泰科天润
Global Power Technology Co., Ltd.

Datasheet
V2020.A.0

G4S06508HT

650V/ 8A Silicon Carbide Power Schottky Barrier Diode

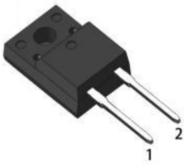
Features

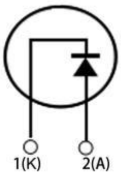
- Zero reverse recovery current
- Zero forward recovery voltage
- Temperature independent switching behavior
- High temperature operation
- High frequency operation

Key Characteristics		
V_{RRM}	**650**	**V**
I_{F}, T_c≤140℃	**8**	**A**
Q_C	**21**	**nC**

Benefits

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





REACH SVHC
Halogen-Free
RoHS

Applications

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

Part No.	Package Type	Marking
G4S06508HT	TO-220F	G4S06508HT

Maximum Ratings

Parameter	Symbol	Test Condition	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}		650	V
Surge Peak Reverse Voltage	V_{RSM}		650	V
DC Blocking Voltage	V_{DC}		650	V
Continuous Forward Current	I_F	T_C=25℃ T_C=125℃ T_C=140℃	18.5 9.5 8	A
Repetitive Peak Forward Surge Current	I_{FRM}	T_C=25℃, tp=10ms， Half Sine Wave， D=0.3	30	A
Non-repetitive Peak Forward Surge Current	I_{FSM}	T_C=25℃, tp=10ms， Half Sine Wave	90	A
Power Dissipation	P_{TOT}	T_C=25℃	60	W
		T_C=110℃	26	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

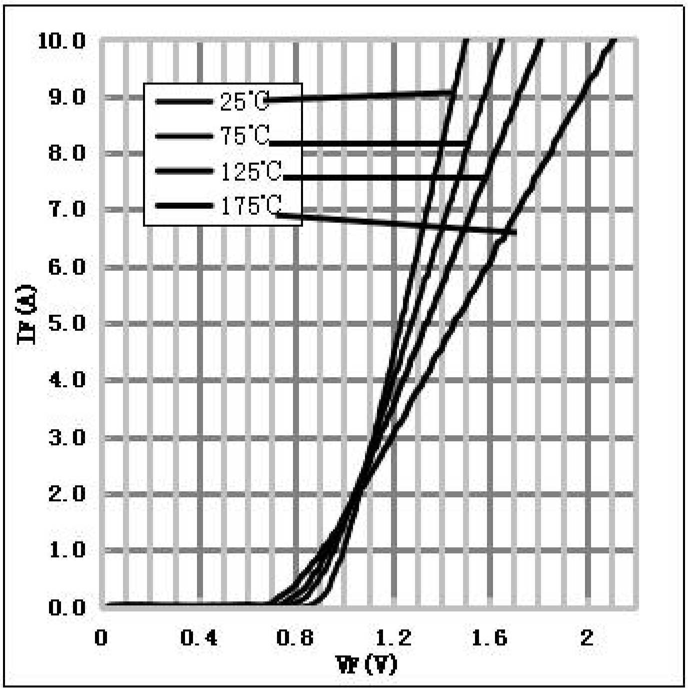
Parameter	Symbol	Test Condition	Value	Unit
			Typ.	
Thermal resistance from junction to case	$R_{th\ JC}$		2.52	℃/W

Electrical Characteristics

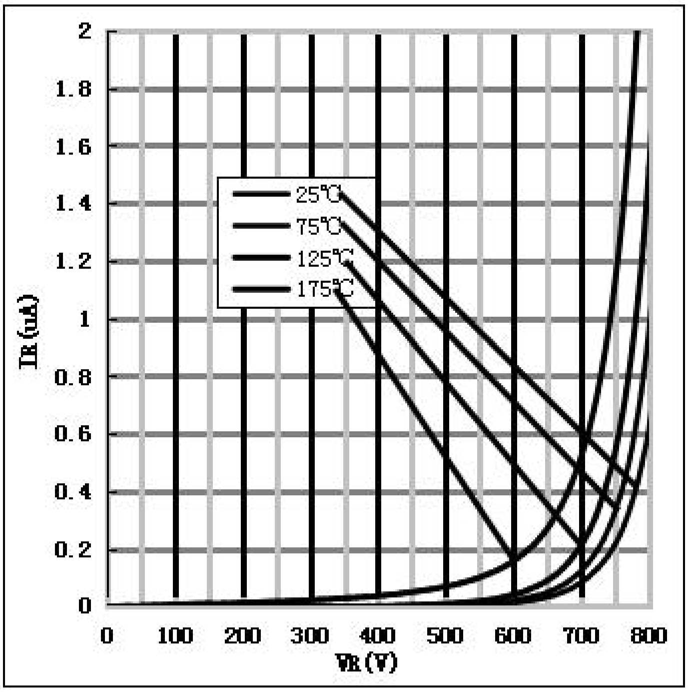
Parameter	Symbol	Test Conditions	Numerical		Unit
			Typ.	Max.	
Forward Voltage	V_F	I_F=8A, T_j=25℃	1.4	1.7	V
		I_F=8A, T_j=175℃	1.85	2.5	
Reverse Current	I_R	V_R=650V, T_j=25℃	0.2	50	μA
		V_R=650V, T_j=175℃	2.5	100	
Total Capacitive Charge	Q_C	V_R=400V, T_j=150℃ $Qc = \int_0^{VR} C(V)dV$	21	-	nC
Total Capacitance	C	V_R=0V, T_j=25℃, f=1MHZ	395	400	pF
		V_R=200V, T_j=25℃, f=1MHZ	38	42	
		V_R=400V, T_j=25℃, f=1MHZ	36	40	

