

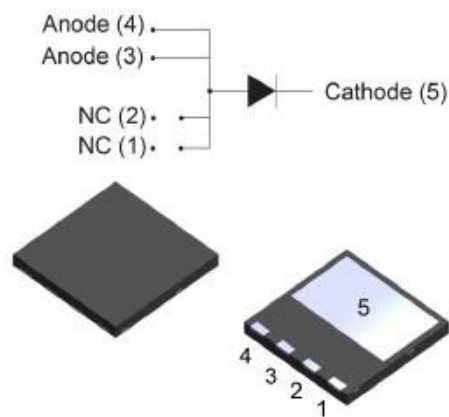
XD6506F8

650V 6A SiC Schottky Barrier Diode in DFN8x8 Package

Datasheet version: 1.0 Preliminary

Features

V_{RRM}	650V
$I_F(135^{\circ}C)$	11A



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

Device	Package
XG6506F8	DFN 8*8-4L

Abs. Max. Ratings

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

Thermal Characteristics

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

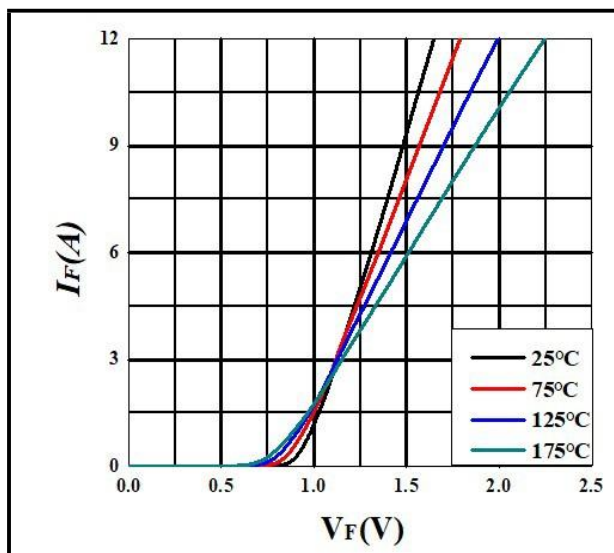


Figure 1. Forward Characteristics

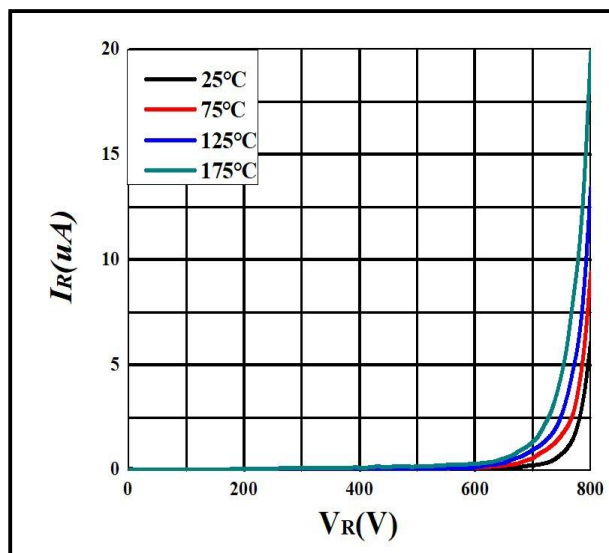


Figure 2. Reverse Characteristics

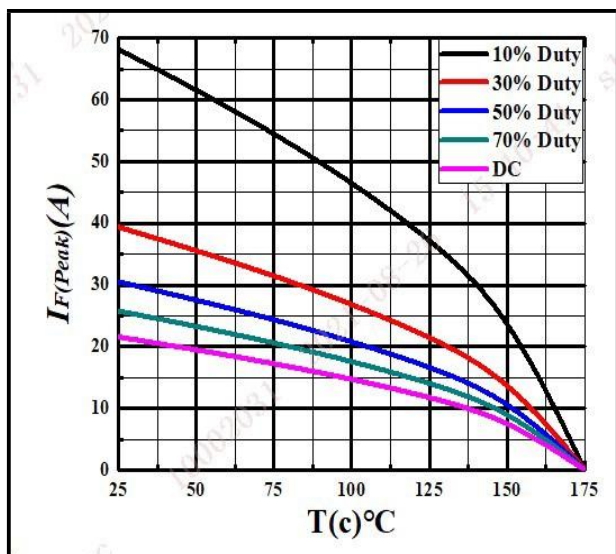


Figure 3. Current Derating

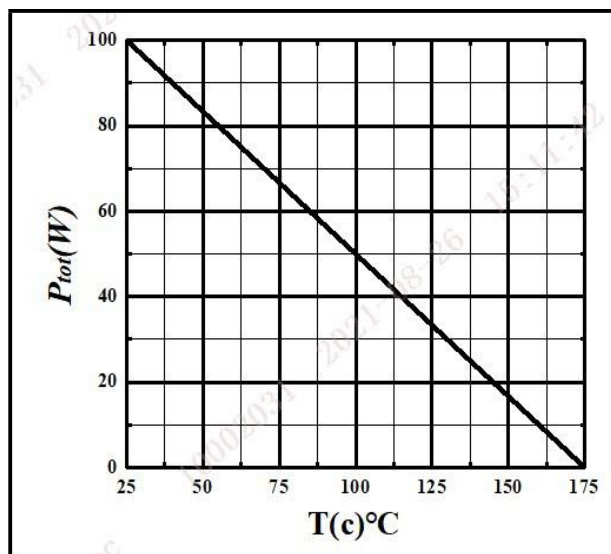
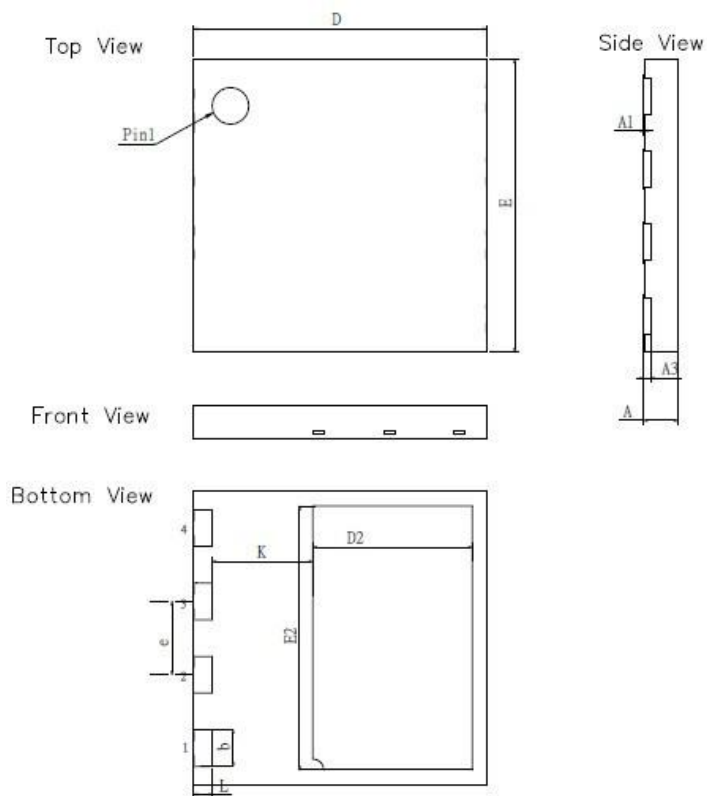


Figure 4. Power Derating

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

Ordering information

Part Number	XD6506F8
Package	DFN 8*8-4L
Unit Quantity	3000 EA
Packing Type	Reel
RoHS	Yes