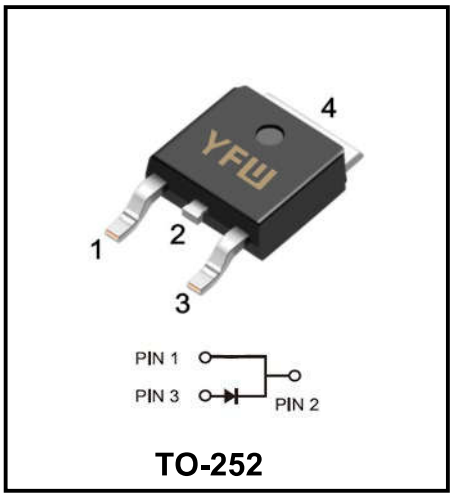
SIC SCHOTTKY BARRIER DIODE

Reverse Voltage - 1200 V

Forward Current - 10A



TO-252

FEATURES

- 1200V Schottky Rectifier
- Zero Reverse Recovery Current
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching

APPLICATIONS

- Replace Bipolar with Unipolar Rectifiers
- Essentially No Switching Losses
- Higher Efficiency
- Reduction of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway

BENEFITS

- High-speed switching
- Low heat dissipation requirements
- Reduced EMI
- High-reliability

Maximum Ratings at Ta=25°C unless otherwise specified

Parameter	Test Conditions	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	T_C = 25℃	V_{RRM}	1200	V
Continuous Forward Current for Rth(j-c,max)	T_C = 25℃	I_F	37	A
	T_C = 135℃		18	
	T_C = 150℃		10	
Non-Repetitive Forward Surge Current, Sine Half-Wave	T_C = 25℃, tp = 10ms	I_{FSM}	52	A
	T_C = 110℃, tp = 10ms		43	
Repetitive Forward Surge Current, Sine Half-Wave	T_C = 25℃, tp = 10ms	I_{FRM}	75	A
	T_C = 110℃, tp = 10ms		62	
Power Dissipation	T_C=25℃	P_{tot}	234	W
	T_C=110℃		102	
Operating Temperature Range	-	T_J	-55 to +175	℃
Storage Temperature Range	-	T_{STG}	-55 to +175	℃
Typical Thermal Resistance (Note1)	-	$R_{\theta JC}$	0.64	℃/W

Note1:Pulse test: 300 μs pulse width, 2 % duty cycle

Electrical Characteristics unless otherwise specified

Parameter		Symbol	Value			Unit
Forward Voltage Drop(Note2)			Min	Typ	Max	
I_R = 100μA		V_{DC}	1200	-	-	V
at I_F=10A	T_A=25°C	V_F	-	1.4	1.8	V
	T_A=175°C		-	2.1	3	
Maximum Reverse Current at V_R =1200V	T_A=25°C	I_R	-	2.4	250	μA
	T_A=175°C		-	73	350	
Total capacitive charge	V_R = 800V	Q_C	-	51	-	nC
Total capacitance	V_R = 0V, f = 1MHz	C	-	770	-	pF
	V_R = 400V, f = 1MHz		-	47	-	
	V_R = 800V, f = 1MHz		-	46	-	
Capacitance stored energy	V_R = 800V	E_C	-	12.6	-	μJ

