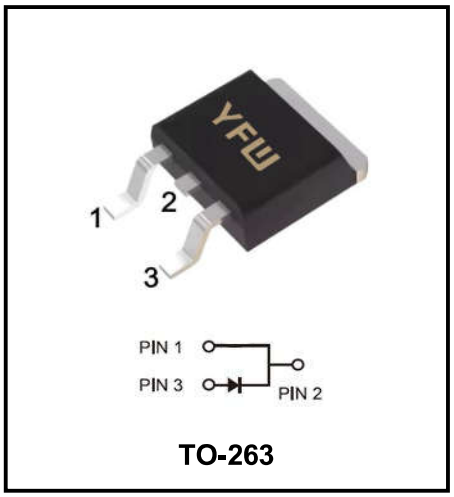
SIC SCHOTTKY BARRIER DIODE

Reverse Voltage - 1200V

Forward Current - 5A



TO-263

FEATURES

- Reverse withstand voltage 1200V
- Zero reverse recovery current
- High working frequency
- Switch characteristics are not affected by temperature
- Fast switching speed
- Positive temperature coefficient of positive pressure drop

ADVANTAGES

- Very low switching loss
- Higher efficiency
- Low dependence of the system on the heat sink
- No thermal collapse in parallel devices

APPLICATION

- Switching mode power supply, AC/DC converter
- Power factor correction
- Motor drive
- PV inverter and wind turbine

Absolute Maximum Rating (Ta =25℃,unless otherwise speciied)

Parameter	Test conditions	Symbol	Value	Unit
Peak repetitive reverse voltage		V_{RRM}	1200	V
Working Peak Reverse voltage		V_{RWM}	1200	V
DC Blocking Voltage		V_{DC}	1200	V
Average rectified output current	T_C =25℃ T_C =110℃ T_C =150℃	$I_{F(AV)}$	19 9.5 5	A
Forward repetitive peak current	T_C=25℃, tP=10ms,Half Sine Wave T_C=110℃,tP=10ms,Half Sine Wave	I_{FRM}	26 18	A
Forward surge current	T_C=25℃, tP=10ms,Half Sine Wave T_C=110℃,tP=10ms,Half Sine Wave	I_{FSM}	46 36	A
Power dissipation	T_C=25℃ T_C=100℃	P_{tot}	100 43	W
Junction temperature		T_J	-55 ~ +175	℃
Storage temperature		T_{STG}	-55 ~ +175	℃
Typical Thermal Resistance - Junction to Case		$R_{\theta JC}$	1.6	℃/W

Electrical Characteristics unless otherwise specified

Parameter		Symbol	Value			Unit
Forward Voltage Drop(Note2)			Min	Typ	Max	
at I_F=5A	T_j=25°C		-	1.4	1.8	V
	T_j=175°C		-	1.9	3.0	
Maximum Reverse Current at V_R=1200V	T_j=25°C	I_R	-	20	150	μA
	T_j=175°C		-	40	300	
Total capacitive charge	V_R = 800V, I_F = 5A di/dt=200A/μs, T_j=25℃	Q_C	-	23	-	nC
Total capacitance	V_R = 0V, T_j=25℃, f=1MHz	C	-	390	-	pF
	V_R = 400V, T_j=25℃, f=1MHz		-	27	-	
	V_R = 800V, T_j=25℃, f=1MHz		-	20	-	
Capacitance stored energy	V_R = 800V	E_C	-	8.0	-	μJ

Note:This is a majority carrier diode, so there is no reverse recovery charge.

