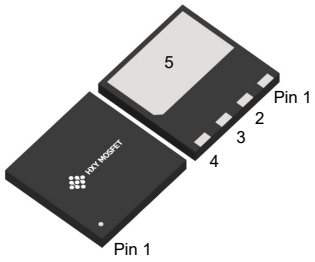
IDL08G65C5

Silicon Carbide Schottky Diode

Features

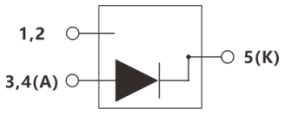
- 650-Volt Schottky Rectifier
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching
- Positive Temperature Coefficient on V_F



DFN8X8B

Benefits

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



Applications

- Switch Mode Power Supplies
- Power Factor Correction
- Motor Drives

Part Number	Package	Qty(PCS)
IDL08G65C5	DFN8X8B	3000

Maximum Ratings (T_C = 25 ˚C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions
V_{RRM}	Repetitive Peak Reverse Voltage	650	V	
V_{RSM}	Surge Peak Reverse Voltage	650	V	
I_F	Continuous Forward Current	23.1 10.8 8	A	T_C=25˚C T_C=135˚C T_C=150.5˚C
I_{FRM}	Repetitive Peak Forward Surge Current	30	A	T_C=25˚C, t_p = 10 ms, Half Sine Wave
I_{FSM}	Non-Repetitive Peak Forward Surge Current	60	A	T_C=25˚C, t_p = 10 ms, Half Sine Wave
P_{tot}	Power Dissipation	93 40	W	T_C=25˚C T_C=110˚C
T_J , T_{stg}	Operating Junction and Storage Temperature	-55 to +175	˚C	
$\int i^2dt$	i²dt value	18	A^2s	T_C=25˚C, t_p = 10 ms, Half Sine Wave

Electrical Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
V_{DC}	DC Blocking Voltage	650			V	
V_F	Forward Voltage		1.42 1.88	1.7 2.5	V	I_F = 8 A T_J=25°C I_F = 8 A T_J=175°C
I_R	Reverse Current		0.12 0.91	50 100	μA	V_R = 650 V T_J=25°C V_R = 650 V T_J=175°C
Q_C	Total Capacitive Charge		21		nC	V_R = 400 V T_J = 25°C
C	Total Capacitance		395 42 41		pF	V_R = 0 V, T_J = 25°C, f = 1 MHz V_R = 200 V, T_J = 25°C, f = 1 MHz V_R = 400 V, T_J = 25°C, f = 1 MHz
E_C	Capacitance Stored Energy		5		μJ	V_R = 400 V

Thermal Characteristics

Symbol	Parameter	Typ.	Unit
$R_{\theta JC}$	Thermal Resistance from Junction to Case	1.61	°C/W

