TD5G08065M

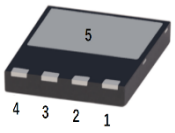
Silicon Carbide Schottky Diode

V_{RRM}	=	650 V
I_F (T_C=159 ℃)	=	8 A
Q_C	=	28 nC

Features

- 650 V Schottky Rectifier
- Zero Reverse Recovery Current
- High-Frequency Operation
- Temperature-Independent Switching
- Extremely Fast Switching

Package



DFN 8*8

RoHS

Benefits

- Replace Bipolar with Unipolar Rectifiers
- Essentially No Switching Losses
- High Efficiency
- Reduction of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway

Applications

- Switching Mode Power Supply
- Boost Diodes in PFC
- DC/DC Converters
- AC/DC Converters
- Free Wheeling Diodes in Inverter

Part Number	Package	Marking
TD5G08065M	DFN 8*8	TD5G08065M

Maximum Ratings （Tc = 25 ℃ unless otherwise specified）

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	650	V		
V_{RSM}	Surge Peak Reverse Voltage	650	V		
V_R	DC Peak Reverse Voltage	650	V		
I_F	Continuous Forward Current	37 17 8	A	T_c=25 ℃ T_c=135 ℃ T_c=159 ℃	Fig. 3
I_{FSM}	Non-Repetitive Forward Surge Current	55	A	T_c=25 ℃，t_p=10 ms，Half Sine Pulse	
P_{tot}	Power Dissipation	183 80	W	T_c=25 ℃ T_c=110 ℃	Fig. 4
T_J	Operating Junction Range	-55 to +175	℃		
T_{stg}	Storage Temperature Range	-55 to +175	℃		

Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.38 1.8	1.65 2.4	V	I_F = 8 A， T_J = 25 ℃ I_F = 8 A， T_J = 175 ℃	Fig. 1
I_R	Reverse Current	3 10	50 180	μA	V_R = 650 V， T_J = 25 ℃ V_R = 650 V， T_J = 175 ℃	Fig. 2
Q_C	Total Capacitive Charge	28		nC	V_R = 400 V， I_F = 8 A， T_J = 25 ℃	Fig. 6
C	Total Capacitance	540 56 42		pF	V_R = 0 V， T_J = 25 ℃， f = 1 MHz V_R = 200 V， T_J = 25 ℃， f = 1 MHz V_R = 400 V， T_J = 25 ℃， f = 1 MHz	Fig. 5
E_C	Capacitance Stored Energy	3.7		μJ	V_R = 400 V	Fig. 7

Note：This is a majority carrier diode, so there is no reverse recovery charge.

Thermal Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case		0.82		℃/W	Fig.8

