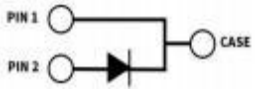
JCD30S120T6
Silicon CarbideSchottky Diode

V_{RRM}	1200	V
I_F, T_C=150℃	30	A
Q_C	128	nC

Features

- Positive temperature coefficient, for use in parallel
- Zero Reverse Recovery Current
- Low leakage current
- Temperature-Independent Switching Behavior
- Positive Temperature Coefficient for VF

Package



TO-247-2

Halogen-Free

RoHS

JCD30S120T6 = Productnumber
XXXX HXXX = Wafer-batch Packaging-batch

Benefits

- Unipolar Rectifier
- Essentially No Switching Losses
- Higher Efficiency
- Less Heat Sink Requirements
- Parallel Devices Without Thermal Runaway

Applications

- Switch Mode Power Supplies (SMPS)
- 5g base station
- High efficiency power supply
- Photovoltaic inverter
- Solar / new energy vehicles

Part Number	Package	Marking
JCD30S120T6	TO-247-2	JCD30S120T6

Maximum Ratings (T_C = 25°C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V		
V_{RSM}	Surge Peak Reverse Voltage	1200	V		
V_{DC}	DC Blocking Voltage	1200	V		
I_F	Continuous Forward Current	79 35 30	A	T_C=25°C T_C=135°C T_C=150°C	Fig. 3
I_{FRM}	Repetitive Peak Forward Surge Current	115 65	A	T_C=25°C, t_p = 10 ms, Half Sine Wave T_C=110°C, t_p = 10 ms, Half Sine Wave	
I_{FSM}	Non-Repetitive Peak Forward Surge Current	340 240	A	T_C=25°C, t_p = 8.33ms, Half Sine Wave T_C=110°C, t_p = 10ms, Half Sine Wave	
P_{tot}	Power Dissipation	355 150	W	T_C=25°C T =110°C	Fig. 4
T_J , T_{stg}	Operating Junction and Storage Temperature	-55 to +175	°C		

Electrical Characteristics (Per Leg)

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.48 2.25	1.7 2.85	V	I_F = 30 A T_J=25°C I_F = 30 A T_J=175° C	Fig. 1
I_R	Reverse Current	10 57	50 250	μA	V_R = 1200 V T_J=25°C V_R = 1200 V T_J=175°C	Fig. 2
Q_C	Total Capacitive Charge	128		nC	V_R = 800 V, I_F = 30 A di/dt = 200 A/μs T_J = 25°C	Fig. 5
C	Total Capacitance	1921 110 97		pF	V_R = 0 V, T_J = 25°C, f = 1 MHz V_R = 400 V, T_J = 25°C, f = 1 MHz V_R = 800 V, T_J = 25°C, f = 1 MHz	Fig. 6
E_C	Capacitance Stored Energy	45		μJ	V_R = 800 V	Fig. 7

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

Thermal Characteristics

Symbol	Parameter	Typ.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	0.43	°C/W	Fig. 8

