

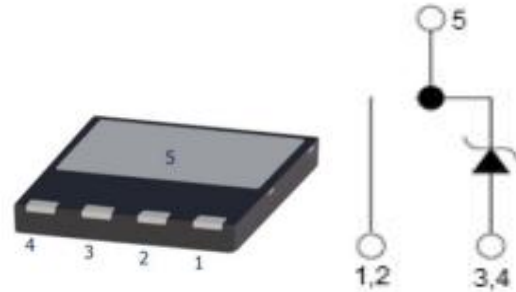
Silicon Carbide Schottky Diode 650V, 6A, 15nC

General Description

This product family offers state of the art performance. It is designed for high frequency applications here high efficiency and high reliability are required.

Features

- Zero Forward/Reverse Recovery Current
- High Blocking Voltage
- High Frequency Operation
- Positive Temperature Coefficient on VF
- Temperature Independent Switching Behavior
- High surge current capability



DFN 8×8

Applications

- PC Power
- Server Power Supply
- AC/DC converters
- DC/DC converters
- Uninterruptable power supplies

Benefits

- Higher System Efficiency
- Parallel Device Convenience without thermal runaway
- Higher Temperature Application
- No Switching loss
- Hard Switching & Higher Reliability
- Environmental Protection

Key performance parameters

Type	V_R	I_F $T_C=150^\circ\text{C}$	Q_C
KN3D06065G	650V	6A	15nC

Maximum Ratings

$T_C=25^{\circ}\text{C}$, unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	650	V
Peak Reverse Surge Voltage	V_{RSM}	650	V
DC Blocking Voltage	V_R	650	V

	I_F	18 8 6	A
Non Repetitive Forward Surge Current: $T_C = 25^{\circ}\text{C}$, $t_p = 10\text{ms}$, Half Sine Pulse $T_C = 150^{\circ}\text{C}$, $t_p = 10\text{ms}$, Half Sine Pulse $T_C = 25^{\circ}\text{C}$, $t_p = 10 \mu\text{s}$, Square	I_{FSM}	35 25 200	A
Repetitive peak Forward Surge Current: Freq = 0.1Hz, 100 cycles $T_C = 25^{\circ}\text{C}$, $t_p = 10\text{ms}$, Half Sine Pulse $T_C = 150^{\circ}\text{C}$, $t_p = 10\text{ms}$, Half Sine Pulse	I_{FRM}	25 20	A
Total power dissipation : $T_C = 25^{\circ}\text{C}$	P_D	63	W
Operating Junction Temperature :	T_j	-55 to 175	$^{\circ}\text{C}$
Storage Temperature :	T_{stg}	-55 to 175	$^{\circ}\text{C}$

Thermal Resistance

Parameter	Symbol	Typ.	Max	Unit
Thermal resistance, junction-case	R_{thJC}	2.0		$^{\circ}\text{C}/\text{W}$

Electrical Characteristic

$T_C = 25^{\circ}\text{C}$, unless otherwise specified

Parameter	Symbol	Value			Unit	Test Condition
		Min.	Typ.	Max.		
DC Blocking Voltage	V_{DC}	650			V	$I_R = 250\mu\text{A}$ $T_j = 25^{\circ}\text{C}$
Forward Voltage	V_F		1.50 1.65 1.80	1.80	V	$I_F = 6\text{A}$ $T_j = 25^{\circ}\text{C}$ $T_J = 125^{\circ}\text{C}$ $T_j = 175^{\circ}\text{C}$
Reverse Current	I_R		5 60 100	80	μA	$V_R = 650\text{V}$ $T_j = 25^{\circ}\text{C}$ $T_J = 125^{\circ}\text{C}$ $T_j = 175^{\circ}\text{C}$
Total Capacitance Charge	Q_C		15		nC	$V_R = 400\text{V}$ $T_J = 25^{\circ}\text{C}$
Total Capacitance	C		240 30 21		pF	$T_J = 25^{\circ}\text{C}$, Freq = 1MHz $V_R = 1\text{V}$ $V_R = 200\text{V}$ $V_R = 400\text{V}$

