



## JCD10SJ12BCT

### SiC Schottky Diode

Rev.1.0

#### DESCRIPTION

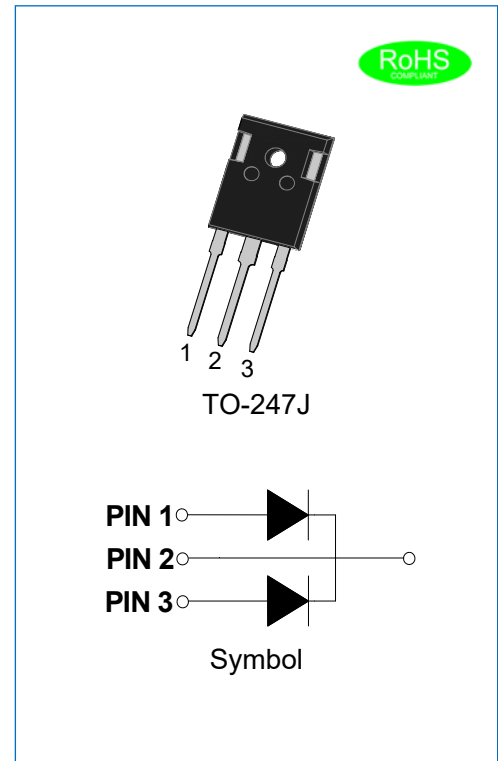
- ✧ 1200V Schottky diode
- ✧ Zero reverse recovery current
- ✧ Zero forward recovery voltage
- ✧ High frequency operation
- ✧ Switching characteristics independent of temperature
- ✧ Fast switch
- ✧ Positive temperature coefficient of forward voltage ( $V_F$ )

#### BENEFIT

- ✧ Lower switching loss
- ✧ No thermal runaway in parallel devices
- ✧ Lower heatsink dependent

#### APPLICATION

- ✧ Switch mode power supplies(SMPS)
- ✧ Boost diodes in PFC or DC/DC stages
- ✧ Free wheeling diodes in inverter stages
- ✧ AC/DC converters



#### ABSOLUTE MAXIMUM RATING (Rating at 25°C junction temperature unless otherwise specified.)

Parameter		Symbol	Value	Unit
Maximum repetitive peak reverse voltage		$V_{RRM}$	1200	V
Maximum DC blocking voltage		$V_{DC}$	1200	V
Average forward current	$T_C=160^\circ\text{C}$	$I_{F(AV)}$	5* 10**	A
Repetitive peak forward surge current	$t_P=10\text{ms}, T_C=25^\circ\text{C}$	$I_{FRM}$	25*	A
Non-repetitive peak forward surge current	$t_P=10\text{ms}, T_C=25^\circ\text{C}$	$I_{FSM}$	50*	A
Power dissipation	$T_C=25^\circ\text{C}$	$P_{tot}$	130*	W
	$T_C=110^\circ\text{C}$		56*	
Operating junction and storage temperature range		$T_j, T_{stg}$	-55 to+175	°C

Note: \*per leg, \*\*per device

**ELECTRICAL CHARACTERISTICS** (Rating at 25°C junction temperature unless otherwise specified.)

Parameter	Conditions	Symbol	Value			Unit
			Min.	Typ.	Max.	
Forward voltage	$I_F=5A, T_j=25^\circ C$	$V_F$	-	1.35	1.80	V
	$I_F=5A, T_j=175^\circ C$		-	1.91	-	
Reverse current	$V_R=1200V, T_j=25^\circ C$	$I_R$	-	1.5	120	$\mu A$
	$V_R=1200V, T_j=175^\circ C$		-	10	-	
Total capacitance	$V_R=1V, f=1MHz$	C	-	283	-	pF
	$V_R=400V, f=1MHz$		-	26	-	
	$V_R=800V, f=1MHz$		-	22	-	
Total capacitance charge	$V_R=800V, T_j=25^\circ C$	$Q_C$	-	28	-	nC
Capacitance stored energy	$V_R=800V$	$E_C$	-	9	-	$\mu J$