Typical Performance

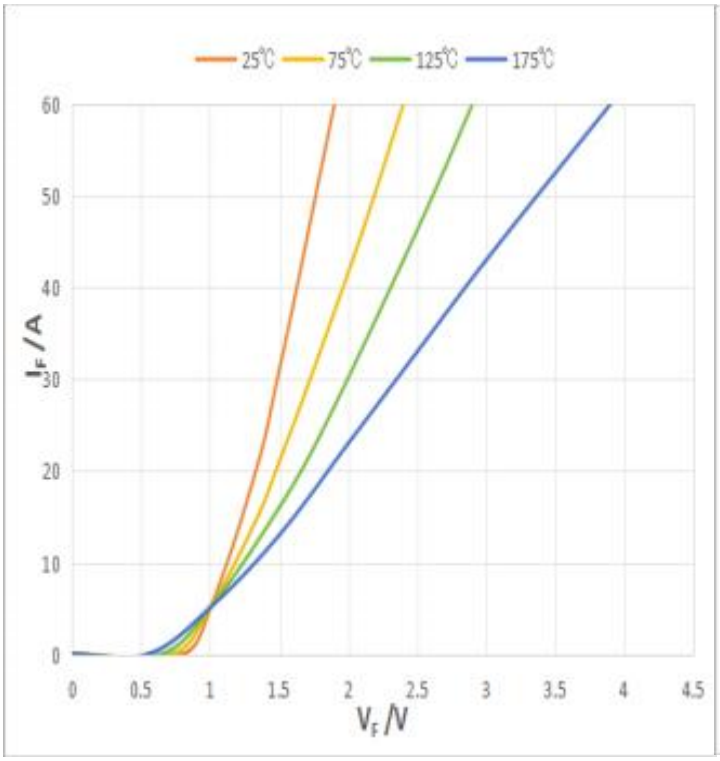


Figure 1. Forward Characteristics

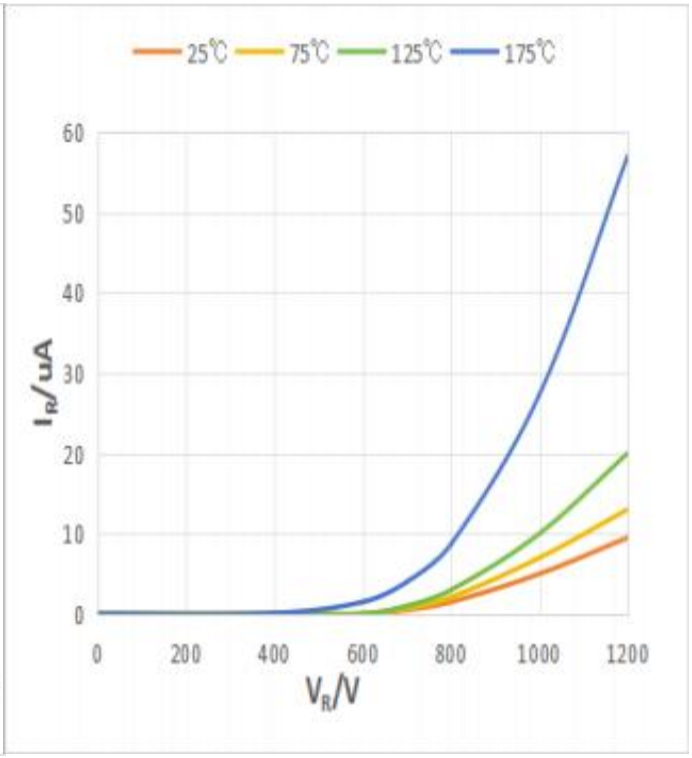


Figure 2. Reverse Characteristics

Typical Performance

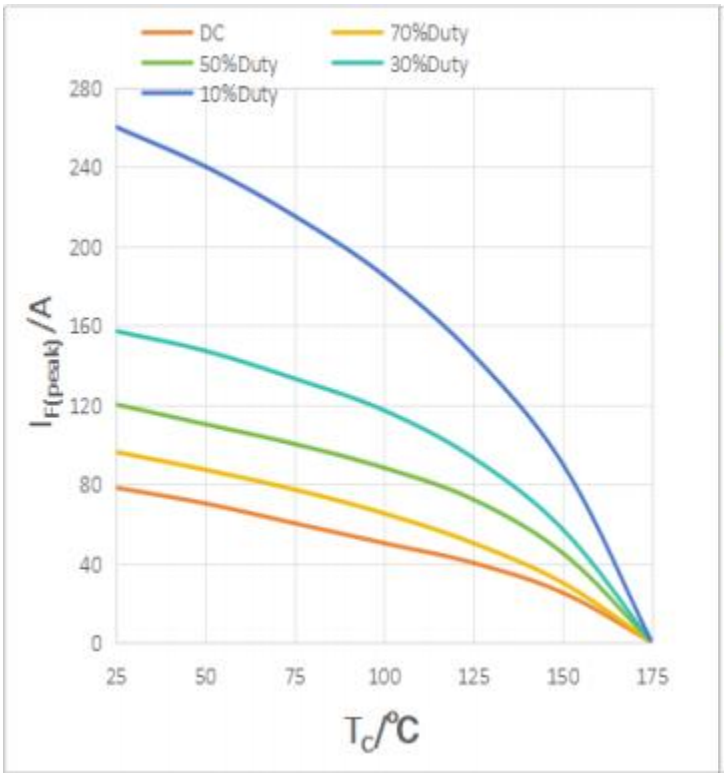


Figure 3. Current Derating

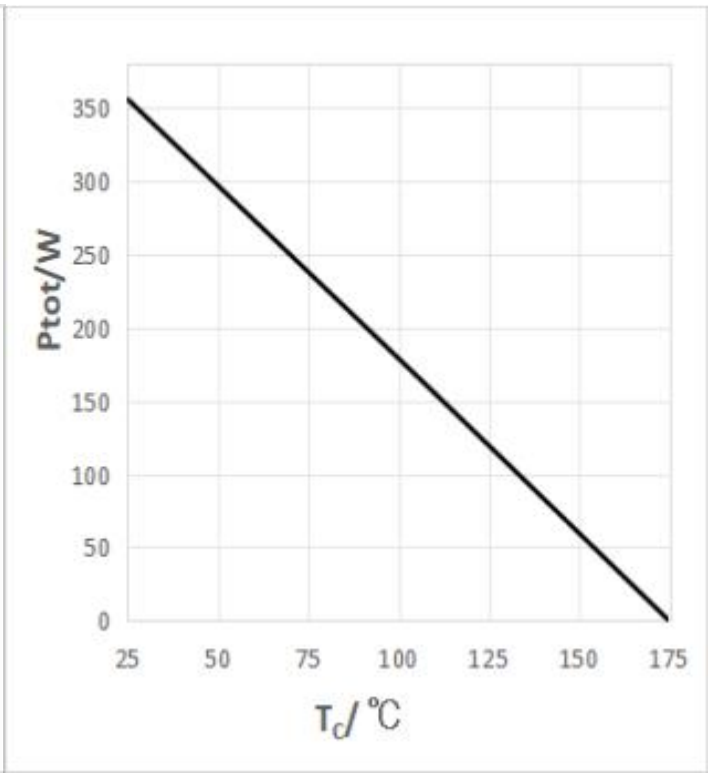


Figure 4. Power Derating

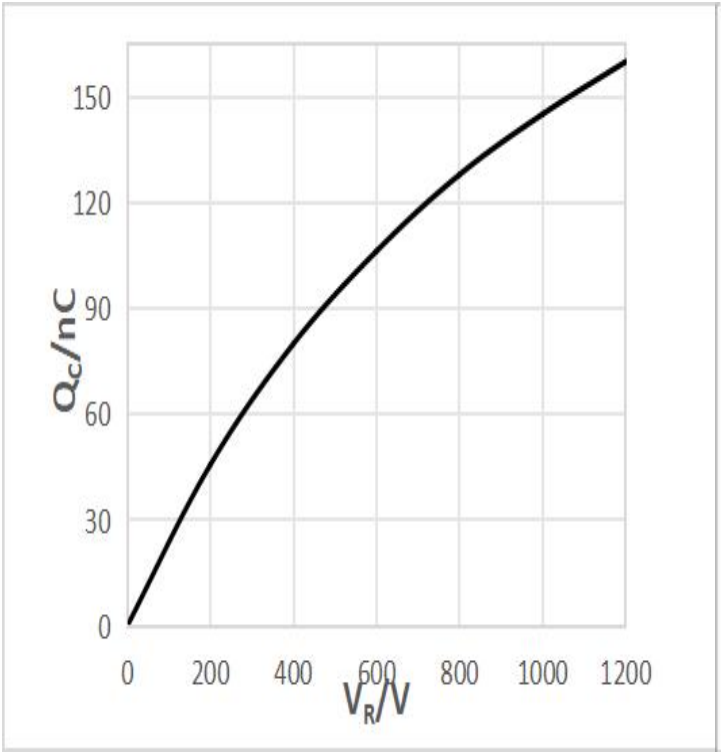