Note2:Pulse test: 300 μs pulse width, 1 % duty cycle

RATINGS AND CHARACTERISTIC CURVES

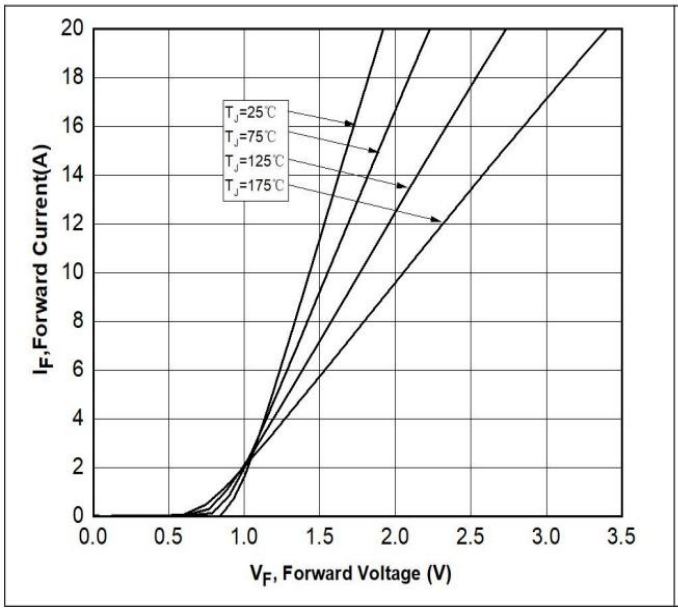


Figure 1. Forward Characteristics

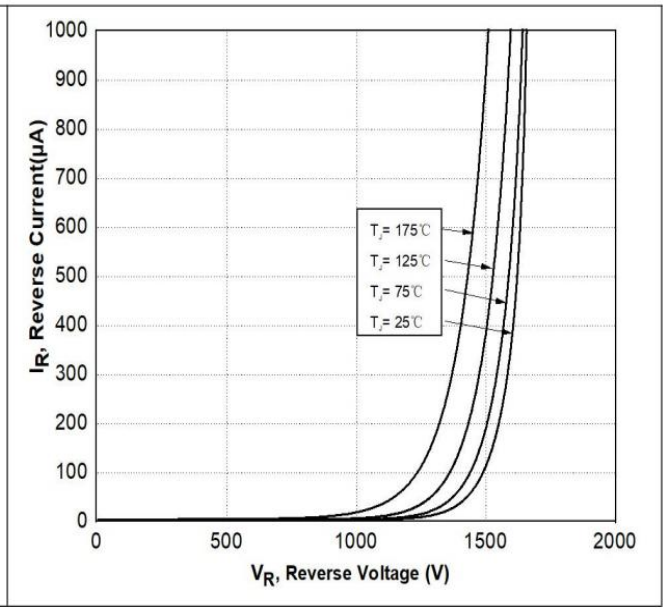


Figure 2. Reverse Characteristics

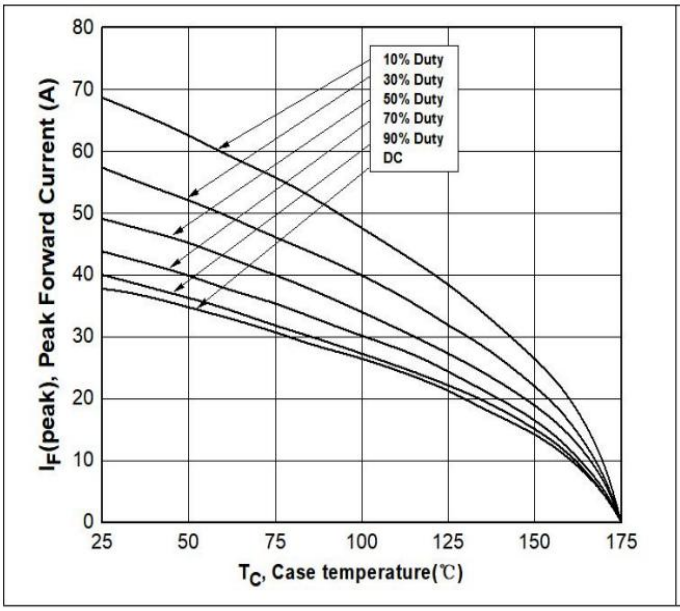


Figure 3. Current Derating

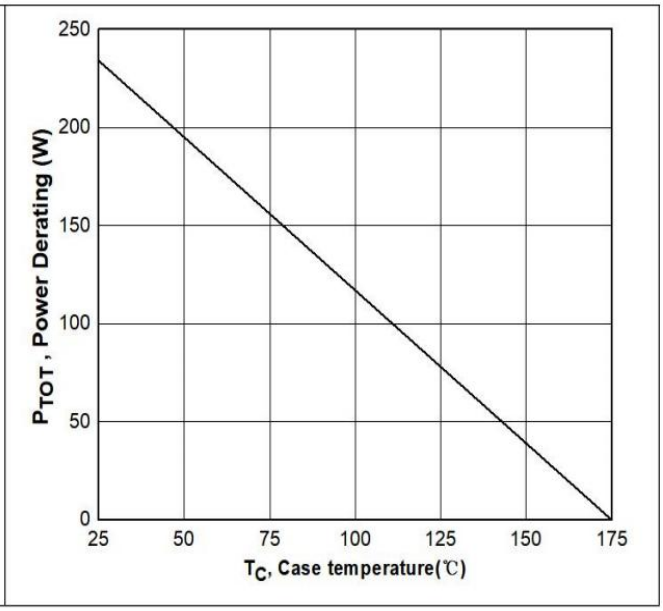


Figure 4. Power Derating

RATINGS AND CHARACTERISTIC CURVES

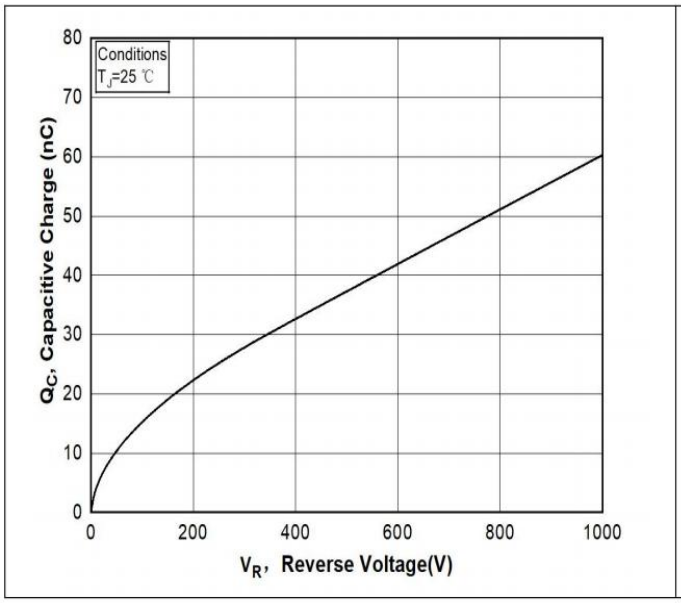


Figure 5. Capacitance Charge Vs. Reverse Voltage