**THERMAL CHARACTERISTICS**

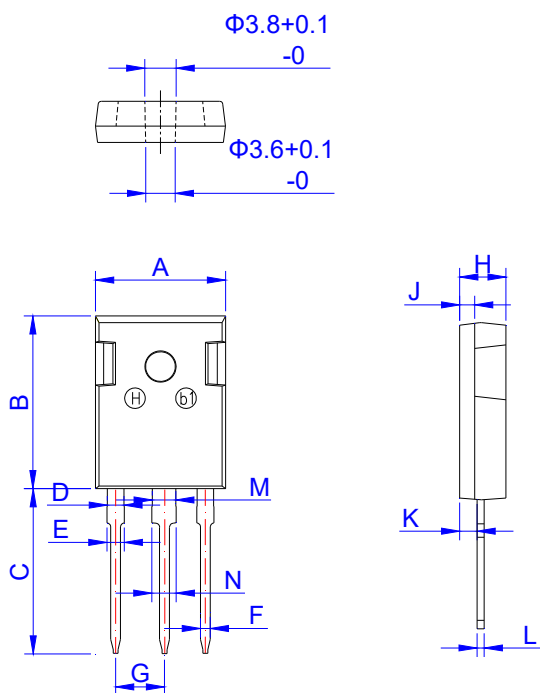
Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case	1.15*	$^\circ C/W$

Note: \*per leg

**ORDERING INFORMATION**

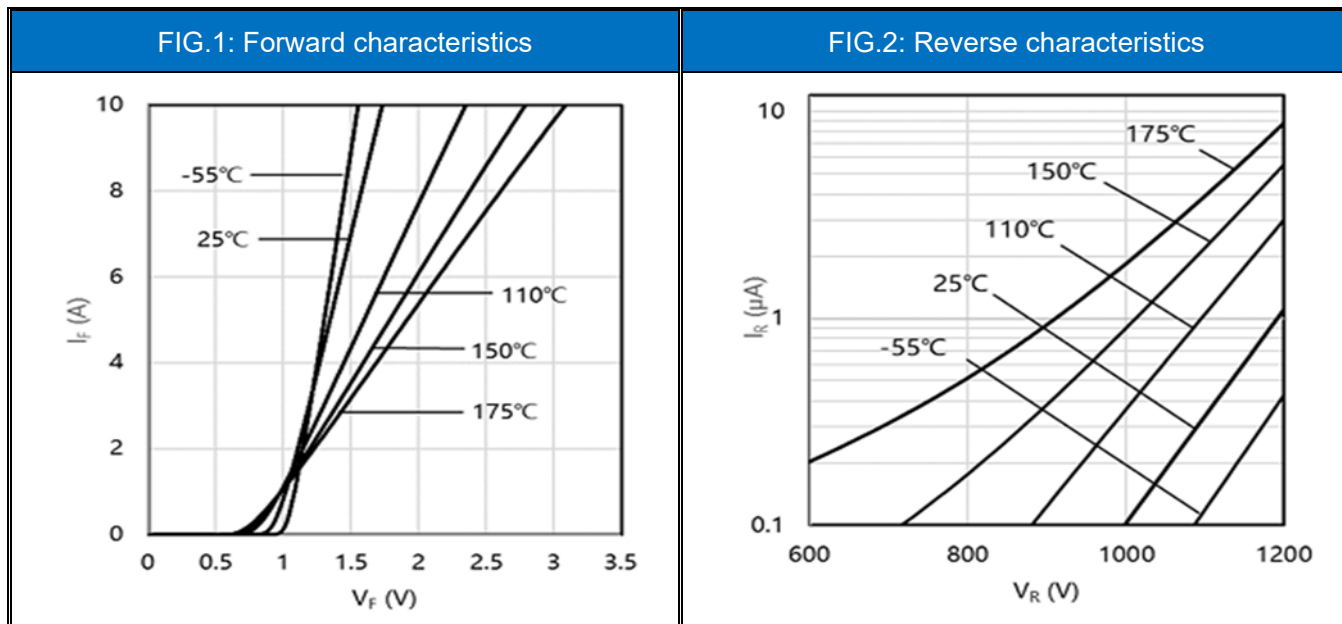
<p><b>J</b></p> <p>JieJie Microelectronics Co., Ltd</p> <p>SiC Schottky Diode</p>	<p><b>CD</b></p> <p><math>I_{F(AV)}=10A</math></p>	<p><b>10</b></p> <p>SJ: TO-247J</p>	<p><b>SJ</b></p>	<p><b>12</b></p> <p><math>V_{RRM}:1200V</math></p>	<p><b>B</b></p> <p>Version B</p>	<p><b>CT</b></p> <p>Dual chip</p>
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PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	16.10	0.610	0.622	0.634
B	20.80	21.00	21.20	0.819	0.827	0.835
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.90	2.10	2.30	0.075	0.083	0.091
F	1.00	1.20	1.40	0.039	0.047	0.055
G	5.25		5.65	0.207		0.222
H	4.80	5.00	5.20	0.189	0.197	0.205
J	1.90	2.00	2.10	0.075	0.079	0.083
K	2.20	2.35	2.50	0.087	0.093	0.098
L	0.41	0.60	0.79	0.016	0.024	0.031
M	2.80	3.00	3.20	0.110	0.118	0.126
N	2.90	3.10	3.30	0.114	0.122	0.130

