

SIC SCHOTTKY BARRIER DIODE

Reverse Voltage - 650 V

Forward Current - 6 A

FEATURES

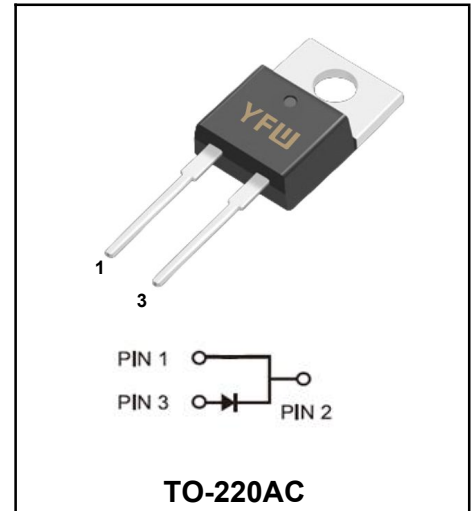
- ◆650-Volt SiC JBS Rectifier
- ◆Zero Reverse Recovery
- ◆Positive Temperature Coefficient on VF
- ◆Temperature-Independent Switching Behavior
- ◆Extremely Fast Switching
- ◆Extremely Low Leakage Current

APPLICATIONS

- ◆Uninterruptible power supply
- ◆Switch mode power supply
- ◆Power factor correction
- ◆Solar inverter

BENEFITS

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



Maximum Ratings at Ta=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	650	V
Working Peak Reverse Voltage	V_{RWM}	650	V
Maximum DC Blocking Voltage	V_{DC}	650	V
Maximum Average Forward Rectified Current TC = 25°C	I_F	18	A
Maximum Average Forward Rectified Current TC = 110°C		11	A
Maximum Average Forward Rectified Current TC = 151°C		6	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	48	A
Operating Temperature Range	T_J	175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Typical Thermal Resistance (Note1)	$R_{\theta JC}$	2.08	°C/W

