

G5S12008H

## 1200V/8A Silicon Carbide Power Schottky Barrier Diode

### **Features**

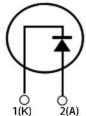
- Zero reverse recovery current
- Zero forward recovery voltage
- Temperature independent switching behavior
- High temperature operation
- High frequency operation

Key Characteristics			
V <sub>RRM</sub>	1200	V	
I <sub>F,</sub> T <sub>c</sub> ≤129°C	8	Α	
Qc	38	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







Part No.	Package Type	Marking
G5S12008H	TO-220F	G5S12008H

## **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		$T_C=25$ °C	16	
	I <sub>F</sub>	T <sub>C</sub> =125°C	8.4	Α
Current		T <sub>C</sub> =129°C	8	
Repetitive Peak Forward		$T_C=25^{\circ}C$ , tp=10ms , Half Sine	40	۸
Surge Current	I <sub>FRM</sub>	Wave, D=0.3	40	Α
Non-repetitive Peak	1 .	$T_C=25^{\circ}\mathrm{C}$ , tp=10ms, Half Sine	80	А
Forward Surge Current	I <sub>FSM</sub>	Wave	80	
Power Dissipation	D .	$T_C=25$ °C	56	W
Power Dissipation	P <sub>TOT</sub>	T <sub>C</sub> =110°C	24	W
Operating Junction	T <sub>j</sub>		-55°C to 175°C	°C
Storage Temperature	$T_{stg}$		-55°C to 175°C	°C
Manustina Tayana		M3 Screw	1	Nm
Mounting Torque		6-32 Screw	8.8	lbf-in

## **Thermal Characteristics**

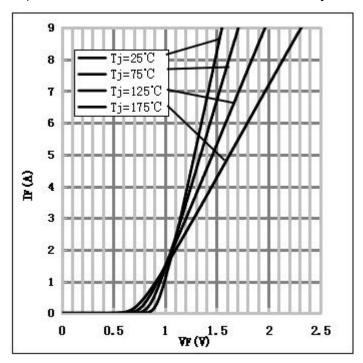
Parameter	Symbol	Test Condition	Value Typ.	Unit
Thermal resistance from junction to case	R <sub>th JC</sub>		2.67	°C/W

### **Electrical Characteristics**

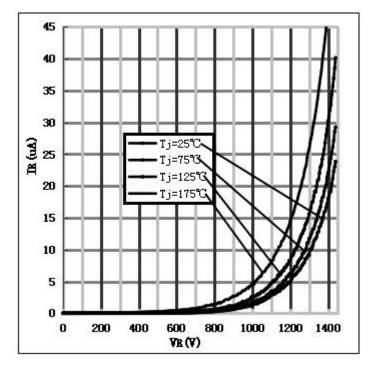
Donomotor	Sumbol Test Conditions		Numerical		l lait	
Parameter	Symbol	Test Conditions	Тур.	Max.	Unit	
Commond Voltage	V <sub>F</sub>	I <sub>F</sub> =8A, T <sub>j</sub> =25°C	1.47	1.7	.,	
Forward Voltage		I <sub>F</sub> =8A, T <sub>j</sub> =175°C	2.15	2.5	V	
Daviera Current	I <sub>R</sub>	V <sub>R</sub> =1200V, T <sub>j</sub> =25°C	3	50		
Reverse Current		V <sub>R</sub> =1200V, T <sub>j</sub> =175°C	15	100	μΑ	
		V <sub>R</sub> =800V, T <sub>j</sub> =25°C				
Total Capacitive Charge	$Q_{C}$	$Qc = \int_0^{VR} C(V)dV$	38	-	nC	
	_	$V_R$ =0V, $T_j$ =25°C, f=1MHZ	550	560		
Total Capacitance	C	V <sub>R</sub> =400V, T <sub>j</sub> =25°C, f=1MHZ	35	40	pF	
		$V_R$ =800V, $T_j$ =25°C, $f$ =1MHZ	30	35		

### **Performance Graphs**

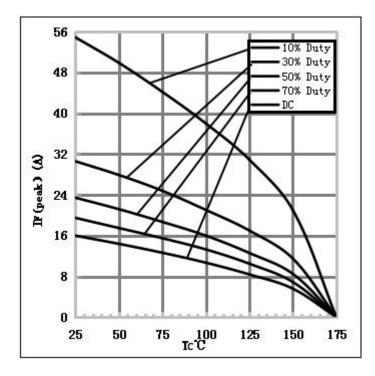
1) Forward IV characteristics as a function of Tj:



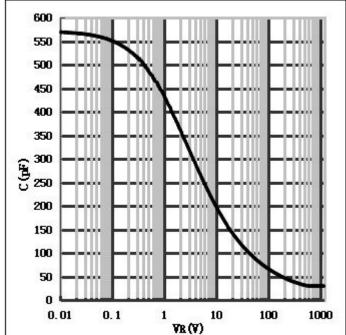
2) Reverse IV characteristics as a function of Tj:



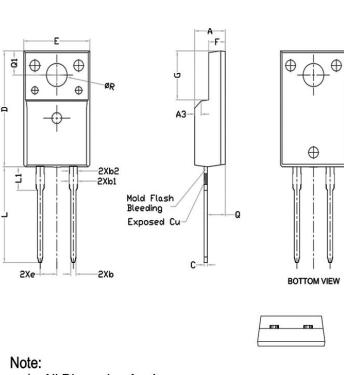
#### 3) Current Derating:



## 4) Capacitance vs. reverse voltage:



#### Package TO-220F



单位 : mm

	DIMENSIONS			
SYMBOL	Min.	Nom.	Max.	
Α	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	
С	0.45	0.50	0.63	
D	15.80	15.87	15.97	
е	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	

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

**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: http://globalpowertech.cn/English/index.asp

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