

SIC SCHOTTKY BARRIER DIODE

Reverse Voltage - 650 V

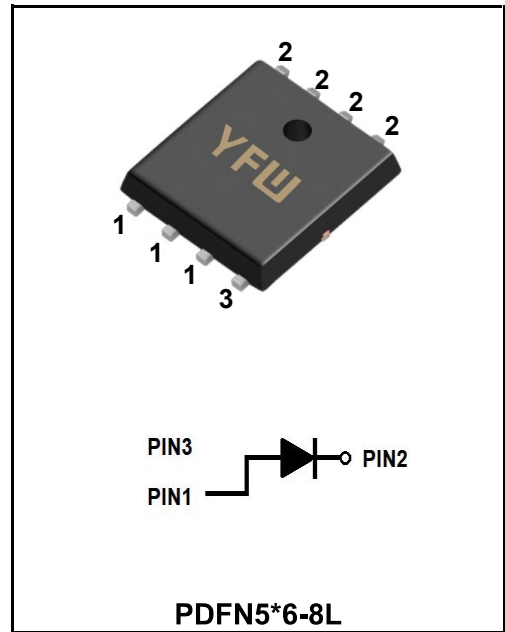
Forward Current - 10 A

FEATURES

- ◆650-Volt SiC JBS Rectifier
- ◆Zero Reverse Recovery
- ◆Positive Temperature Coefficient on VF
- ◆Temperature-Independent Switching Behavior
- ◆Extremely Fast Switching
- ◆Extremely Low Leakage Current

APPLICATIONS

- ◆Uninterruptible power supply
- ◆Switch mode power supply
- ◆Power factor correction
- ◆Solar inverter



Maximum Ratings at Ta=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Continuous Forward Current for Rth(j- c,max)	I_F	$T_C = 25^{\circ}C$	27
		$T_C = 110^{\circ}C$	17
		$T_C = 147^{\circ}C$	10
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	75 66	A
Repetitive Forward Surge Current, Sine Half-Wave(Freq= 0.1Hz, 50cycles)	I_{FRM}	69 61	A
Operating Temperature Range	T_J	175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Typical Thermal Resistance	$R_{\theta JC}$	1.05	°C/W