Typical Performance

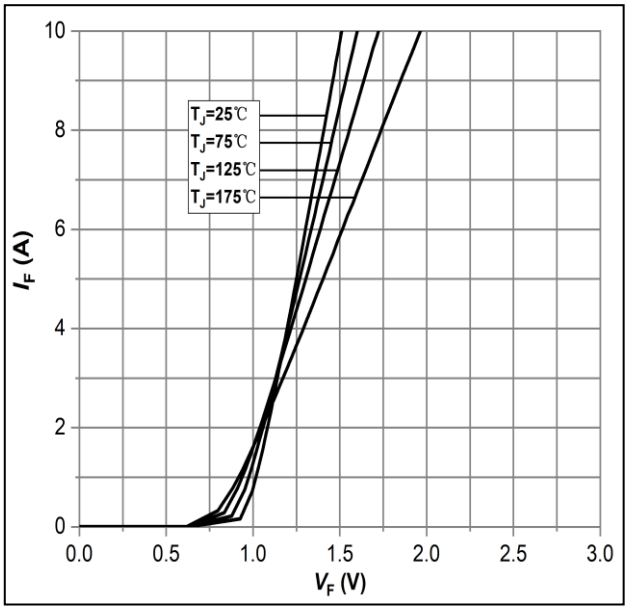


Figure 1: Forward Characteristics

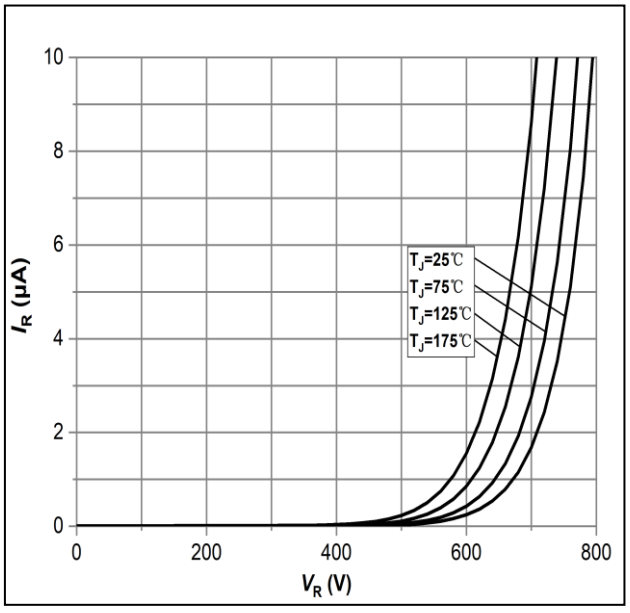


Figure 2: Reverse Characteristics

Typical Performance

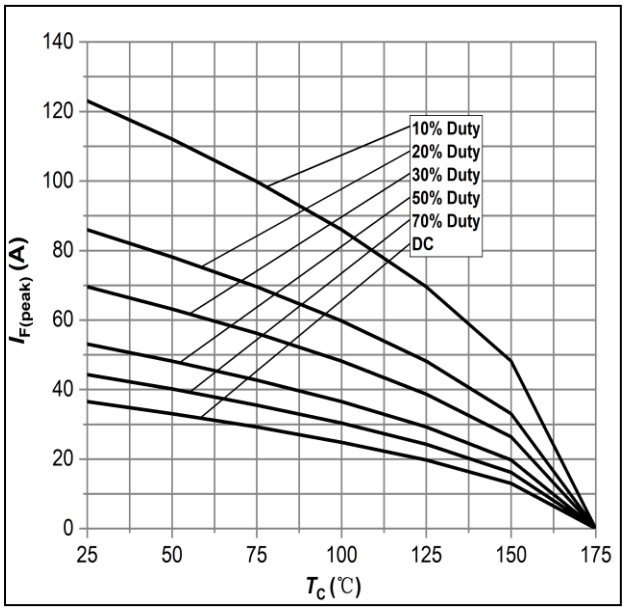


Figure 3: Current Derating

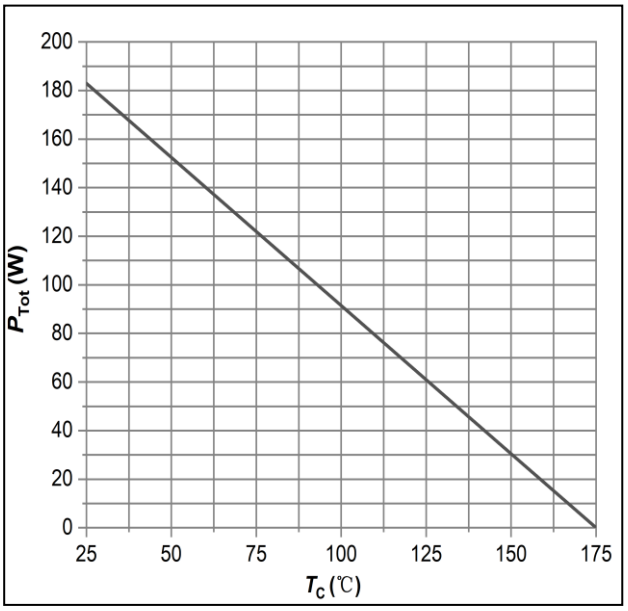


Figure 4: Power Derating

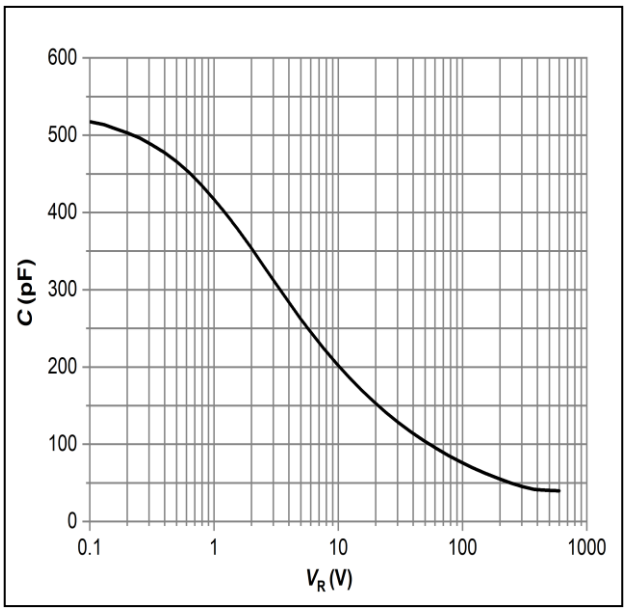


Figure 5: Capacitance vs. Reverse Voltage

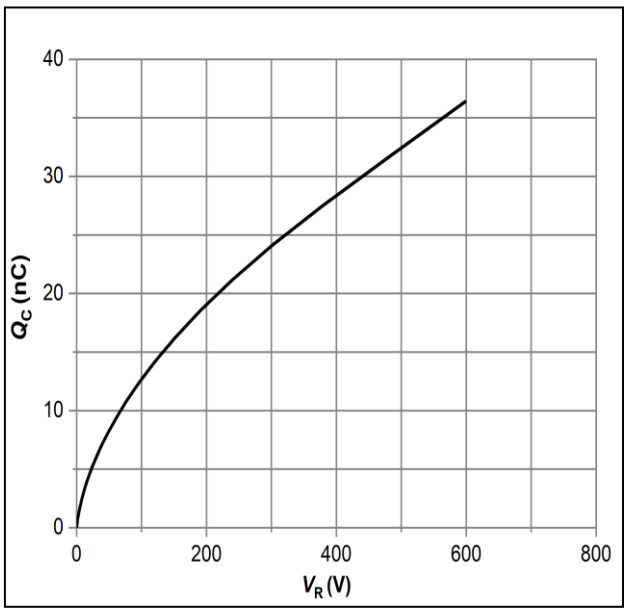


Figure 6: Total Capacitance Charge vs. Reverse Voltage

Typical Performance

