



XD6506F8

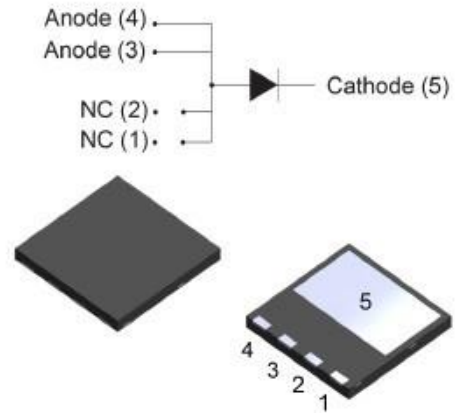
650V 6A SiC Schottky Barrier Diode

Features

V_{CE}	$I_F@135^{\circ}C$	$I_F@155^{\circ}C$
650V	11A	6A

Characteristic

- Zero Reverse Recovery Current
- Positive temperature coefficient
- Temperature-independent performance
- High-speed switching
- Low switching loss
- Low heat dissipation requirements



Application

- Switching power supply
- Power factor correction
- Motor drive, traction
- Charging pile

Type	Package	Qty
XG6506F8	DFN8*8-4L	3000

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650V SiC SBD

Abs. Max. Ratings

Parameter	Symbol	Value	Unit	Test Conditions
Reverse voltage (Repetitive peak)	V_{RRM}	650	V	$T_C = 25^\circ\text{C}$
Reverse Voltage (Surge peak)	V_{RSM}	650		$T_C = 25^\circ\text{C}$
Reverse voltage (DC)	V_{DC}	650		$T_C = 25^\circ\text{C}$
Continuous forward current	I_F	22	A	$T_C = 25^\circ\text{C}$
		11		$T_C = 135^\circ\text{C}$
		6		$T_C = 150^\circ\text{C}$
Surge non-repetitive forward current	I_{FSM}	48	A	$T_C = 25^\circ\text{C}$, $t_p = 10\text{ms}$, half Sine Pulse
Total power dissipation	P_{TOT}	100	W	$T_C = 25^\circ\text{C}$
i^2t value	$\int i^2 dt$	11.5	A^2s	$T_C = 25^\circ\text{C}$, $t_p = 10\text{ms}$
Operating temperature	T_j	-55~175	$^\circ\text{C}$	
storage temperature	T_{stg}	-55~175	$^\circ\text{C}$	

Thermal Characteristics

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Thermal resistance	$R_{th(j-c)}$	/	1.5	/	$^\circ\text{C}/\text{W}$	

Electrical Characteristics $T_J = 25^\circ\text{C}$

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
DC blocking voltage	V_{DC}	650	/	/	V	$I_R = 100 \mu\text{A}$
Forward voltage	V_F	/	1.30	1.50	V	$I_F = 6\text{A}$, $T_J = 25^\circ\text{C}$
		/	1.55	1.80		$I_F = 6\text{A}$, $T_J = 175^\circ\text{C}$
Reverse current	I_R	/	1	18	μA	$V_R = 650\text{V}$, $T_J = 25^\circ\text{C}$
		/	2	48		$V_R = 650\text{V}$, $T_J = 175^\circ\text{C}$



