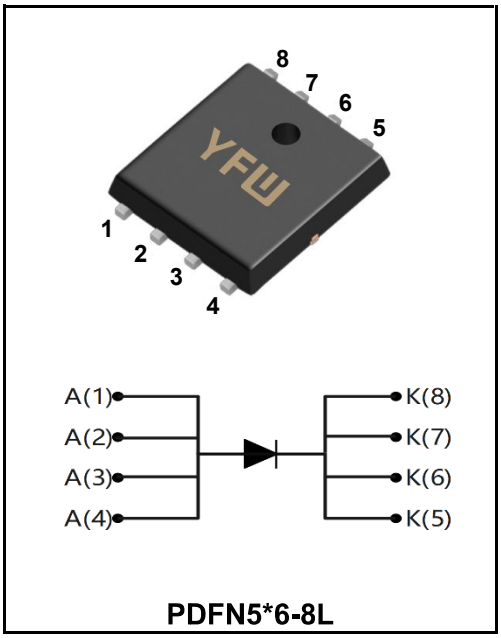
Silicon Carbide Schottky Barrier Diode

Reverse Voltage - 650 V

Forward Current - 4 A



PDFN5*6-8L

DESCRIPTION

- 650V Schottky diode
- Zero reverse recovery current
- Zero forward recovery voltage
- High frequency operation
- Switching characteristics independent of temperature Fast switch
- Positive temperature coefficient of forward voltage (V_F)

APPLICATION

- Switch mode power supplies(SMPS)
- Boost diodes in PFC or DC/DC stages
- Free wheeling diodes in inverter stages AC/DC converters

Absolute Maximum Ratings

(Rating at 25℃ junction temperature unless otherwise specified.)

Parameter		Symbol	Value	Unit
Maximum repetitive peak reverse voltage		V_{RRM}	650	V
Maximum DC blocking voltage		V_{DC}	650	V
Average forward current	T_C=155℃	$I_{F(AV)}$	4	A
Repetitive Peak Surge Current Half Sine Wave, D=0.1	t_P=10ms,T_C=25℃ t_P=10ms,T_C=125℃	I_{FRM}	20 16	A A
Peak Forward Surge Current Half Sine Wave	t_P=10ms,T_C=25℃ t_P=10ms,T_C=125℃	I_{FSM}	20 16	A A
Peak Forward Surge Current tp =10us, Pulse		I_{FSM}	280	A
Maximum Power Dissipation		P_{total}	46	W
Operating Junction Temperature Range		T_j	-55 to+175	℃
Storage Temperature Range		T_{stg}	-55 to+175	℃

Electrical Characteristics

(Rating at 25℃ junction temperature unless otherwise specified.)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Forward voltage	I_F=4A,T_j=25℃	V_F	-	1.5	1.7	V
	I_F=4A,T_j=175℃		-	1.8	-	
Reverse Leakage Current	V_R=650V,T_j=25℃	I_R	-	2	40	μA
	V_R=650V,T_j=175℃		-	0.02	-	mA
Total capacitance charge	I_F=4A,V_R=400V	Q_C	-	6.4	-	nC
Total capacitance	V_R=1V,f=1MHz	C	-	146	-	pF
	V_R=200V,f=1MHz		-	9.9	-	
	V_R=400V,f=1MHz		-	6.2		
Capacitance stored energy	V_R=400V	Ec	-	0.8	-	μJ
Thermal Resistance		$R_{\theta JC}$	-	3.26	-	℃/W

