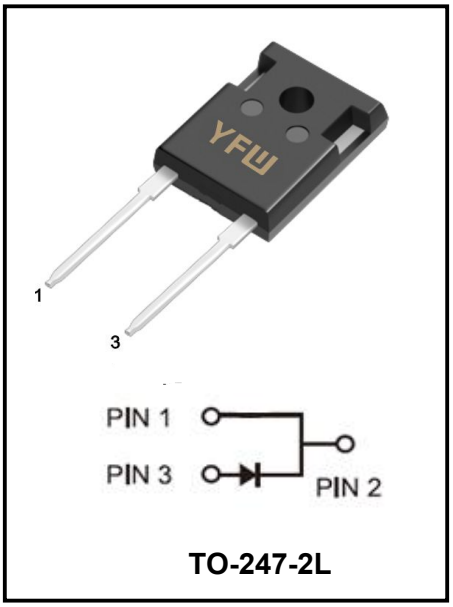
SIC SCHOTTKY BARRIER DIODE

Reverse Voltage - 1200 V

Forward Current - 20 A



TO-247-2L

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		Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	1200	V
Continuous Forward Current for Rth(j- c,max)	T_C = 25℃	I_F	56	A
	T_C = 110℃		35	
	T_C = 150℃		20	
Peak Forward Surge Current,8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)		I_{FSM}	150	A
Operating Temperature Range		T_J	175	°C
Storage Temperature Range		T_{STG}	-55 to +175	°C
Typical Thermal Resistance(Note1)		$R_{\theta JC}$	0.57	°C/W

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

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=20A	T_A=25°C	V_F	-	1.37	1.7	V
	T_A=175°C		-	1.97	-	
Maximum Reverse Current at V_R=1200V	T_A=25°C	I_R	-	4	120	μA
	T_A=175°C		-	32	-	
Total capacitive charge	V_R = 800V	Q_C	-	101	-	nC
Total capacitance	V_R = 1V, f = 1MHz	C	-	1100	-	pF
	V_R = 400V, f = 1MHz		-	94	-	
	V_R = 800V, f = 1MHz		-	79	-	
Capacitance stored energy	V_R = 800V	E_C	-	29	-	μJ

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

RATINGS AND CHARACTERISTIC CURVES

Figure 1. V_F Typical Forward Characteristics
I_F = 0~40A
T_{VJ} ranges from -55 ℃ to 175 ℃

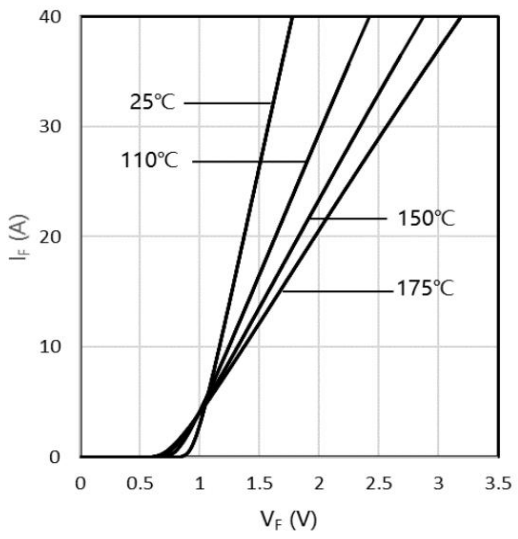


Figure 2. I_R Typical Reverse Characteristics
V_R = 0~1200 V
T_{VJ} ranges from -55 ℃ to 175 ℃

