

SIC SCHOTTKY BARRIER DIODE

Reverse Voltage - 1200 V

Forward Current - 40 A

FEATURES

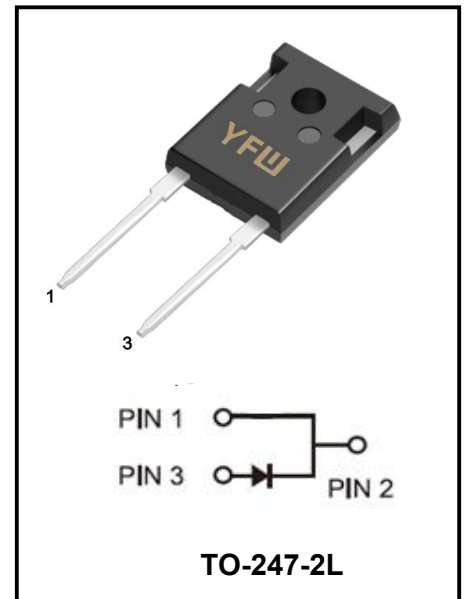
- ◆ Negligible reverse recovery
- ◆ High surge current
- ◆ Positive temperature coefficient
- ◆ Higher frequency
- ◆ Halogen-free / RoHS compliant

TYPICAL APPLICATIONS

- ◆ SMPS
- ◆ Solar inverter
- ◆ Data Center
- ◆ UPS

BENEFITS

- ◆ High-speed switching
- ◆ Low heat dissipation requirements
- ◆ Reduce size and cost of the system
- ◆ High-reliability



Maximum Ratings at Ta=25°C unless otherwise specified

Parameter	Symbols	Value	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	1200	V
Working Peak Reverse Voltage	V_{RWM}	1200	V
Maximum DC Blocking Voltage	V_{DC}	1200	V
Maximum Average Forward Rectified Current Ta=25°C	I_F	85	A
Maximum Average Forward Rectified Current Ta=110°C		53	
Maximum Average Forward Rectified Current Ta=135°C		40	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	230	A
Operating Temperature Range	T_J	175	°C
Storage Temperature Range	T_{STG}	-55 ~ +175	°C
Typical Thermal Resistance (Note1)	$R_{\theta JC}$	0.37	°C/W

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

Electrical Characteristics unless otherwise specified

Characteristics		Symbols	Value		Units
Forward Voltage Drop(Note2)			Typ	Max	
$I_R = 100\mu A$		V_{DC}	1200		V
at $I_F=40A$	TA=25°C	V_F	1.41	1.80	V
	TA=175°C		2.03	-	V
Maximum Reverse Current at $V_R=1200V$	TA=25°C	I_R	8	200	μA
	TA=175°C		55	-	μA
Total capacitive charge	$V_R = 800V$	QC	200		nC
Total capacitance	$V_R = 1V, f = 1MHz$	C	2038	-	PF
	$V_R = 400V, f = 1MHz$		173	-	
	$V_R = 800V, f = 1MHz$		141	-	

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

RATINGS AND CHARACTERISTIC CURVES

Figure 1. V_F Typical Forward Characteristics

$I_F = 0 \sim 80A$

T_{VJ} ranges from $-55\text{ }^{\circ}\text{C}$ to $175\text{ }^{\circ}\text{C}$