Characteristics Curve

Fig.1 Forward Characteristics

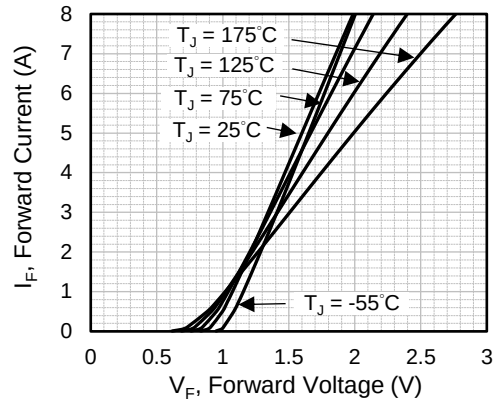


Fig.2 Reverse Characteristics

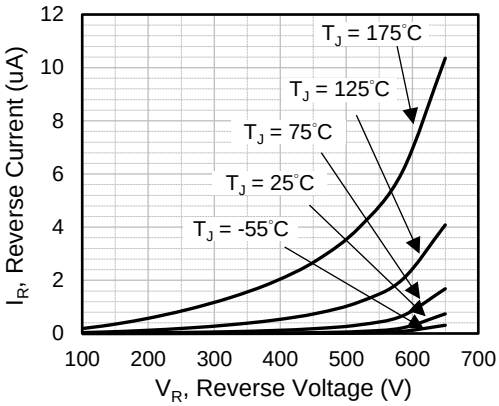


Fig.3 Power Derating Curve

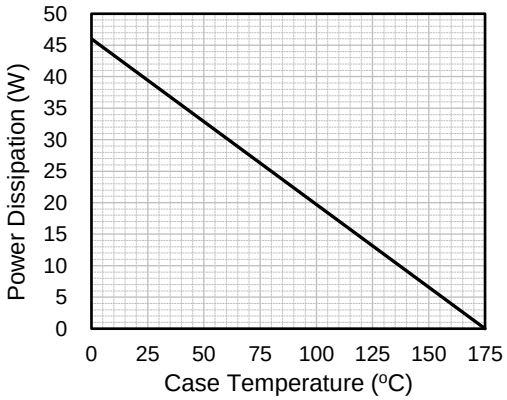


Fig.4 Current Derating Curve

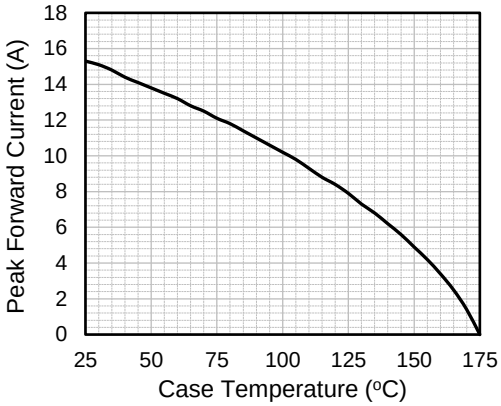


Fig.5 Typical Junction Capacitance

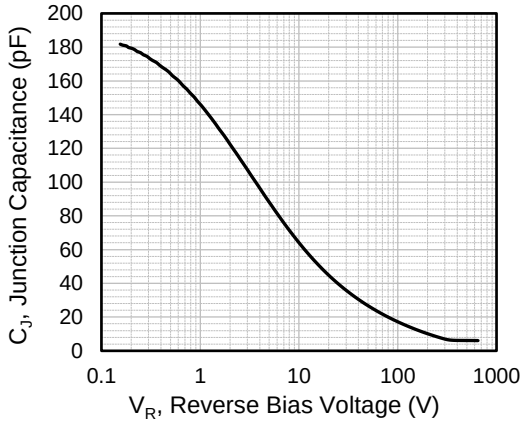
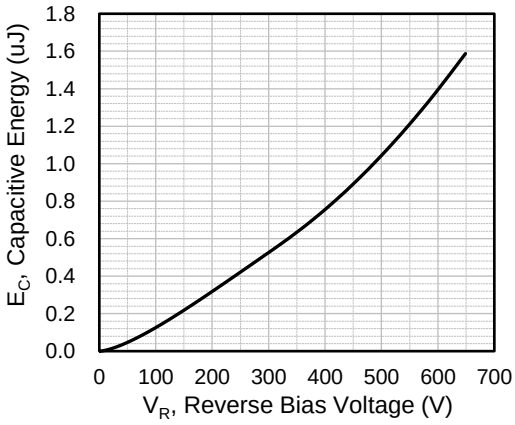
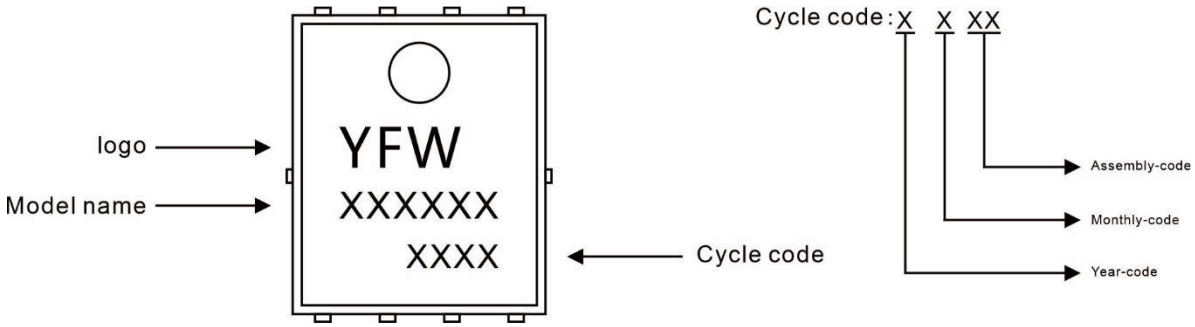


Fig.6 Capacitance Stored Energy



Marking Diagram

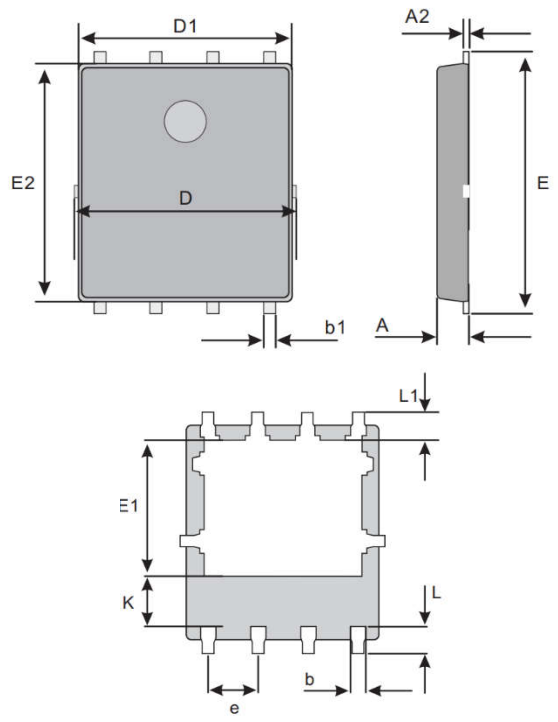


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWD304065NT	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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