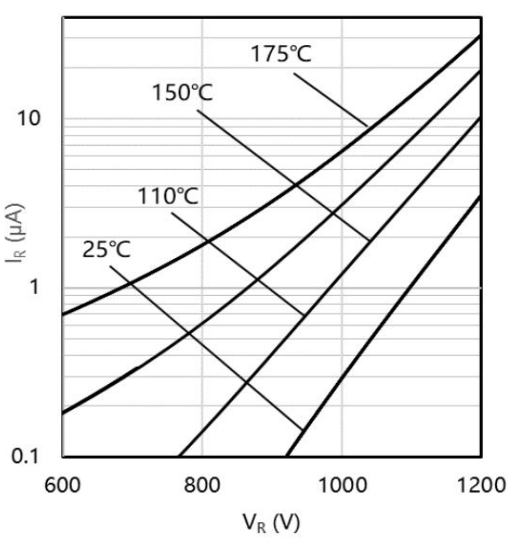


Figure 3. Total Capacitance Charge Characteristics
V_R = 0~800 V
T_{VJ} = 25 ℃

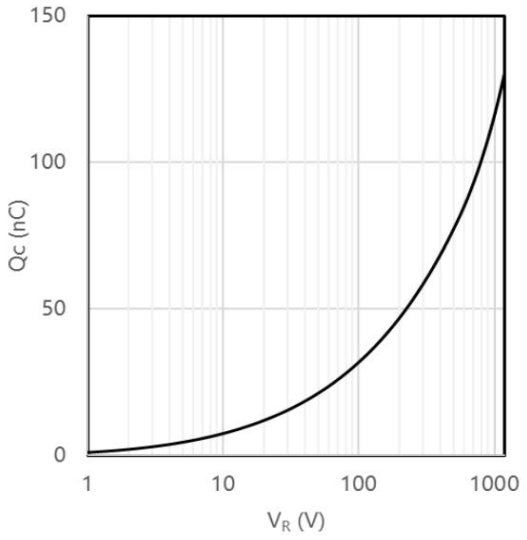
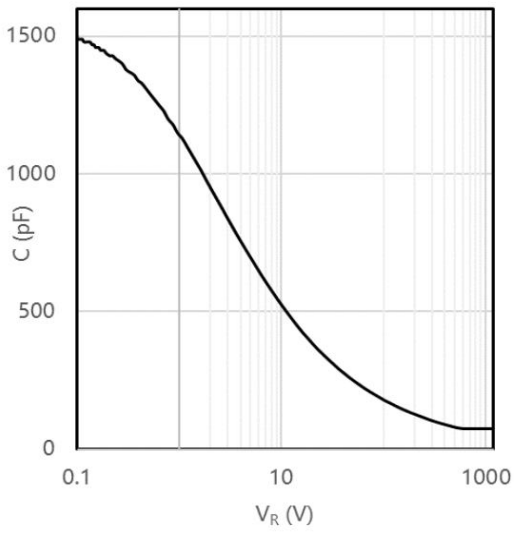


