

G5S12002C

1200V/2A 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≤160° C	2	Α	
Qc	12	nC	

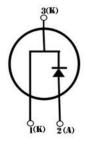
Benefits

- 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
G5S12002C	TO-252	G5S12002C

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	l _F	T _C =25°C T _C =125°C T _C =160°C	8.8 4.8 2	А
Repetitive Peak Forward Surge Current	I _{FRM}	T_c =25°C, tp=10ms, Half Sine Wave, D=0.3	12	Α
Non-repetitive Peak Forward Surge Current	I _{FSM}	T_{C} =25°C, tp=10ms, Half Sine Wave	38	А
Power Dissipation	P _{TOT}	T _C =25°C	51	W
		T _C =110°C	22	W
Operating Junction	T _j		-55°C to 175°C	°C
Storage Temperature	T_{stg}		-55°C to 175°C	°C

Thermal Characteristics

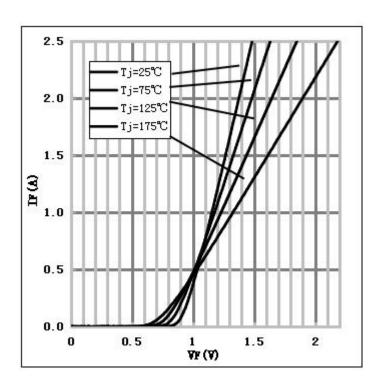
Darameter	Cumbal	Test Condition	Value	Unit
Parameter	Symbol	lest Condition	Тур.	Unit
Thermal resistance from junction to case	R _{th JC}		2.96	°C/W

Electrical Characteristics

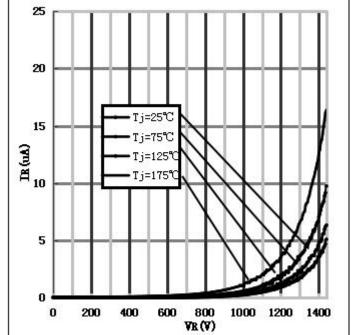
Downston	Councile and	Took Counditions	Numerical		11
Parameter	Symbol	Test Conditions	Тур.	Max.	Unit
Famurand Valtage	V _F	$I_F=2A$, $T_j=25$ °C	1.38	1.7	.,
Forward Voltage		$I_F=2A, T_j=175^{\circ}C$	1.9	2.5	V
Davisias Coment	I _R	$V_R=1200V, T_j=25^{\circ}C$	1.15	50	
Reverse Current		$V_R=1200V, T_j=175$ °C	4.5	100	μΑ
		$V_R = 800V, T_j = 25^{\circ}C$			
Total Capacitive Charge	Q_{C}	$Qc = \int_0^{VR} C(V)dV$	12	-	nC
	_	$V_R=0V$, $T_j=25$ °C, $f=1MHZ$	170	172	
Total Capacitance	С	V_R =400V, T_j =25°C, f=1MHZ	11.1	11.5	pF
		V_R =800V, T_j =25°C, f=1MHZ	9.2	9.5	

Performance Graphs

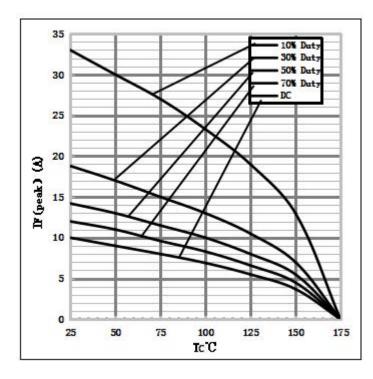
1) Forward IV characteristics as a function of Tj:



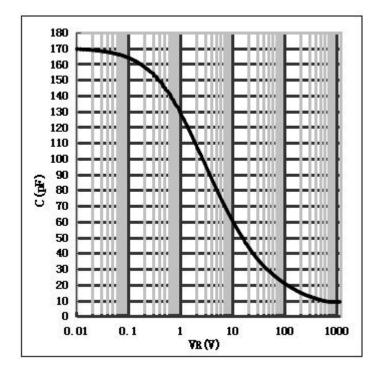
2) Reverse IV characteristics as a function of Tj:



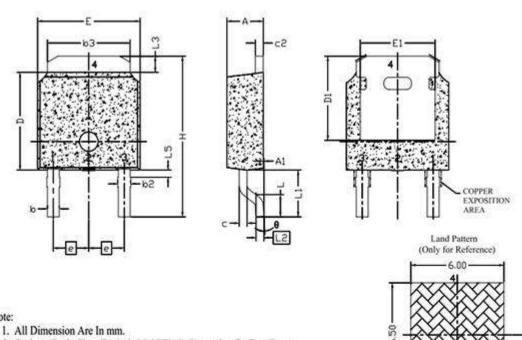
3) Current Derating:



4) Capacitance vs. reverse voltage:



Package TO-252

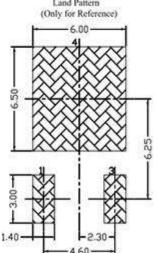


单位: mm

SYMBDL	DIMENSIONAL REQMTS			
	MIN	NOM	MAX	
E	6.40	6.60	6.731	
L	1.40	1.52	1.77	
Ll	2	2.743 REI	3	
L2	0.508 BSC			
L3	0.89	**	1.27	
L5				
D	6.00 6.10		6.22	
Н	9.40	10.00	10.40	
b	0.64	0.76	0.88	
b2	0.77	0.84	1.14	
b3	5.21	5.34	5.46	
e	2.286 BSC			
Α	2.20	2.30	2.38	
A1	0	0		
С	0.46	0.50	0.60	
C2	0.46	0.50	0.58	
D1	5.21			
E1	4.40			
θ	0°		10°	

Note:

- 2. Package Body Sizes Exclude Mold Flash, Protrusion Or Gate Burrs. Mold Flash, Protrusion Or Gate Burrs Shall Not Exceed 0.10 mm Per Side.
- 3. Package Body Sizes Determined At The Outermost Extremes Of The Plastic Body Exclusive Of Mold Flash, Gate Burrs And Interlead Flash, But Including Any Mismatch Between The Top And Bottom Of The Plastic Body.
- 4. The Package Top May Be Smaller Than The Package Bottom.
- 5. Dimension "b" Does Not Include Dambar Protrusion. Allowable Dambar Protrusion Shall Be 0.10 mm Total In Excess Of "b" Dimension At Maximum Material Condition. The Dambar Cannot Be Located On The Lower Radius Of The Foot.



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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