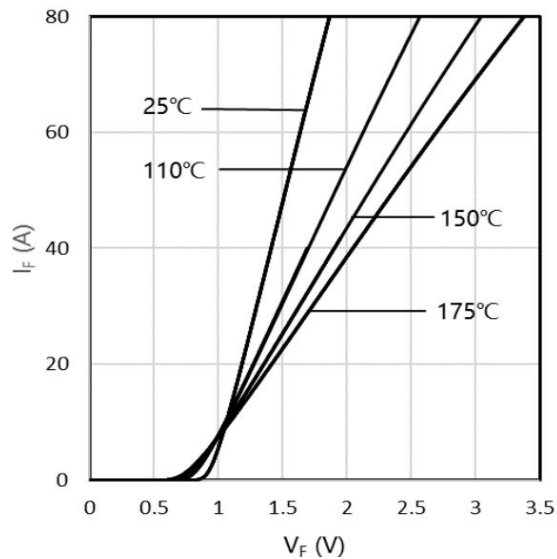


Figure 2. I_R Typical Reverse Characteristics

$V_R = 0 \sim 1200\text{ V}$

T_{VJ} ranges from $-55\text{ }^{\circ}\text{C}$ to $175\text{ }^{\circ}\text{C}$

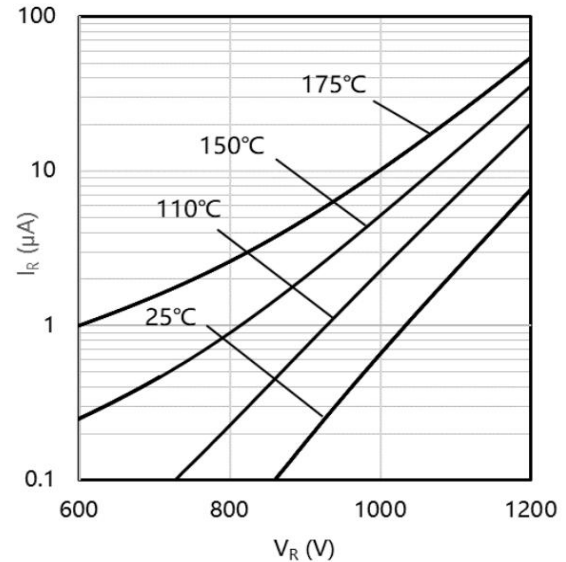


Figure 3. Total Capacitance Charge Characteristics

$V_R = 0 \sim 800\text{ V}$

$T_{VJ} = 25\text{ }^{\circ}\text{C}$

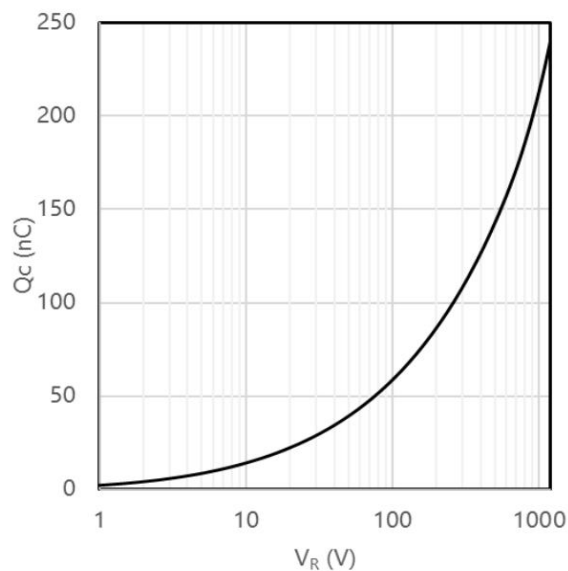
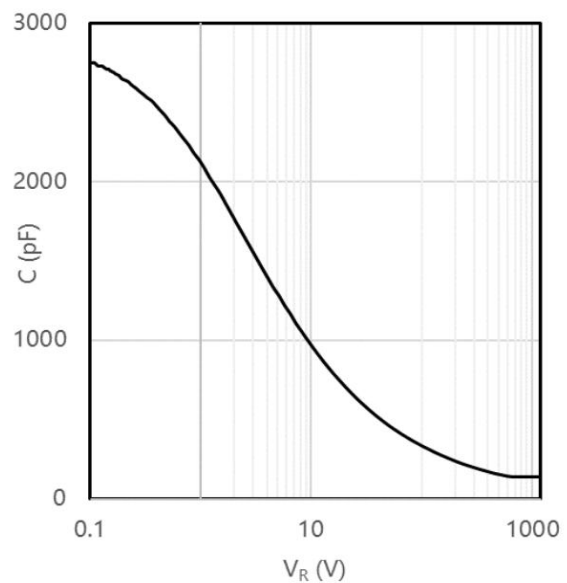