Figure 5. Total Capacitance Charge vs. Reverse Voltage

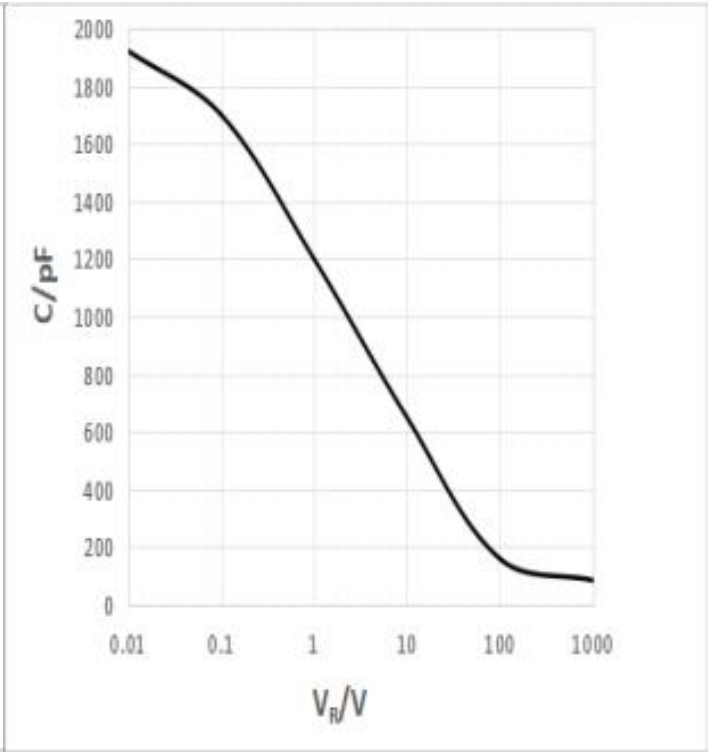


Figure 6. Capacitance vs. ReVoltage

Typical Performance

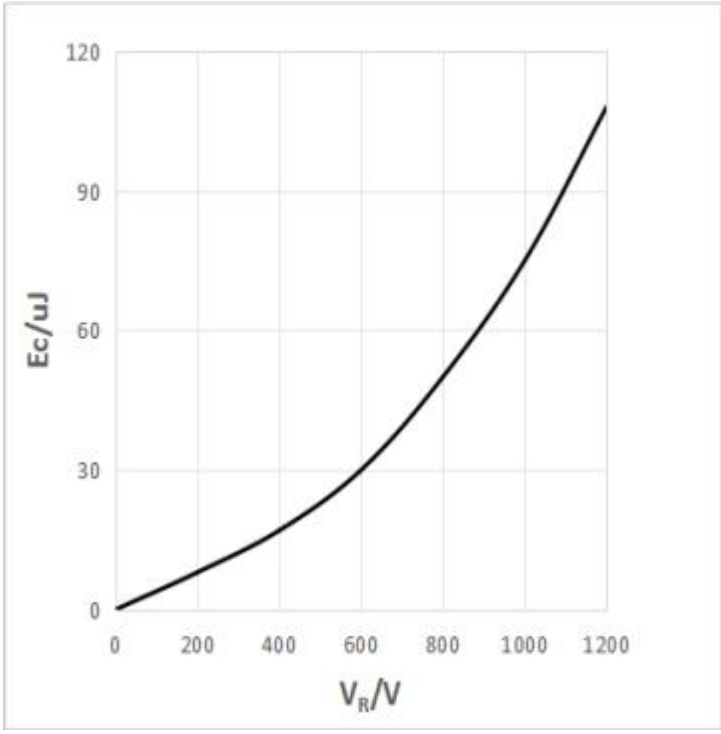


Figure 7. Capacitance Stored Energy

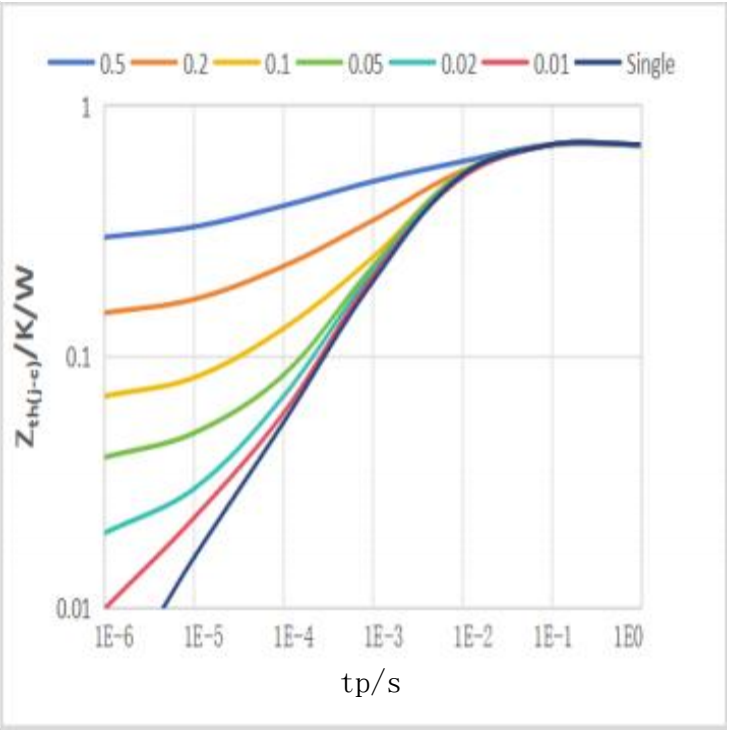
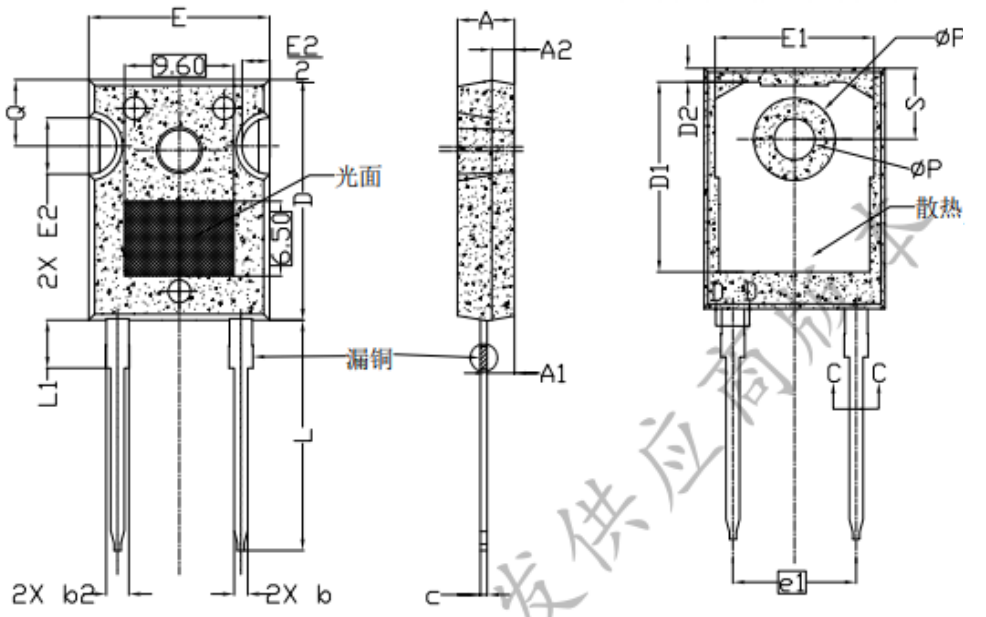


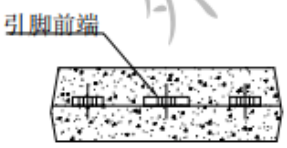