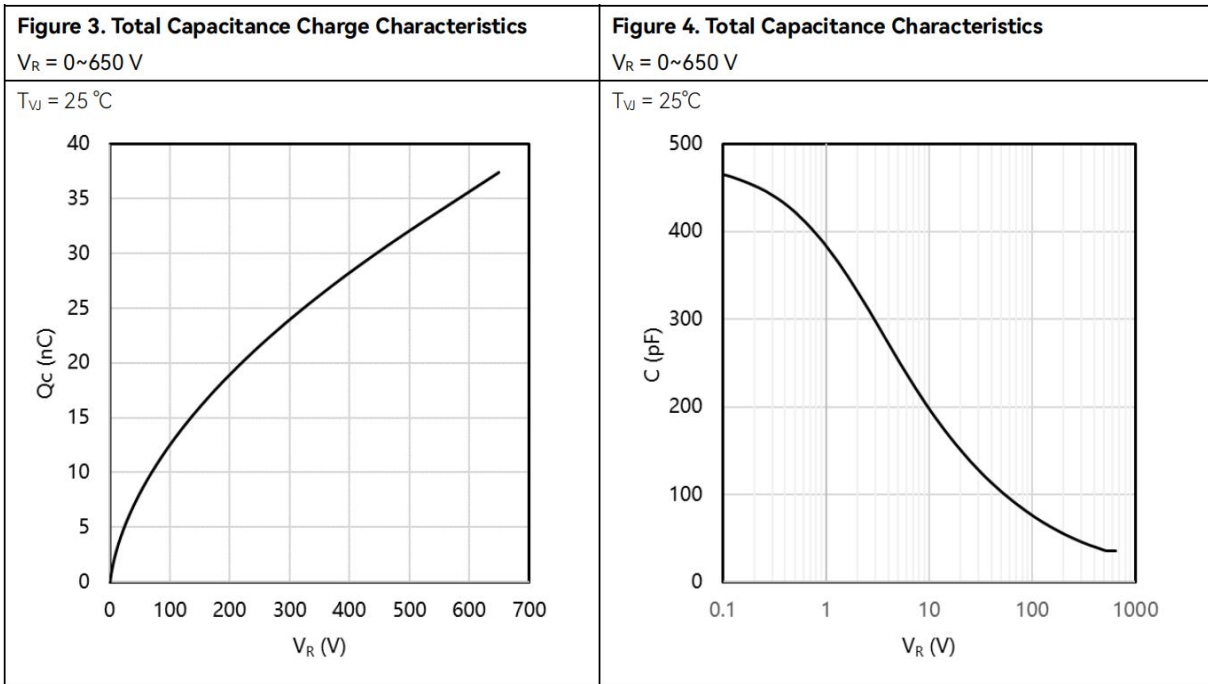
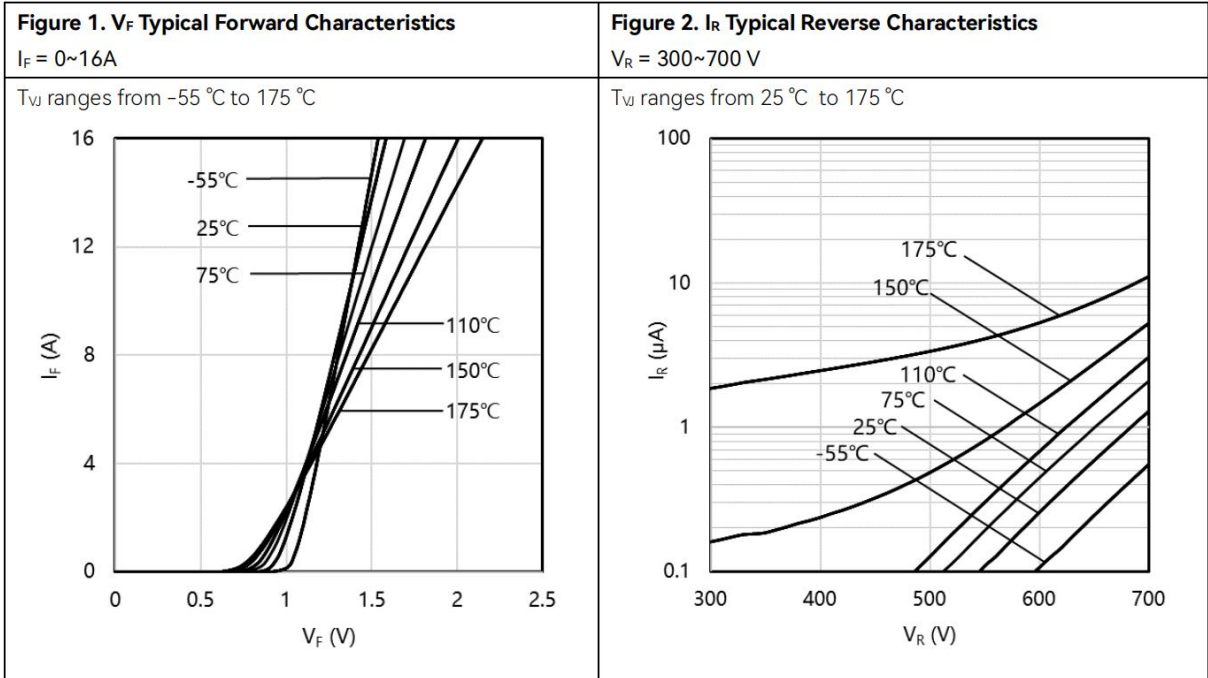
Note1: Thermal resistance from Junction to case per leg mounted on heatsink.