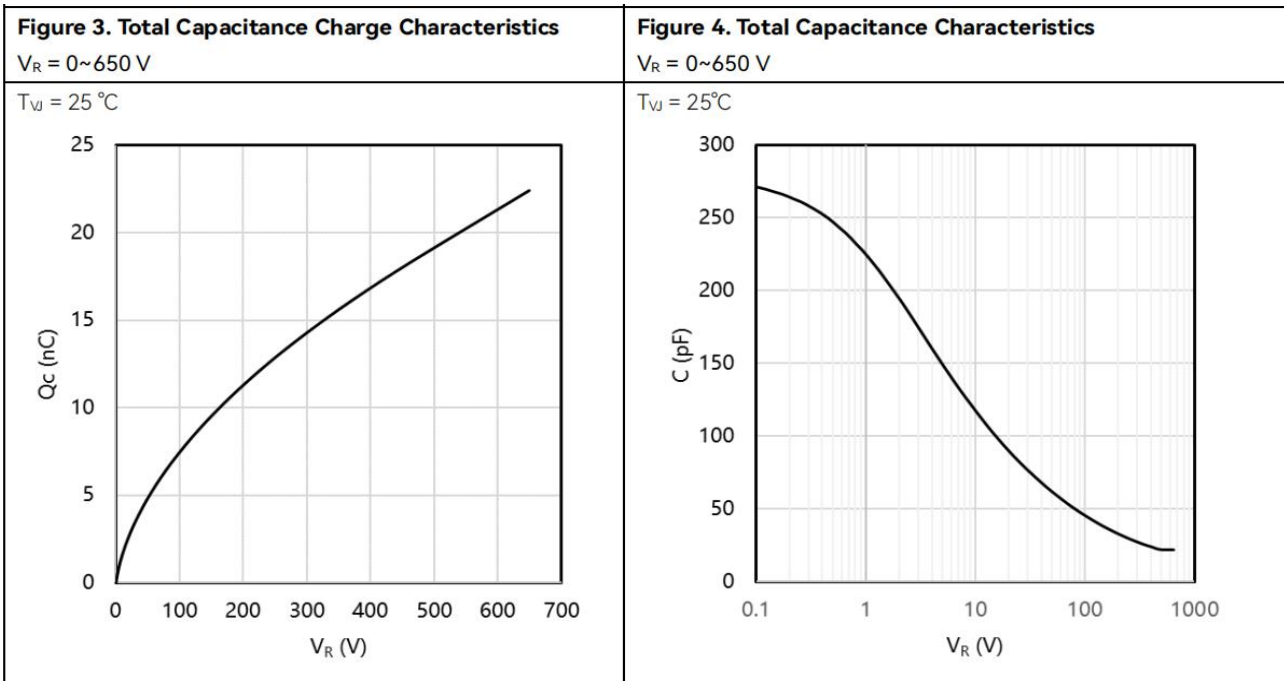
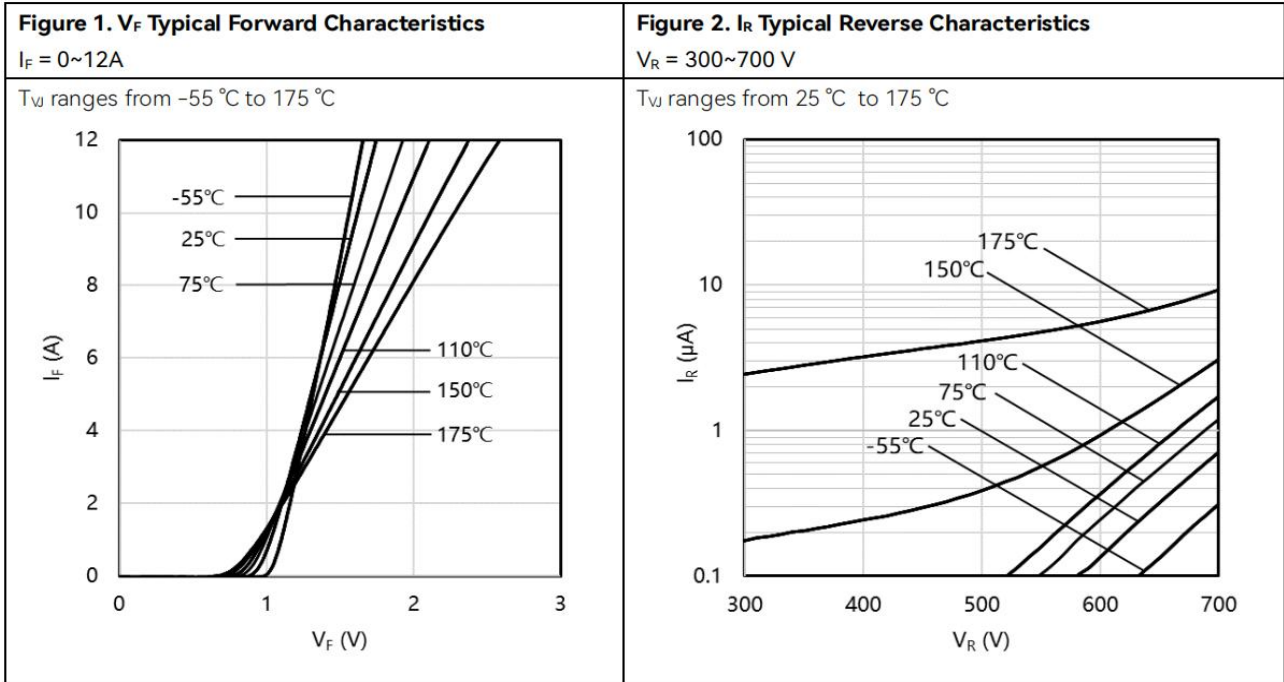
Note1: Thermal resistance from Junction to case per leg mounted on heatsink.