Typical Characteristics

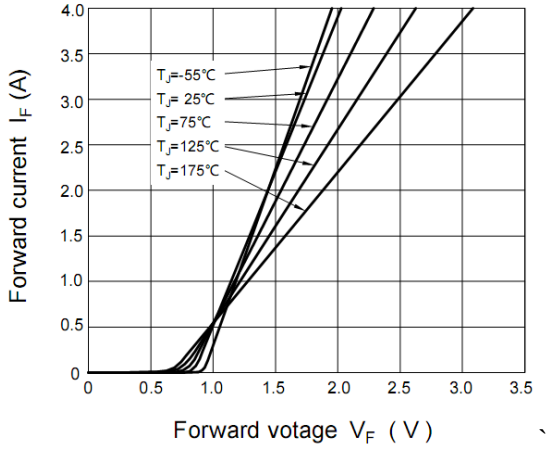


Figure 1. Forward Characteristics

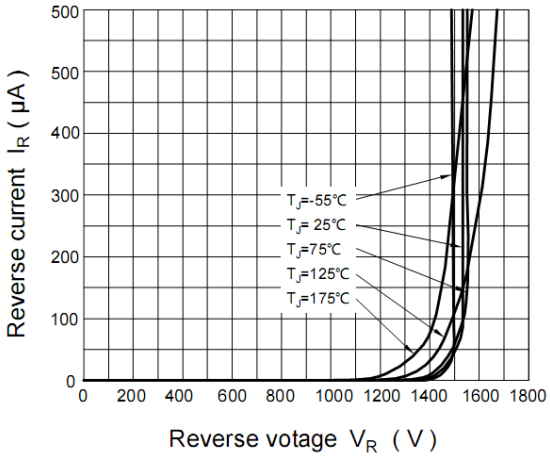


Figure 2. Reverse Characteristics

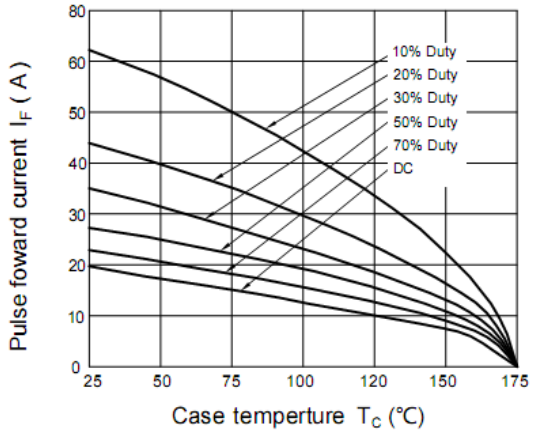


Figure 3. Current Derating

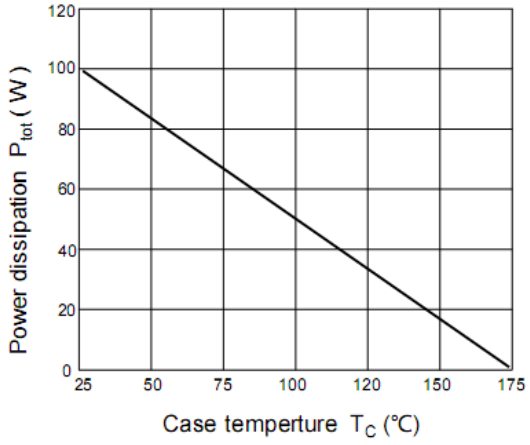


Figure 4. Power Derating

Typical Characteristics

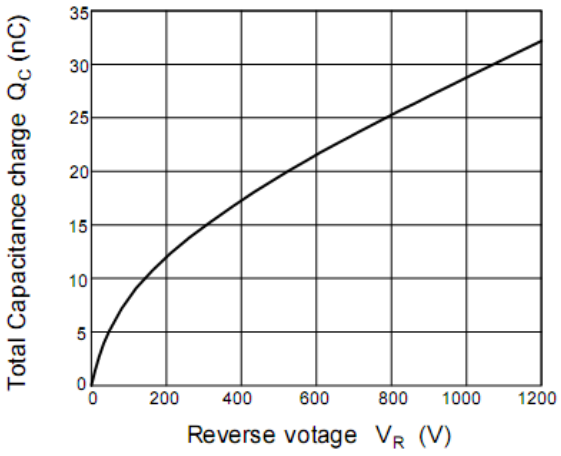


Figure 5. Total Capacitance charge vs. reverse voltage

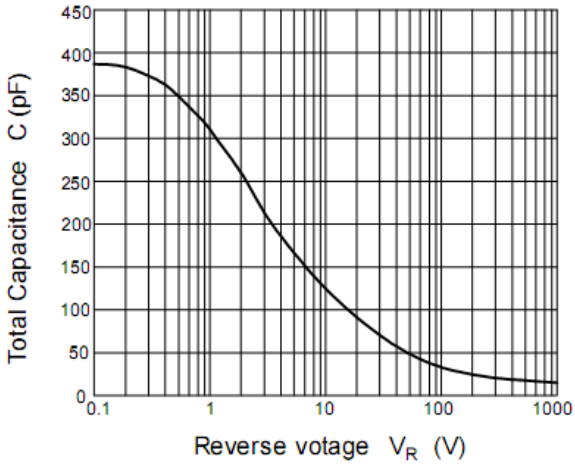


Figure 6. Capacitance vs. reverse voltage

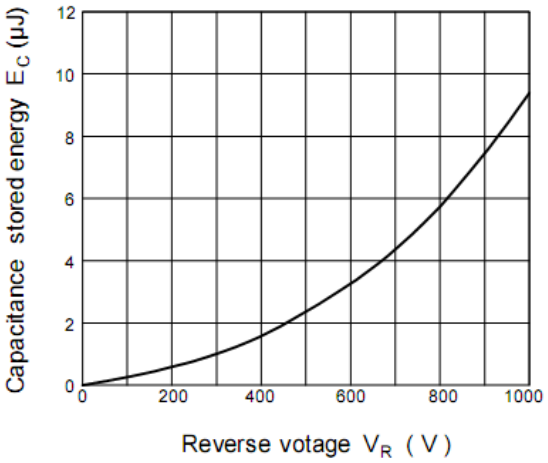


Figure 7. Capacitance stored energy

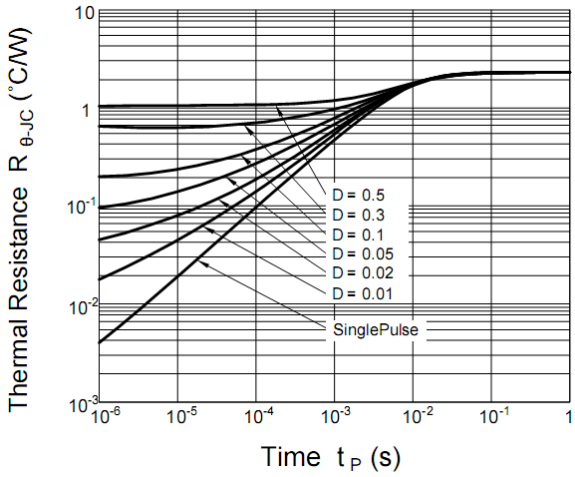
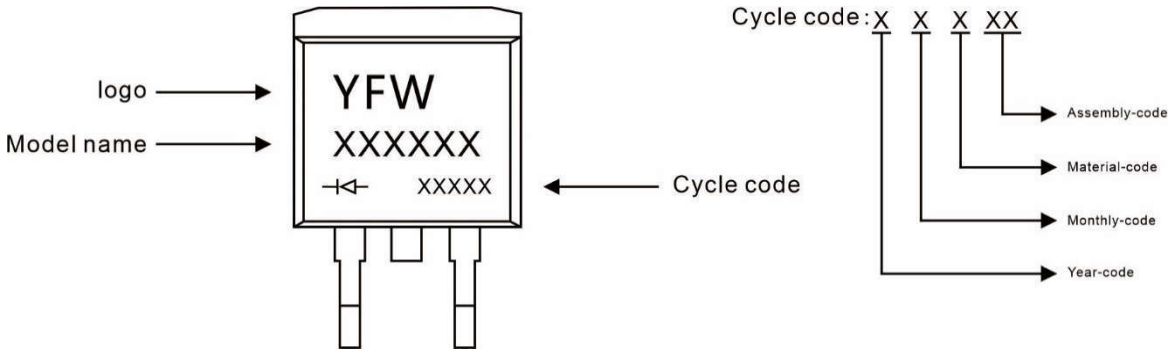


Figure 8. Transient Thermal Impedance

