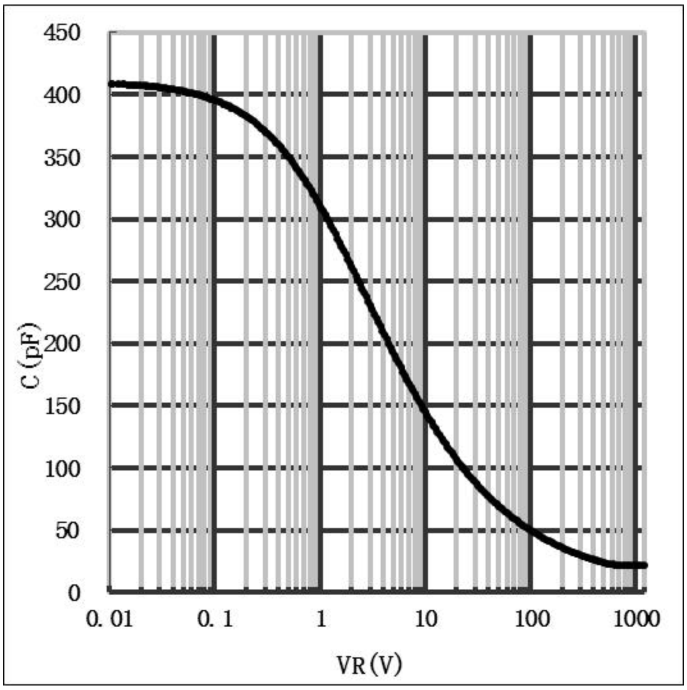
2) Reverse IV characteristics as a function of T_j :



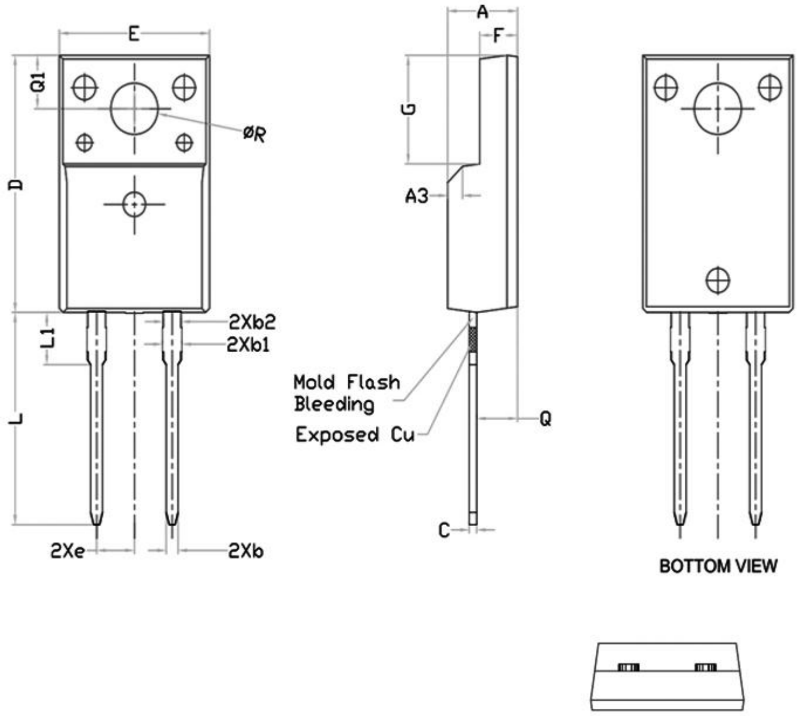
3) Current Derating:



4) Capacitance vs. reverse voltage:



Package TO-220F



Note:

1. All Dimension Are In mm.
2. Package Body Sizes Exclude Mold Flash And Burrs Mold Flash Should Be Less Than 6 Mil.

单位：mm

SYMBOL	DIMENSIONS		
	Min.	Nom.	Max.
A	4.60	4.70	4.80
b	0.70	0.80	0.91
b1	1.20	1.30	1.47
b2	1.10	1.20	1.30
C	0.45	0.50	0.63
D	15.80	15.87	15.97
e		2.54	
E	10.00	10.10	10.30
F	2.44	2.54	2.64
G	6.50	6.70	6.90
L	12.90	13.10	13.30
L1	3.13	3.23	3.33
Q	2.65	2.75	2.85
Q1	3.20	3.30	3.40
ΦR	3.08	3.18	3.28

WAFER DIAMETER	WAFER LOT
150 mm	(Up to 13 bit)：LT******、LE******

Note: The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2011/65/EC(RoHS2). RoHS Certification and other certifications can be obtained from GPT sales representatives or GPT website （then click "English" on the right top）: http://globalpowertech.cn/

More product datasheets and company information can be found in:
https://www.globalpowertech.cn/