Typical Electrical Characteristics Curves

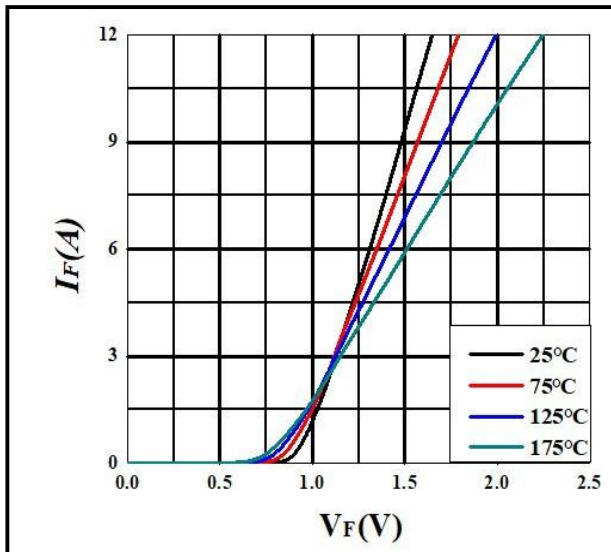


Figure 1. Forward Characteristics

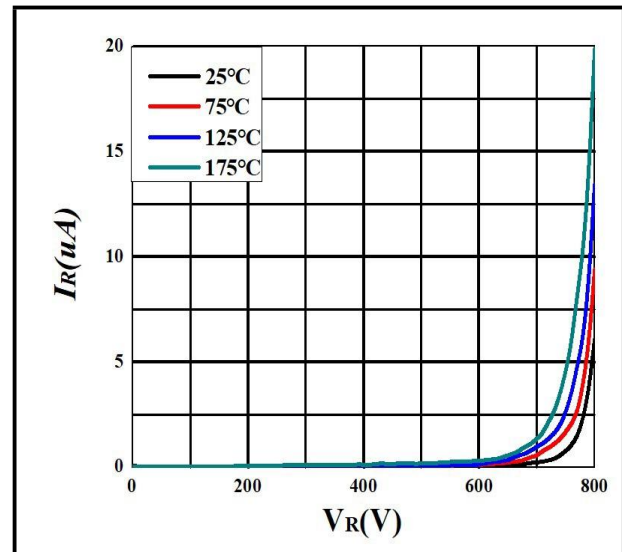


Figure 2. Reverse Characteristics

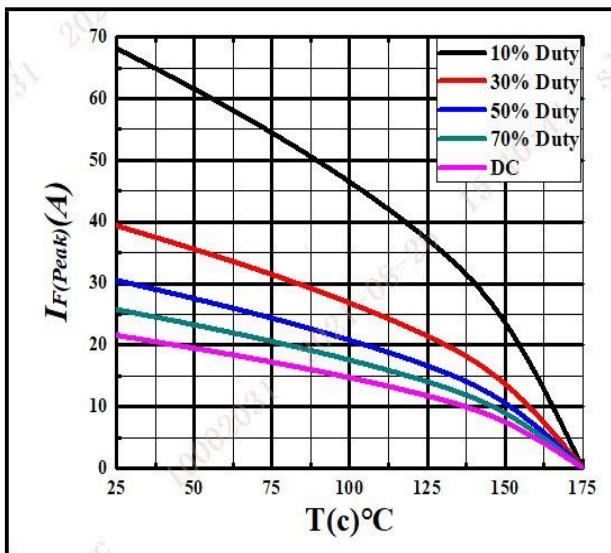


Figure 3. Current Derating

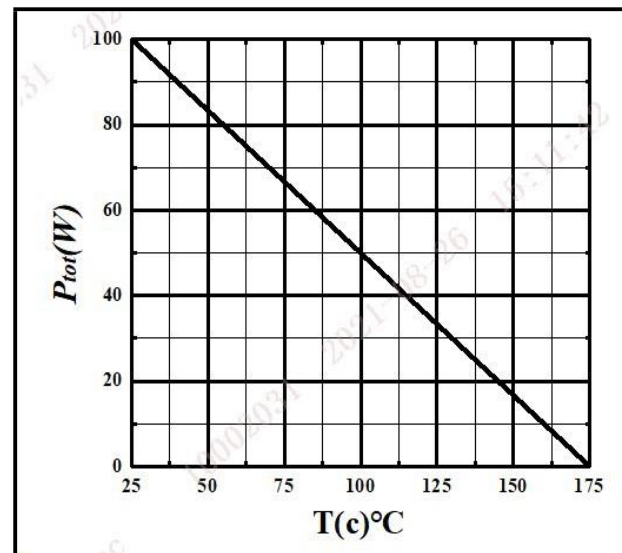
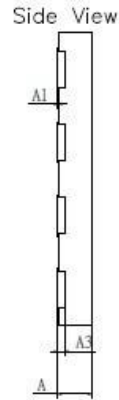
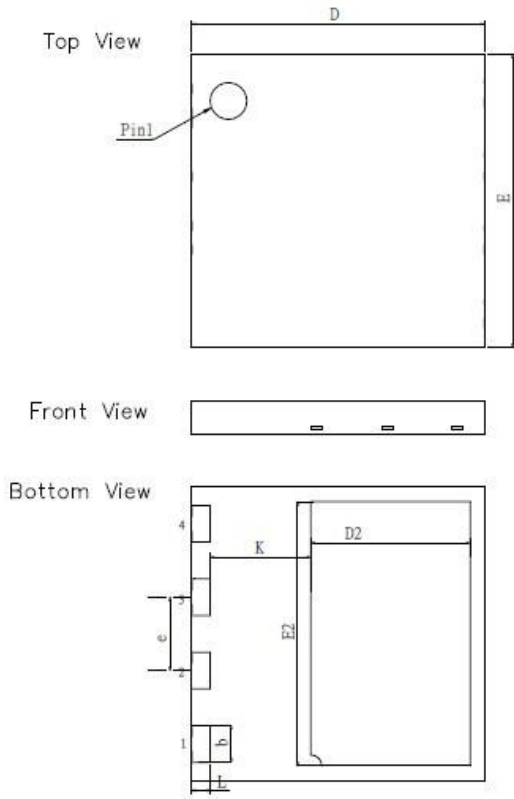


Figure 4. Power Derating

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Package



SYMBOL	mm		
	MIN	NOM	MAX
A	0.80	0.90	1.00
A1	0.00	0.02	0.05
A3	0.203REF		
b	0.09	1.00	1.10
D	7.90	8.00	8.10
E	7.90	8.00	8.10
D2	4.25	4.35	4.45
E2	7.10	7.20	7.30
e	1.90	2.00	2.10
K	2.65	2.75	2.85
L	0.40	0.50	0.60

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Revision History

Document revision	Date	Description of changes
2.0	2023.10.11	Target datasheet

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