Marking Diagram

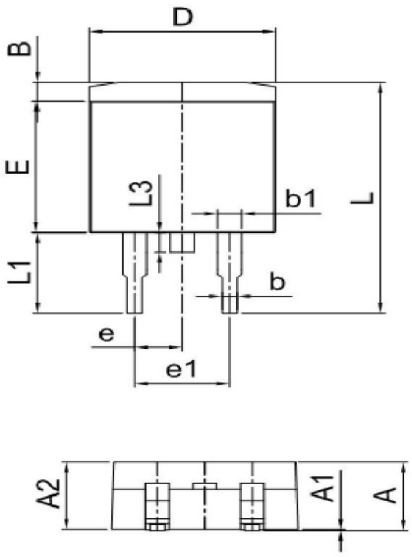


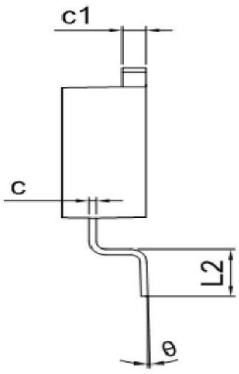
Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWD305120DC	TO-263	0.04oz(1.16g)	800pcs/reel	1600pcs/box 8000pcs/Carton

Package Dimensions

TO-263





Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A1	0.00	0.15	0.000	0.006
A2	4.30	4.55	0.169	0.179
B	1.10	1.50	0.043	0.059
b	0.70	0.90	0.028	0.035
b1	1.20	1.50	0.047	0.059
c	0.30	0.60	0.012	0.024
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.50	8.90	0.335	0.350
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
L	15.00	15.30	0.591	0.602
L1	5.20	5.40	0.205	0.213
L2	2.40	2.60	0.094	0.102
L3	1.60	1.80	0.063	0.071

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