Electrical Characteristics unless otherwise specified

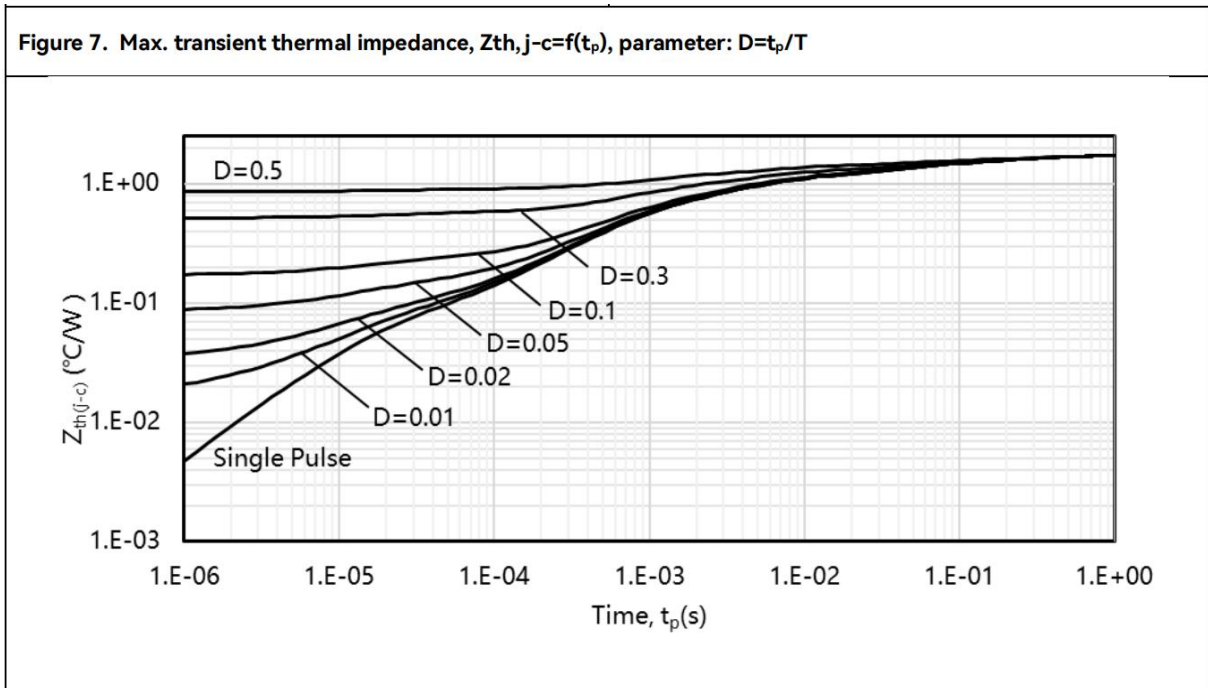
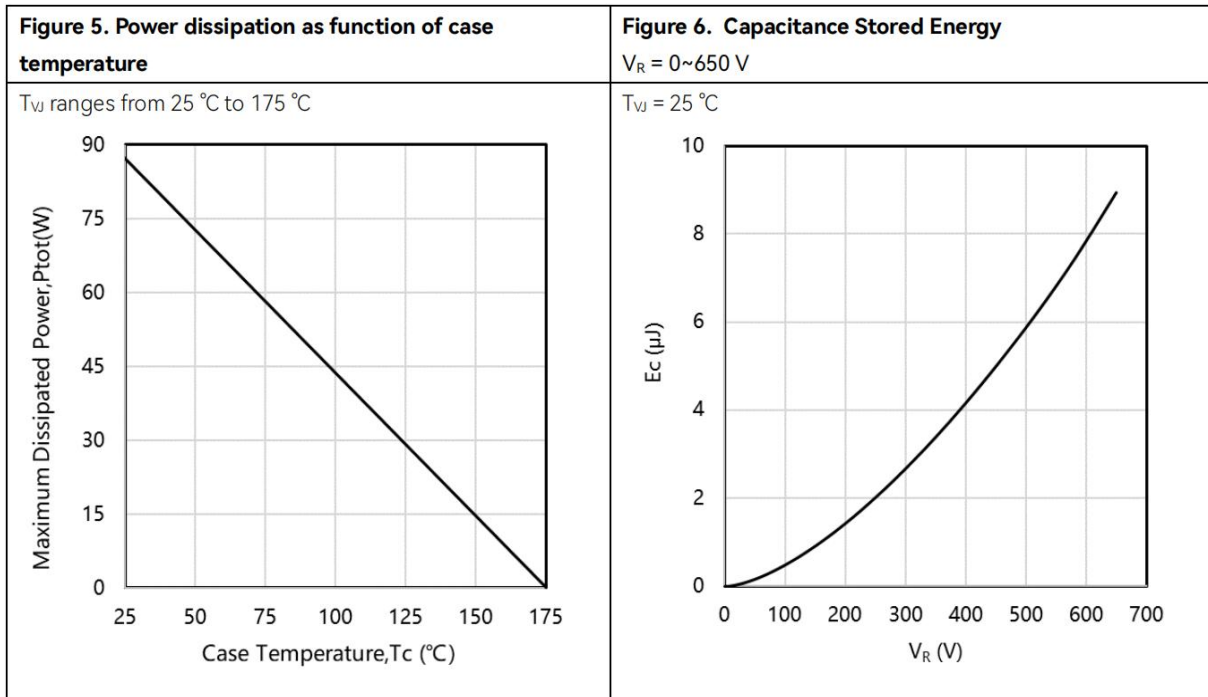
Parameter		Symbol	Value			Unit
			Min	Typ	Max	
Forward Voltage Drop(Note2)		V_{DC}	-	650	-	V
$I_R = 100\mu A$						
at $I_F=10A$	$T_A=25^\circ C$	V_F	-	1.34	1.65	V
	$T_A=175^\circ C$		-	1.66	-	
Maximum Reverse Current at $V_R=650V$	$T_A=25^\circ C$	I_R	-	1	40	μA
	$T_A=175^\circ C$		-	8.5	-	
Total capacitive charge	$V_R = 400V$	Q_C	-	29	-	nC
Total capacitance	$V_R = 1V, f = 1MHz$	C	-	390	-	pF
	$V_R = 200V, f = 1MHz$		-	56	-	
	$V_R = 400V, f = 1MHz$		-	41	-	
Capacitance stored energy	$V_R = 400V$	E_C	-	4.2	-	μJ