Performance Graphs

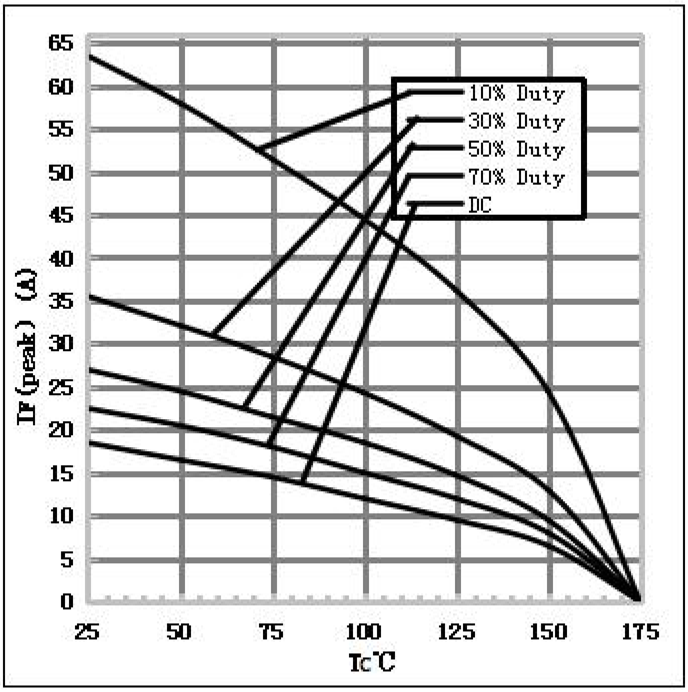
1) Forward IV characteristics as a function of Tj :



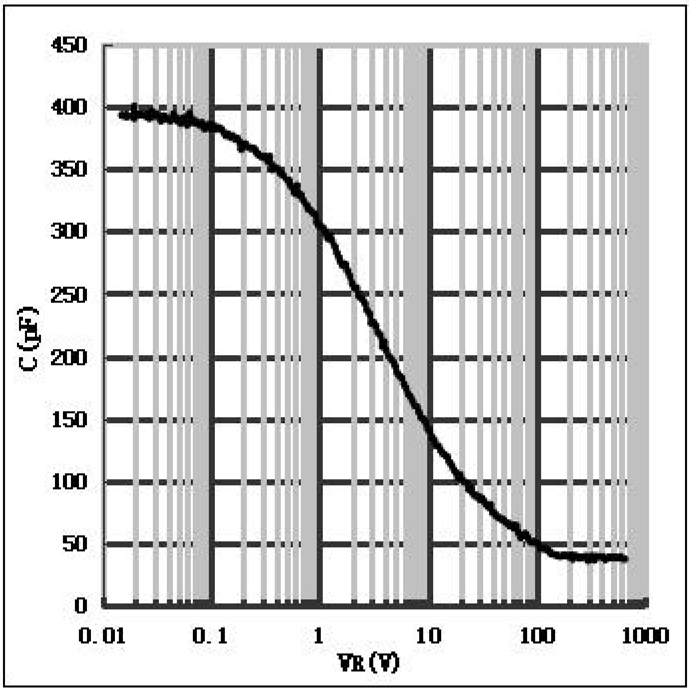
2) Reverse IV characteristics as a function of Tj :



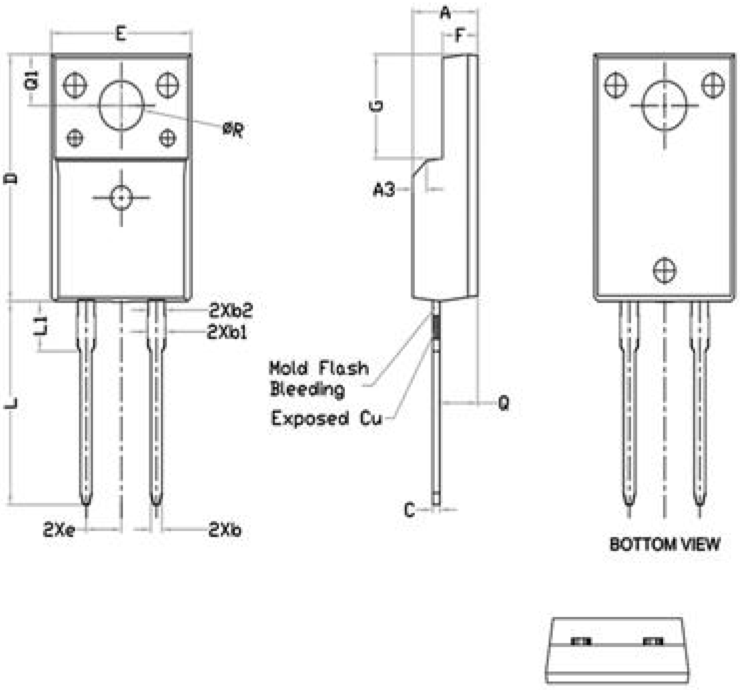
3) Current Derating:



4) Capacitance vs. reverse voltage:



Package TO-220F



单位：mm

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

Note:

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

More product datasheets and company information can be found in:
http://globalpowertech.cn/English/index.asp