Typical Performance

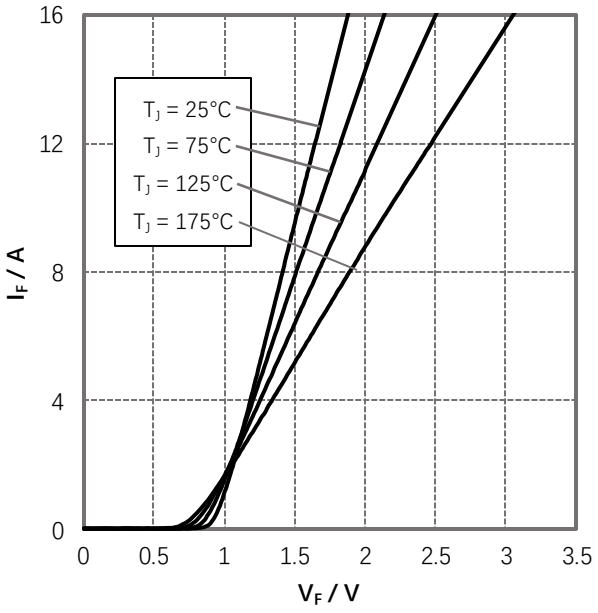


Figure 1. Forward Characteristics

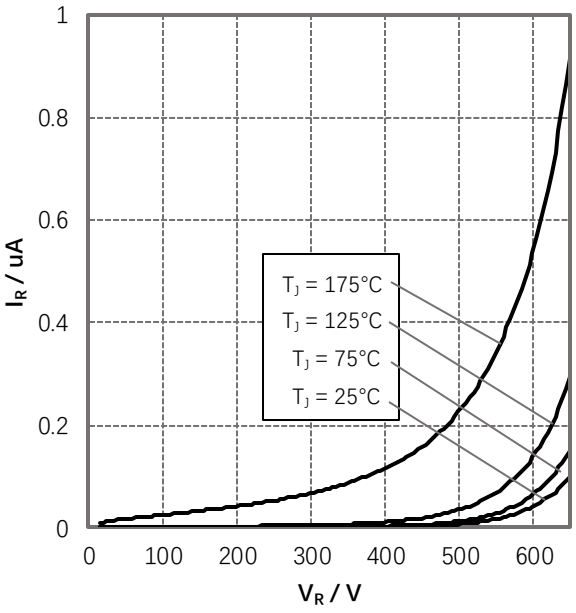


Figure 2. Reverse Characteristics

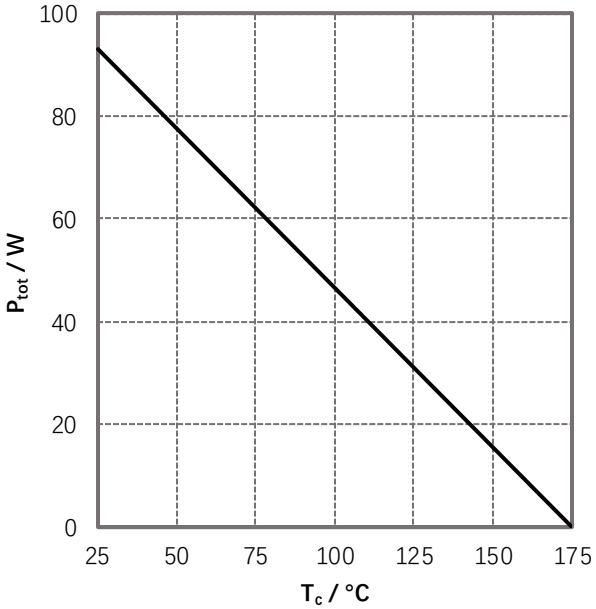


Figure 3. Power Derating

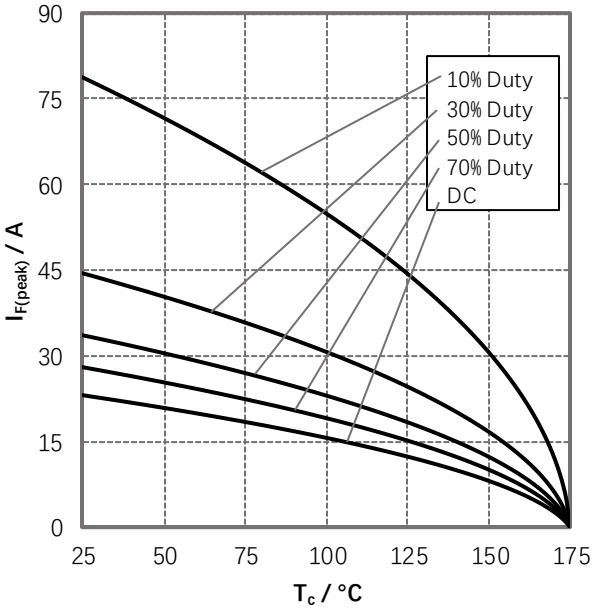


Figure 4. Current Derating

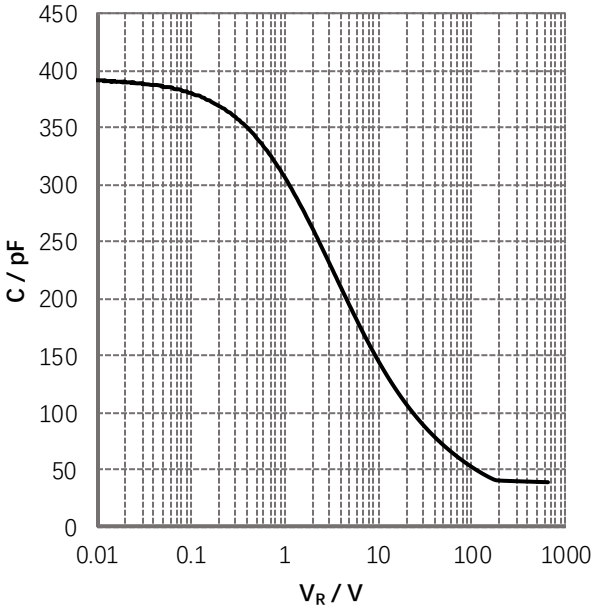


Figure 5. Capacitance vs. Reverse Voltage

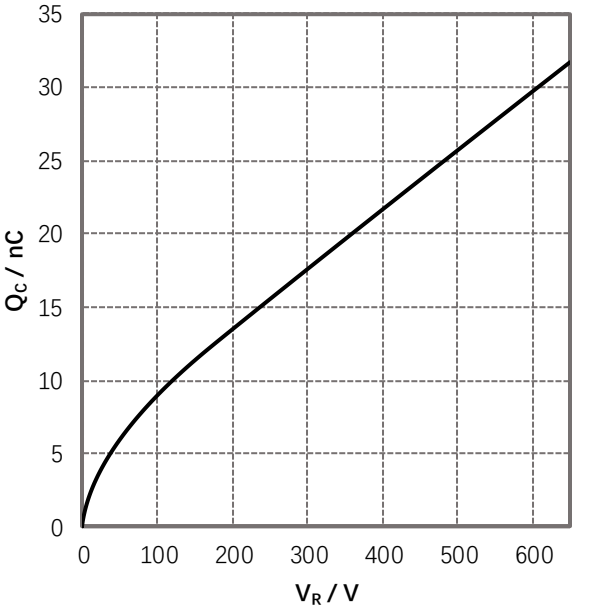


Figure 6. Total Capacitance Charge vs. Reverse Voltage

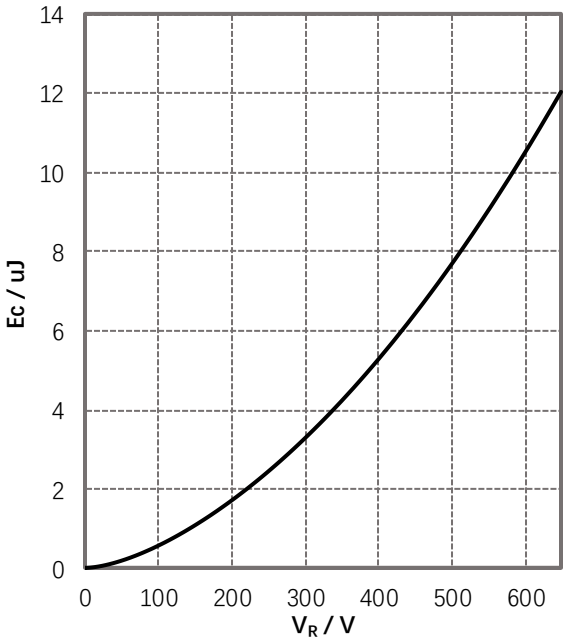


Figure 7. Capacitance Stored Energy

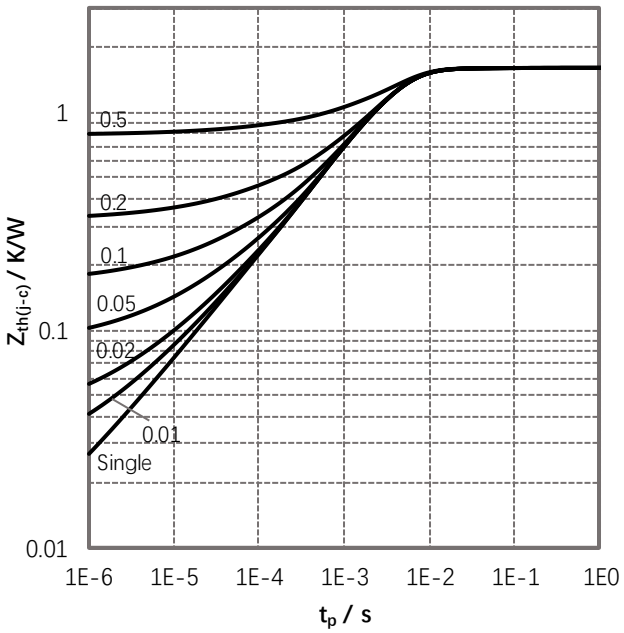