Figure 4. Total Capacitance Characteristics

$V_R = 0 \sim 1000\text{ V}$

$T_{VJ} = 25\text{ }^{\circ}\text{C}$



RATINGS AND CHARACTERISTIC CURVES

Figure 5. Typical capacitively stored energy as function of reverse voltage

$T_{VJ} = 25\text{ }^{\circ}\text{C}$

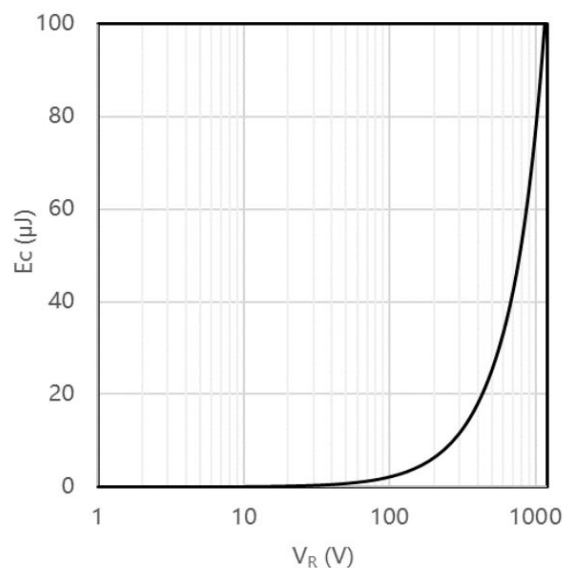


Figure 6. Power dissipation as function of case temperature

T_{VJ} ranges from $25\text{ }^{\circ}\text{C}$ to $175\text{ }^{\circ}\text{C}$

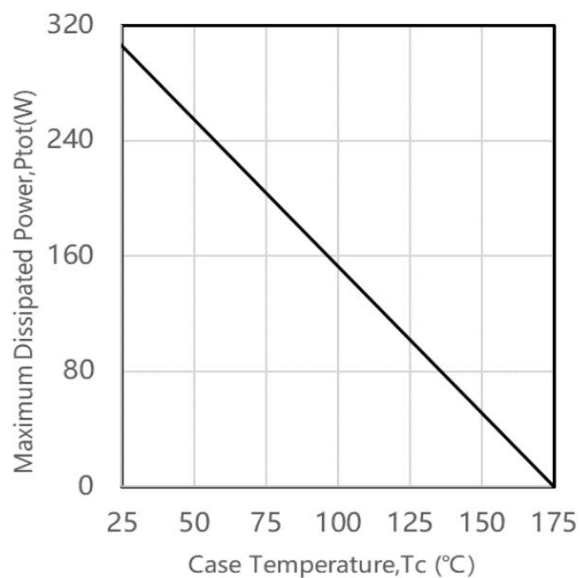
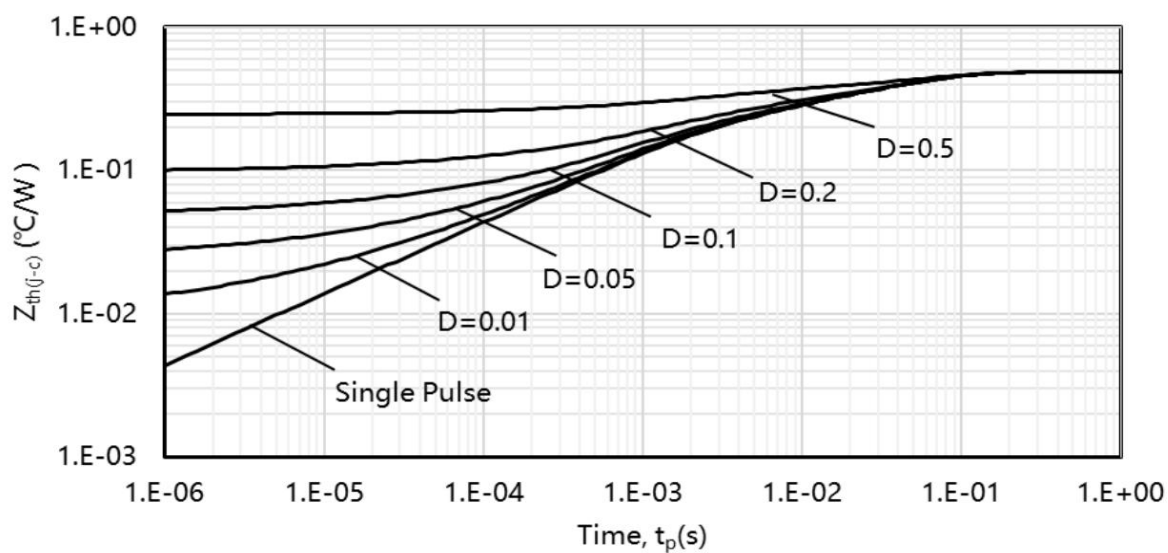
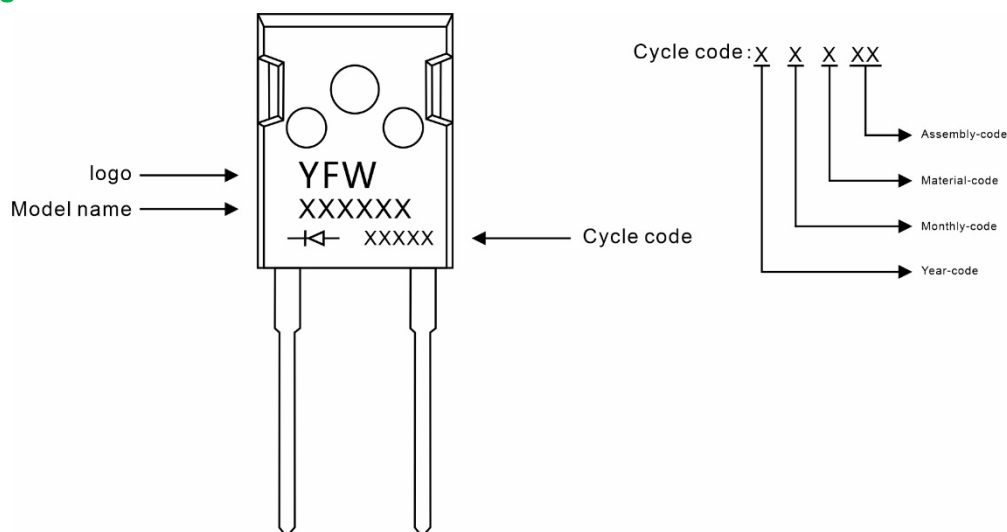


Figure 7. Max. transient thermal impedance, $Z_{th(j-c)} = f(t_p)$, parameter: $D = t_p/T$



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWD340120W	TO-247-2L	0.209oz(5.93g)	30pcs/tube	600PCS/Box 3000PCS/Carton

Package Dimensions

TO-247-2L

Symbol	Dimensions in mm		Dimensions in Inch	
	Min.	Max.	Min.	Max.
A	4.90	5.10	0.193	0.201
A1	1.90	2.10	0.075	0.083
A2	2.29	2.54	0.090	0.100
b	1.00	1.40	0.039	0.055
b1	2.00	2.20	0.079	0.087
c	0.50	0.70	0.020	0.028
D	15.75	16.05	0.620	0.632
E	20.20	20.80	0.795	0.819
e1	10.90 (BSC)		0.429 (BSC)	
F	6.05	6.25	0.238	0.246
F1	5.80	6.00	0.228	0.236
L	20.10	20.40	0.791	0.803
L1	4.05	4.35	0.159	0.171
Φ	3.50	3.70	0.138	0.146

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