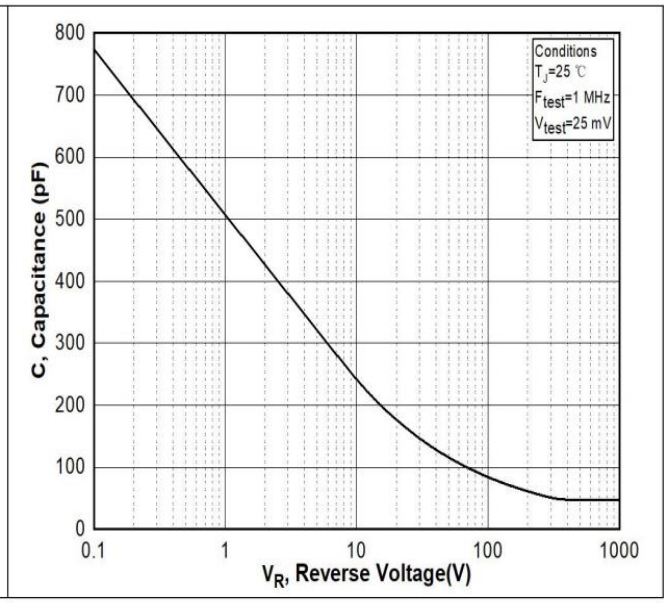


Figure 6. Capacitance Vs. Reverse Voltage

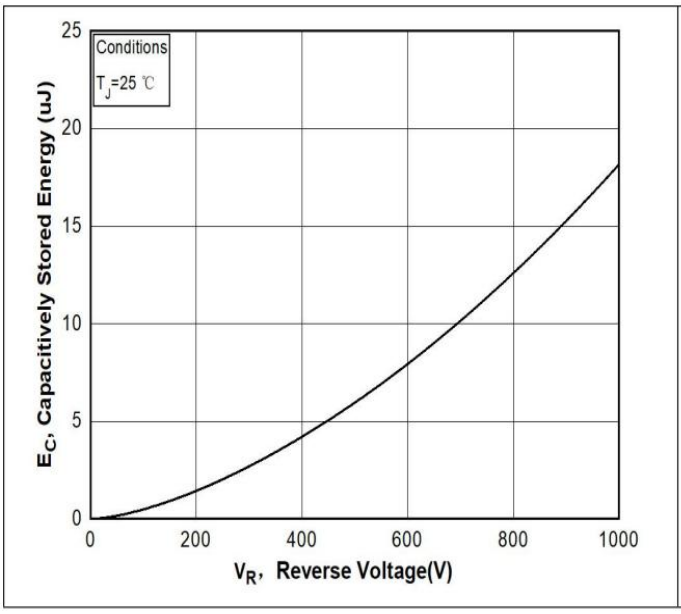


Figure 7. Capacitance Stored Energy

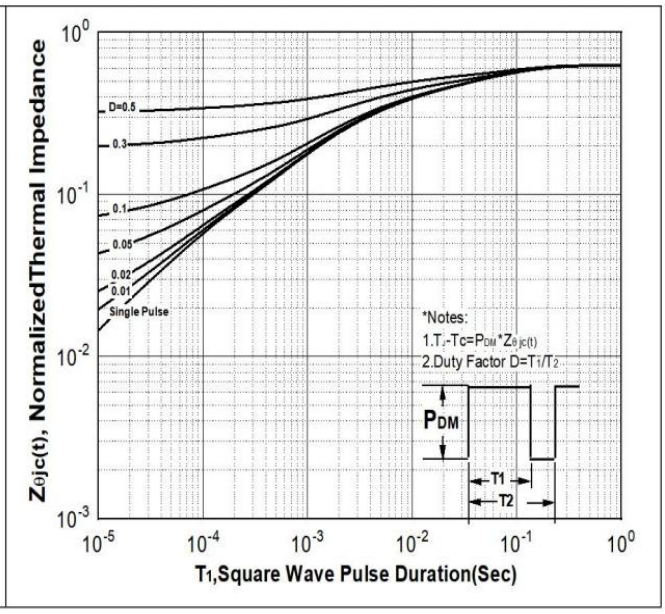
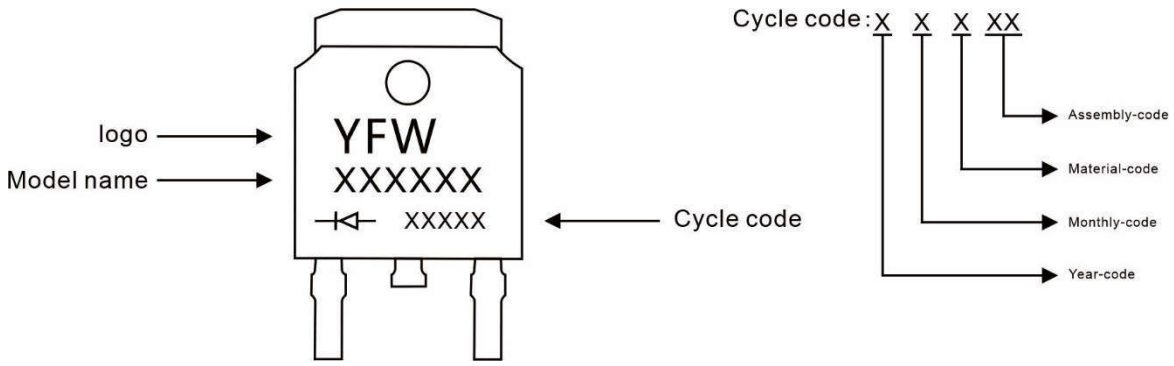


Figure 8. Transient Thermal Response Curve(Junction-to-Case)

Marking Diagram

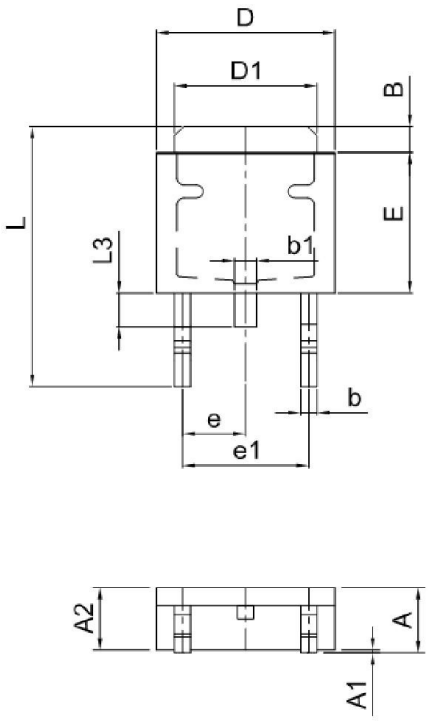


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWD310120CS	TO-252	0.011oz(0.32g)	2500pcs/reel	5000pcs/box 25000pcs/Carton

Package Dimensions

TO-252



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.098
A1	0.00	0.12	0.000	0.005
A2	2.20	2.40	0.087	0.094
B	1.20	1.60	0.047	0.063
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.35	6.65	0.250	0.262
D1	5.20	5.40	0.205	0.213
E	5.40	5.70	0.213	0.224
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	10.00	11.00	0.393	0.433
L1	2.70	3.10	0.106	0.122
L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059

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