Note:Pulse test: 300 μs pulse width, 1 % duty cycle

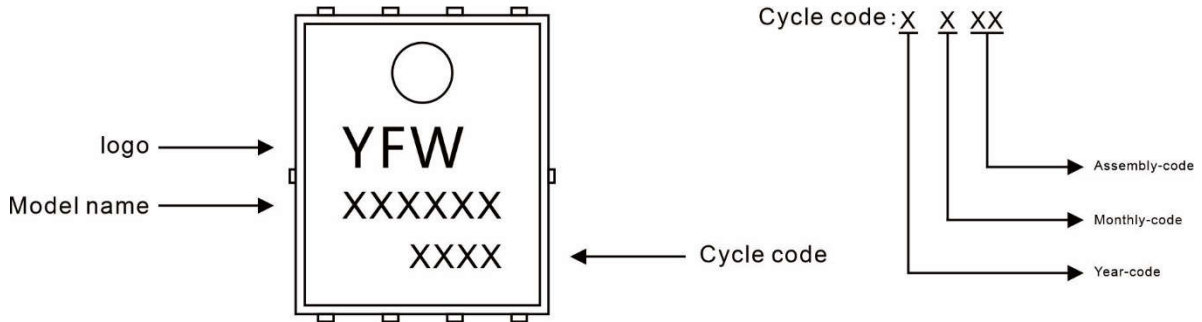
RATINGS AND CHARACTERISTIC CURVES



RATINGS AND CHARACTERISTIC CURVES



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWD310065NT	PDFN5*6-8L	0.0032oz(0.093g)	5000pcs/reel	10000pcs/box 50000pcs/Carton

Package Dimensions

PDFN5*6-8L

Dim	Millimeter		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.2	35	45
A2	0.204	0.304	8	12
b	0.4ref.		16ref.	
b1	0.2	0.4	8	16
D	5.0	5.3	197	209
D1	4.84	5.24	191	206
E	5.95	6.35	234	250
E1	3.275	3.675	129	145
E2	5.69	6.09	224	232
e	1.27typ.		50typ.	
K	1.29typ.		51typ.	
L	0.585	0.785	23	27
L1	0.7typ.		28typ.	

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