Electrical Characteristics unless otherwise specified

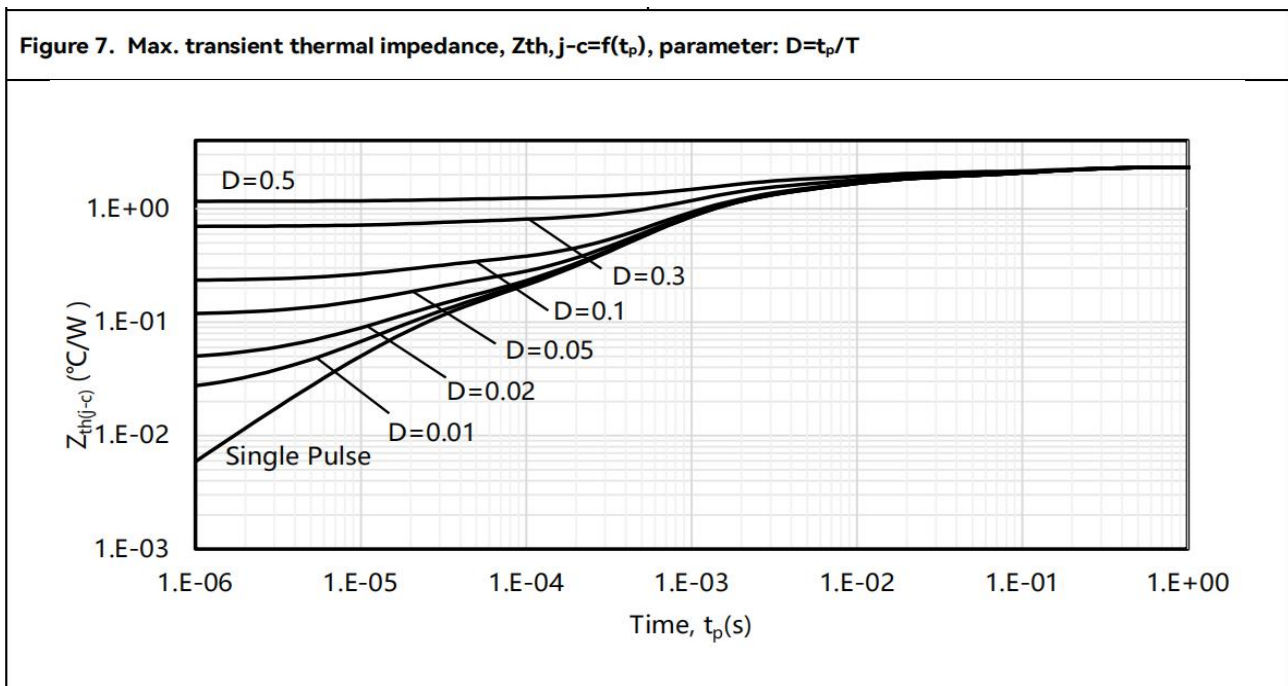
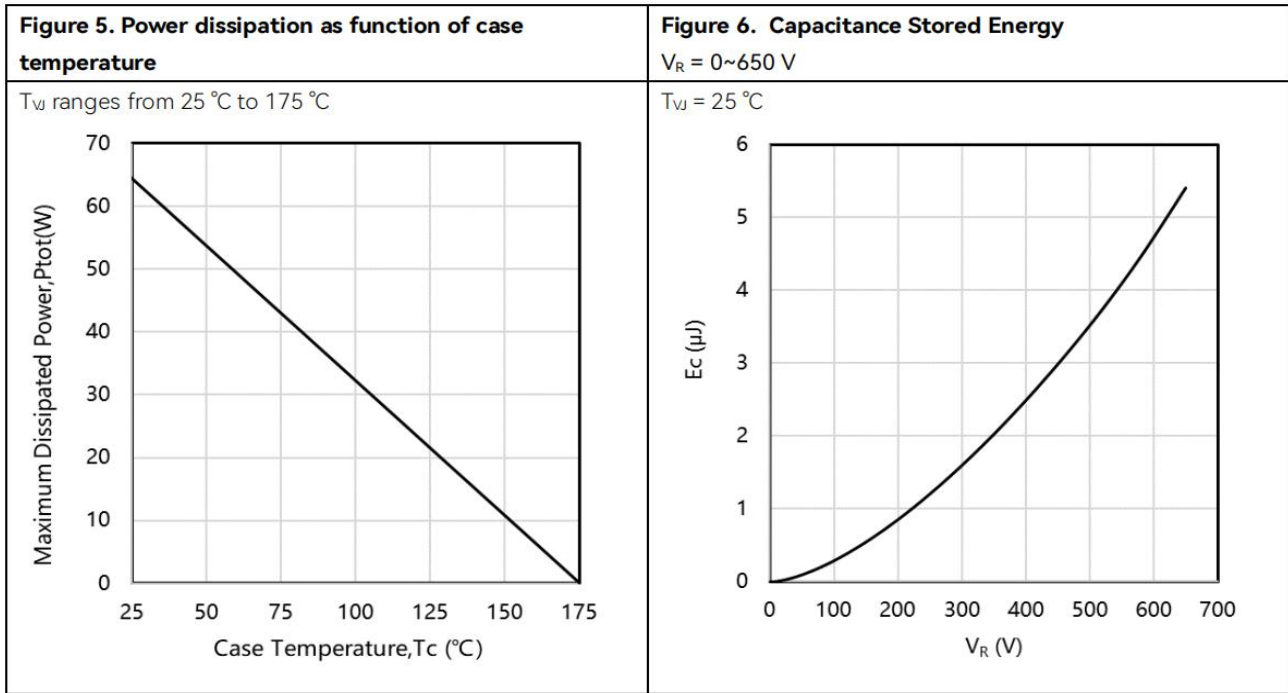
Characteristics		Symbol	Value		Unit
			Typ	Max	
Forward Voltage Drop(Note2)					
$I_R = 100\mu A$		VDC	650	-	V
at $I_F=6A$	$T_A=25^\circ C$	VF	1.37	1.65	V
	$T_A=175^\circ C$		1.70	-	
Maximum Reverse Current at $V_R=650V$	$T_A=25^\circ C$	I_R	0.5	25	μA
	$T_A=175^\circ C$		7	-	μA
Total capacitive charge	$V_R = 400V$	QC	17	-	nC
Total capacitance	$V_R = 1V, f = 1MHz$	C	227	-	pF
	$V_R = 200V, f = 1MHz$		34	-	
	$V_R = 400V, f = 1MHz$		25	-	
Capacitance stored energy	$V_R = 400V$	EC	2.5	-	μJ