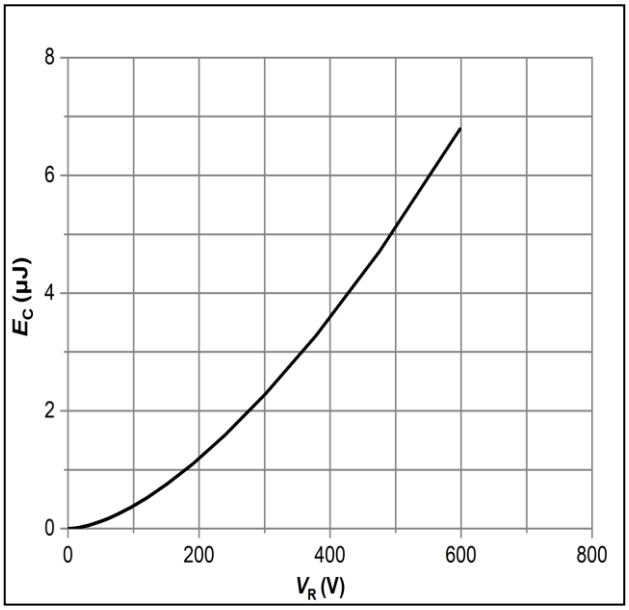


Figure 7:Typical Capacitance Stored Energy

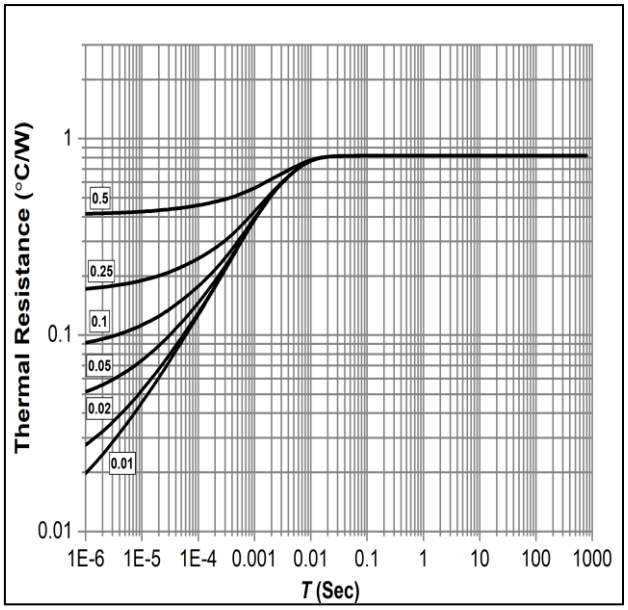
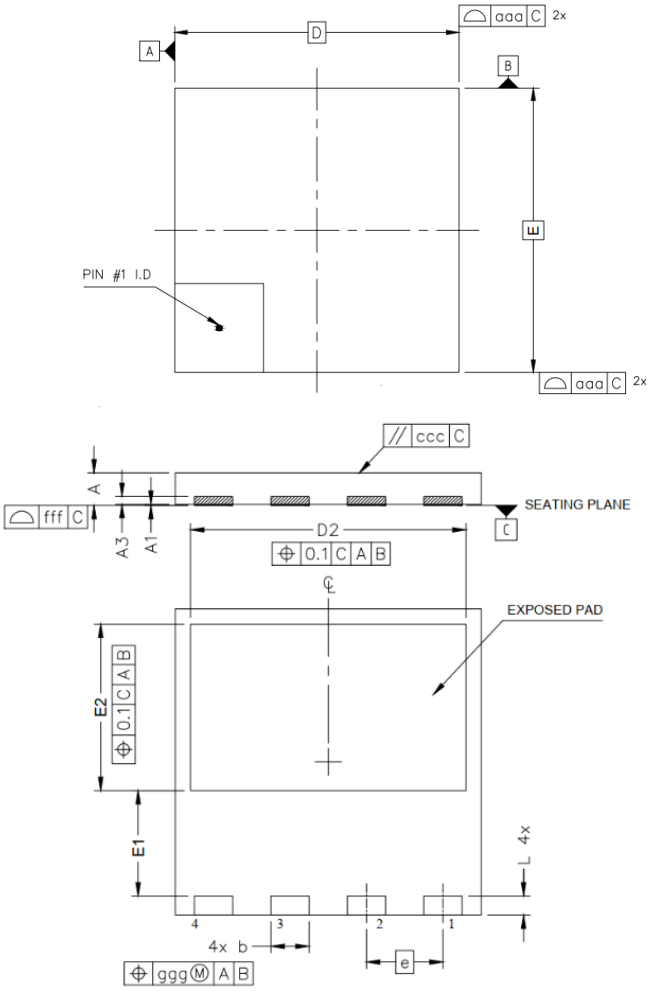


Figure 8: Transient Thermal Impedance

Package Dimensions

Package：DFN 8*8



SYMBOL	DIMENSIONS		
	Min.	NOM	Max.
A	0.75		0.95
A1	0.00		0.05
A3	0.10		0.30
b	0.90		1.10
D	7.90		8.10
E	7.90		8.10
D2	7.10		7.30
E1	2.65		2.85
E2	4.25		4.45
e	2.00 BSC		
L	0.40		0.60
aaa	0.10		
ggg	0.05		
ccc	0.05		
fff	0.05		

Note:

1. ALL DIMENSION ARE IN MM. ANGLES ARE IN DEGREES.All Dimension Are In mm. Angle Are In Degrees.
2. DIMENSION b APPLIES TO METALLIZED TERMINAL AND IS MEASURED BETWEEN 0.90mm AND 1.10mm FROM TERMINAL TOP.
3. DIMENSIONS DO NOT INCLUDE BURRS OR MODL FLASH.
4. COPLANARITY APPLIES TO THE EXPOSED HEAT SLUG AS WELL AS THE TERMINAL.
5. RADIUS ON TERMINAL IS OPTIONAL.

Revision History

Document Version	Description of Changes
Rev.1.0	Released

关于公司和产品的更多信息请登录公司官网查询：

www.topelectronics.cn

安徽芯塔电子科技有限公司
TOPE Technologies Co., Ltd.
WuHu, Auhui, China 241002
Contact: sale@topelectronics.cn