Figure 8. Transient Thermal Impedance

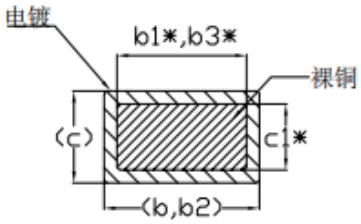
Package Dimensions

Package TO-247-2



标号	尺寸			备注
	最小值	典型值	最大值	
A	4.82	5.02	5.22	
A1	2.29	2.41	2.55	
A2	1.70	2.00	2.30	
b	1.12	1.20	1.33	
b1*	1.12	-	1.28	5
b2	1.91	2.00	2.39	4
b3*	1.91	-	2.34	5
c	0.55	0.60	0.69	
c1*	0.55	-	0.64	5
D	20.80	20.95	21.10	3
D1	16.25	16.55	17.05	
D2	0.51	1.19	1.35	
E	15.74	15.94	16.14	3
E1	13.46	14.02	14.16	
E2	4.41	4.91	5.41	
e1	10.88BSC.			
L	19.82	20.07	20.32	
L1	4.09	4.19	4.39	
øP	3.57	3.61	3.65	
øP1	7.19REF.			
Q	5.39	5.79	6.19	
S	6.02	6.17	6.32	





截面 C-C,D-D

备注:

1. 封装类型参考JEDEC TO-247.
2. 所有尺寸单位均为mm.
3. 尺寸D&E不包含塑封溢料,塑封体毛边不能超过0.127mm,尺寸测量都是在塑封体的最外层.
4. 尺寸b2不包含去除中筋之后的突出.允许突出总量不超过0.10mm.
5. 尺寸b1*&b3*&c1*仅适用于裸铜.