Characteristics Curves

Figure 1. Forward Characteristics

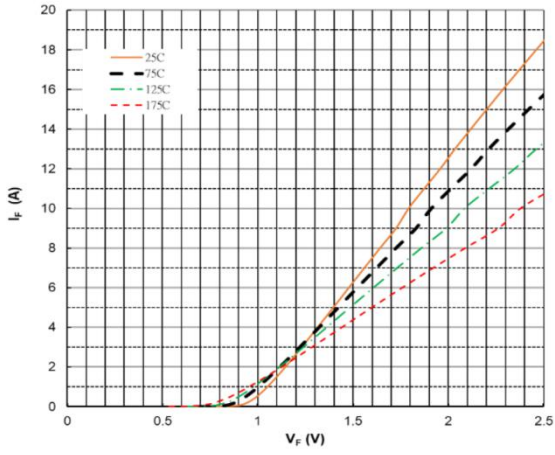


Figure 2. Forward Characteristics

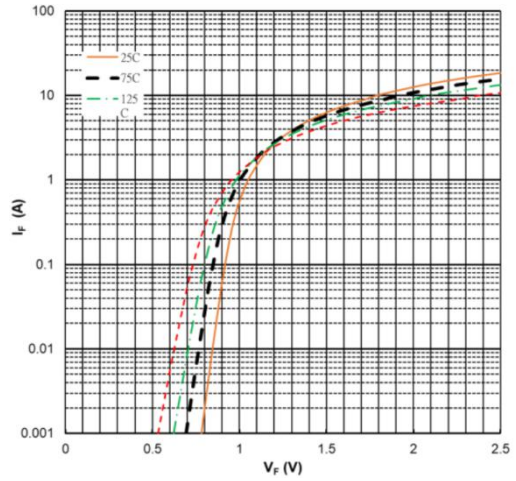


Figure 3. Reverse Characteristics

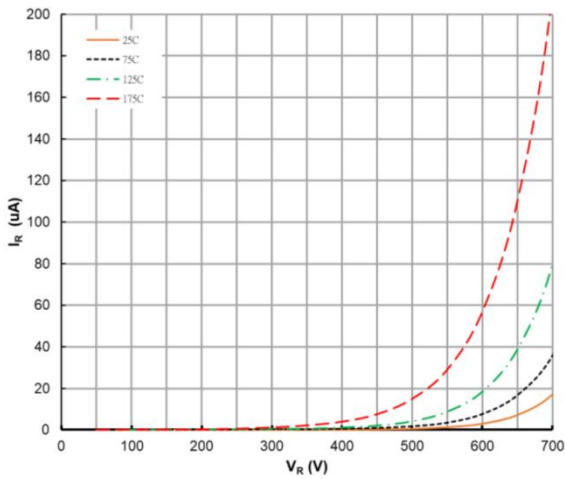


Figure 4. Power Derating

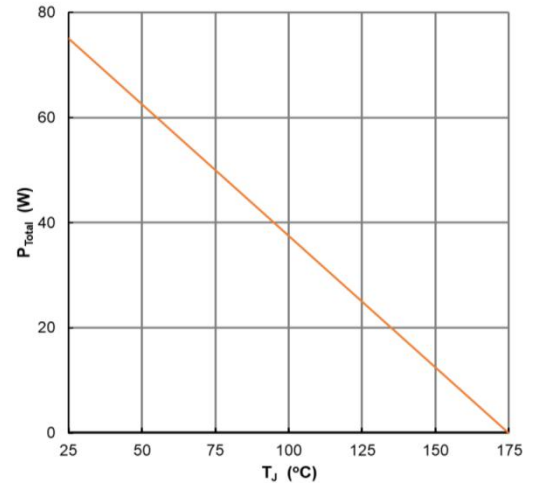


Figure 5. Capacitance vs Reverse Voltage