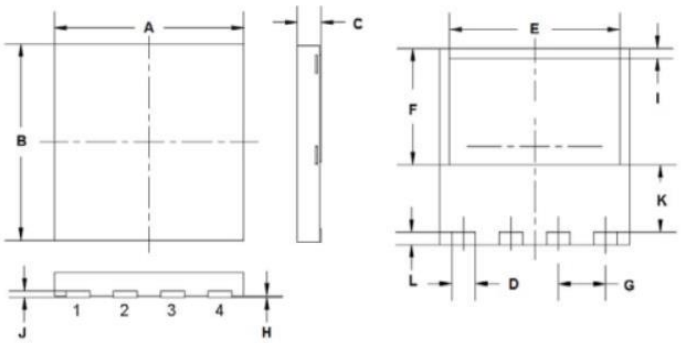


Figure 8. Transient Thermal Impedance

Package Information
DFN8X8B



Unit: mm

Dimension	Min.	Max.
A	7.90	8.10
B	7.90	8.10
C	0.75	0.95
D	0.90	1.10
E	7.10	7.30
F	4.65	4.85
G	1.80	2.20
H	0.00	0.05
I	0.30	0.50
J	0.10	0.30
K	2.65	2.85
L	0.40	0.60

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LM393DR-HXY TPSMB100CA-VR BV05C-H HAZ4007-01H HSTS521050B331 PESDNC2XD5VBL
PJSD24CW_R1 TPSMB28A-VR AQ15C-01FTG PJEC5V0M1FN2 60N06 HACPDQC5V0-HF HESD36VD3B
HESDSLC3V3D3B HRCLAMP3371ZCTFT HSEN3611D3 ESD5L5.0C-HXY ESD5LM5.0C-HXY
HSD15C.TCT PESDSC2FD5VU AZ4836-01L HPTVSUC3D5VB PESDLC2FD3V3BH PESDNC2XD5VBF