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

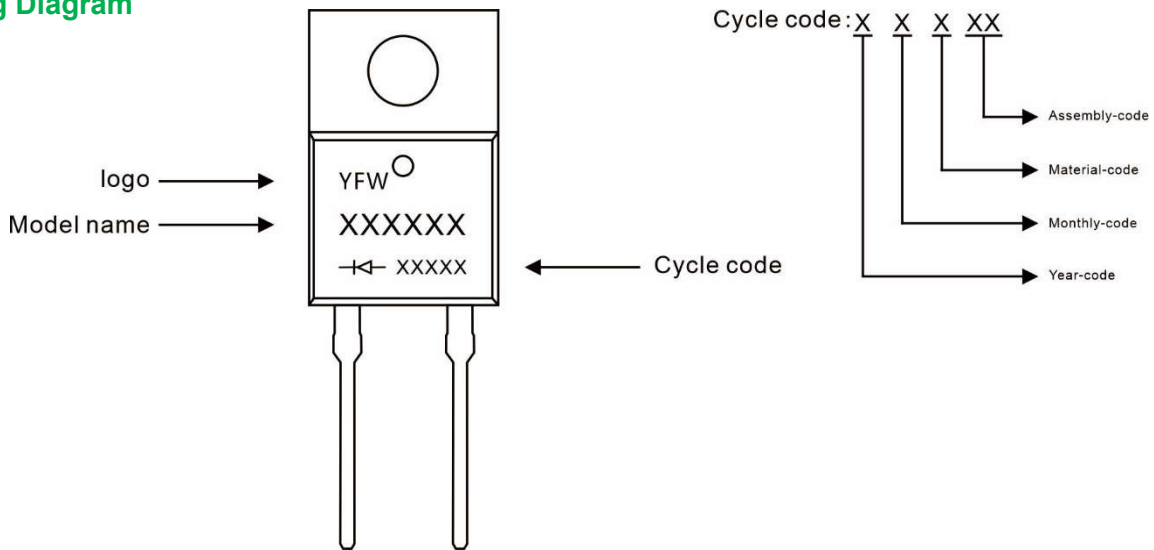
RATINGS AND CHARACTERISTIC CURVES



RATINGS AND CHARACTERISTIC CURVES



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
YFWD306065AC	TO-220AC	0.067oz(1.9g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220AC

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.34	4.67	0.171	0.184
A1	2.52	2.82	0.099	0.111
b	0.71	0.91	0.028	0.036
b1	1.17	1.37	0.046	0.054
c	0.30	0.50	0.012	0.020
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
E1	12.00	12.50	0.472	0.492
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	2.60	2.80	0.102	0.110
L	13.20	13.80	0.520	0.543
L1	3.80	4.20	0.150	0.165
Φ	3.60	3.96	0.142	0.156

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