Figure 4. Total Capacitance Characteristics
V_R = 0~1000 V
T_{VJ} = 25 ℃



RATINGS AND CHARACTERISTIC CURVES

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

T_{VJ} = 25 ℃

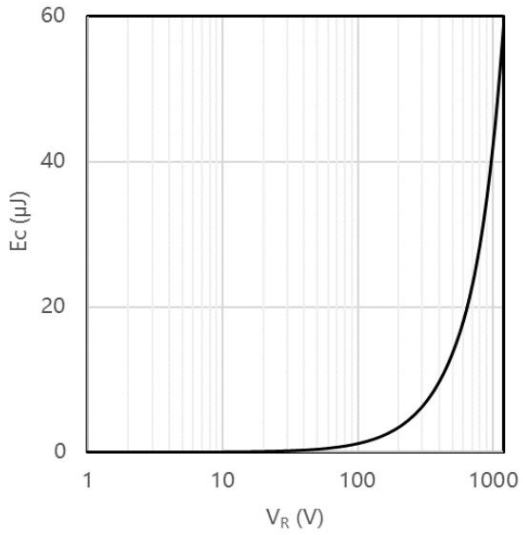


Figure 6. Power dissipation as function of case temperature

T_{VJ} ranges from 25 ℃ to 175 ℃

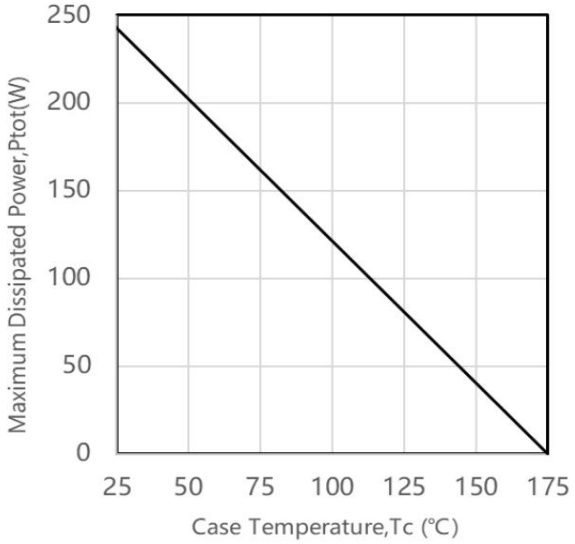
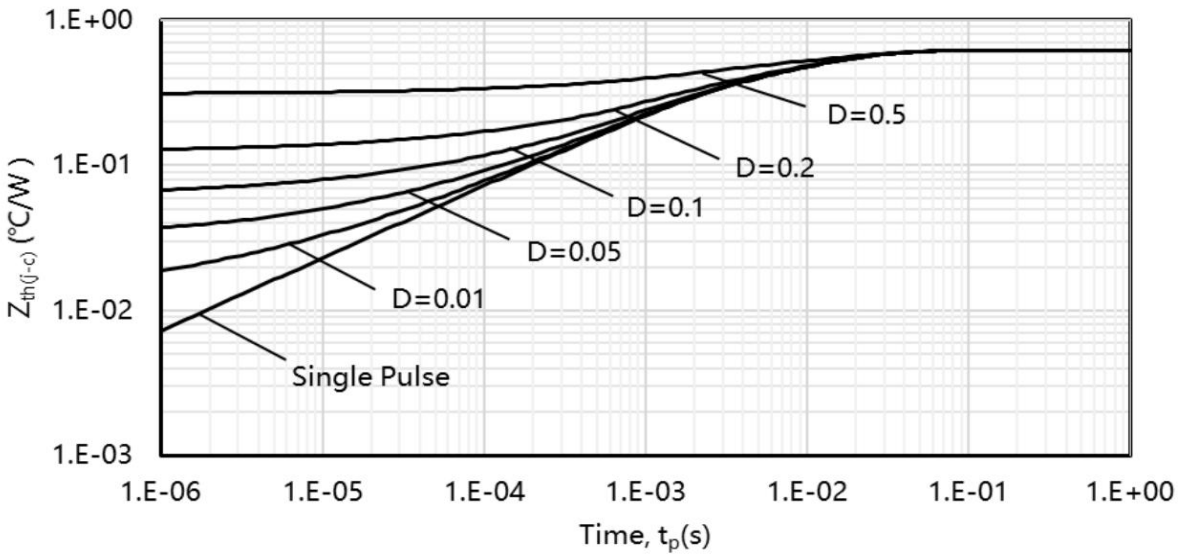
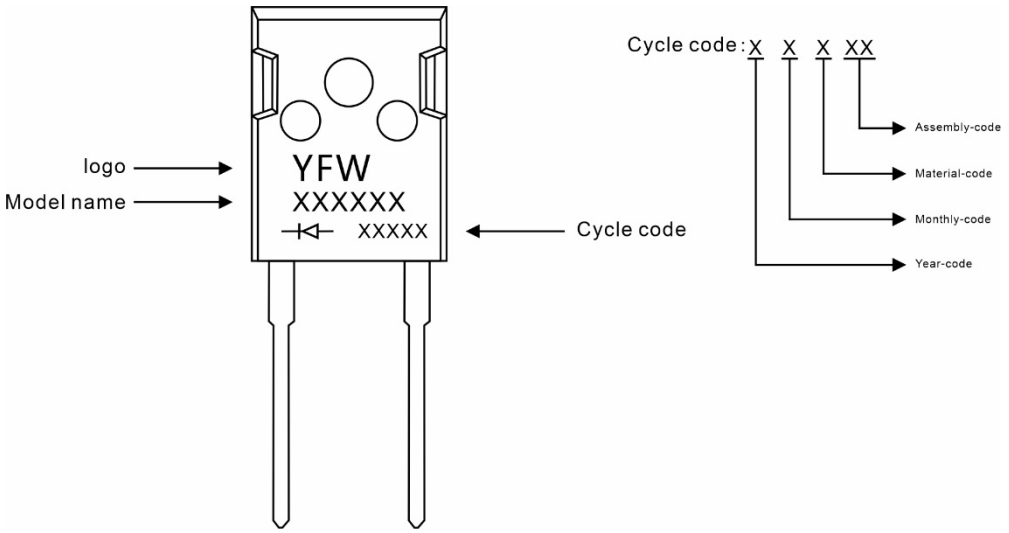


Figure 7. Max. transient thermal impedance, $Z_{th j\text{-}c}=f(t_P)$, parameter: $D=t_P/T$



Marking Diagram

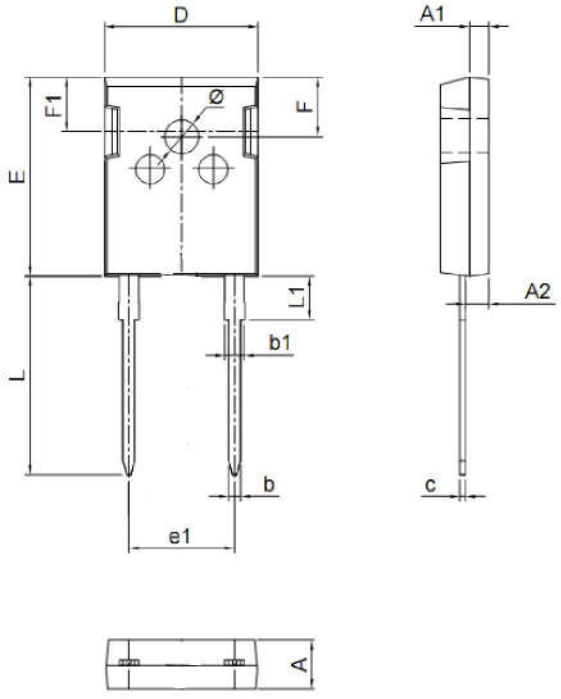


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWD320120W	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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