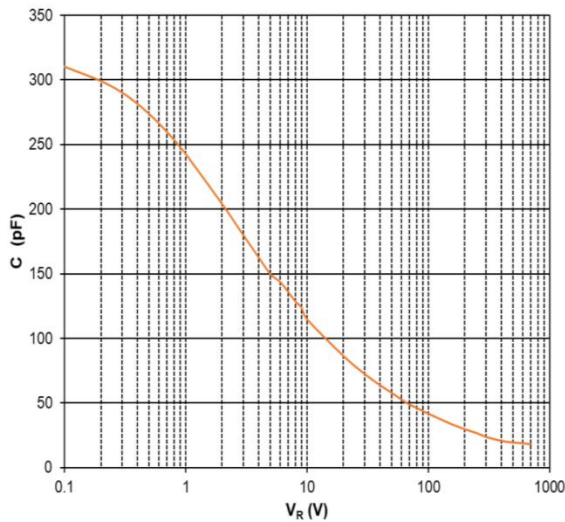
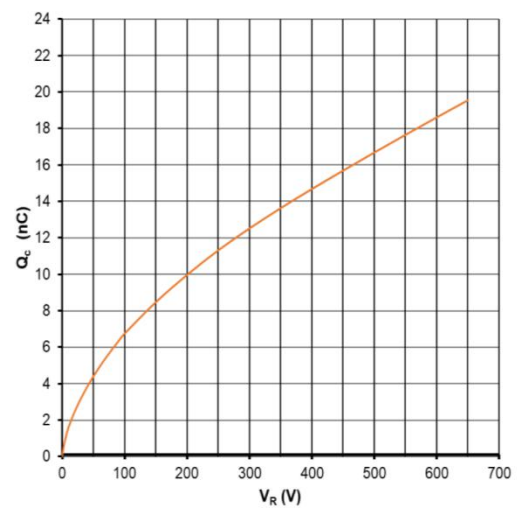
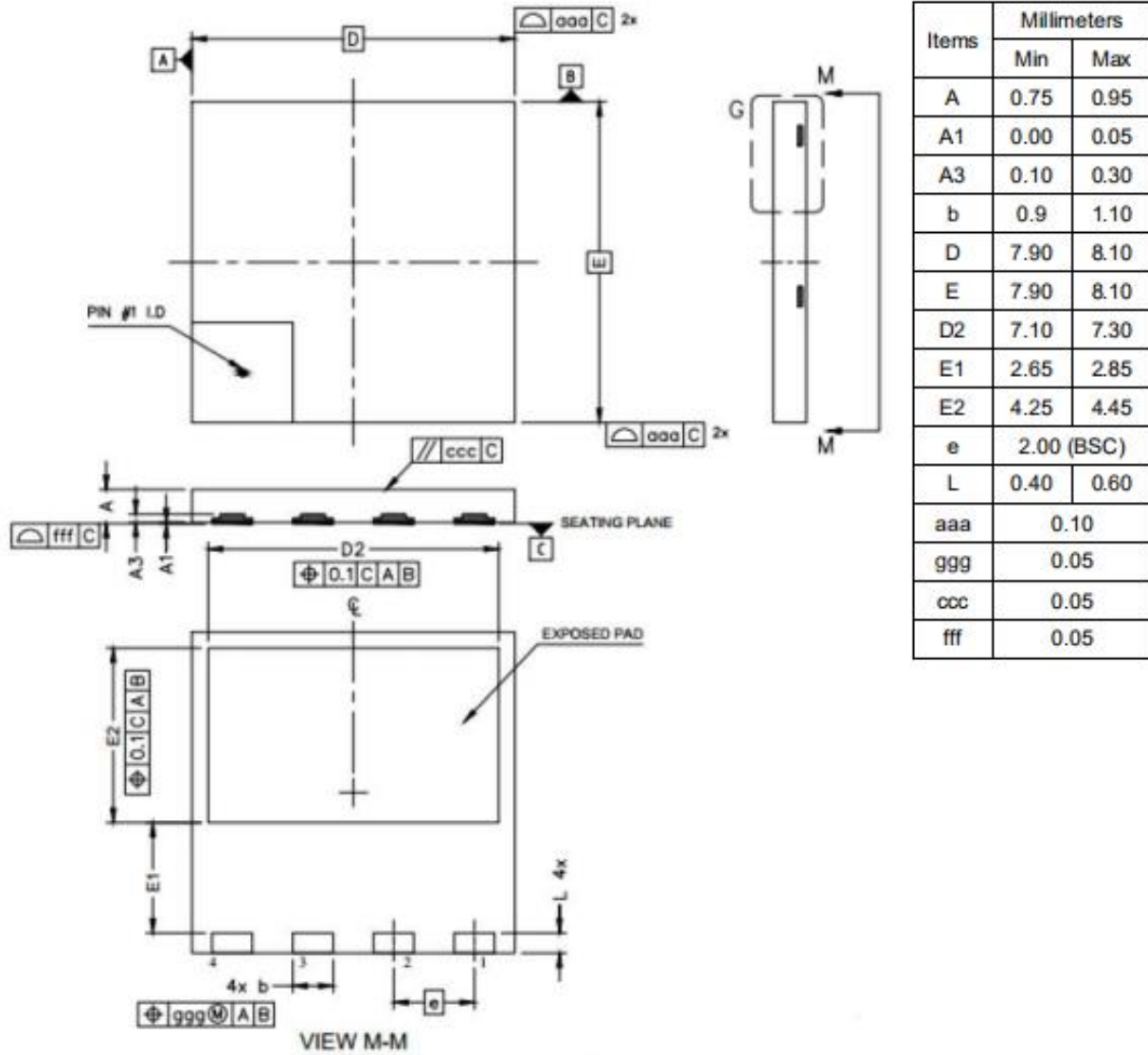


Figure 6. Recovery Charge vs Reverse Voltage



Package Dimensions: DFN 8×8 Package



Part Number	Package	Packing	Marking	M.O.Q
KN3D06065G	DFN8X8	3000pcs/Tape&Reel	KN3D06065G	3000

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