CHARACTERISTICS CURVE



CHARACTERISTICS CURVE

FIG.3: Capacitance vs. reverse voltage

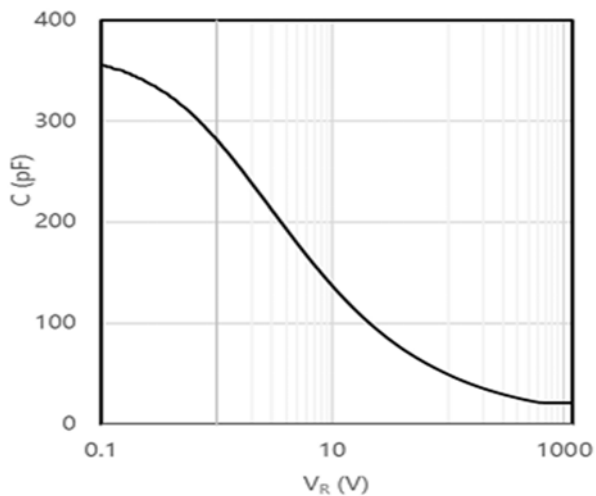


FIG.4: Transient thermal impedance

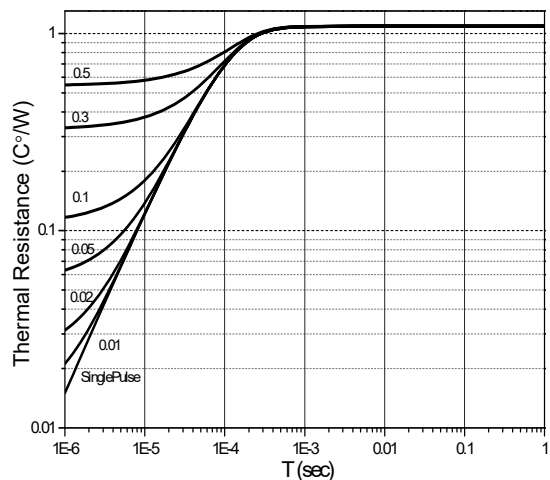


FIG.5: Capacitance charge vs. reverse voltage

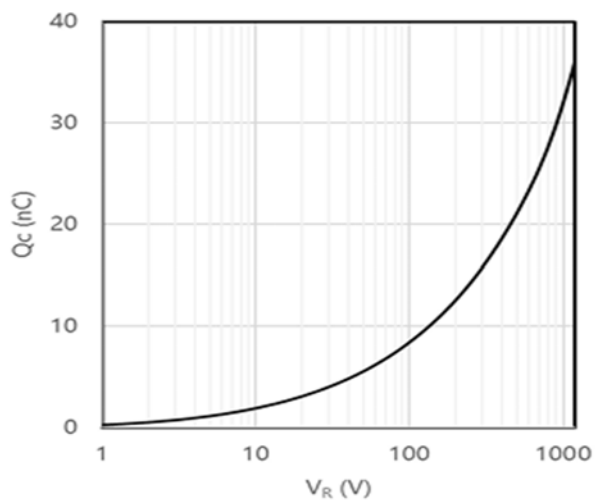


FIG.6: Capacitance stored energy

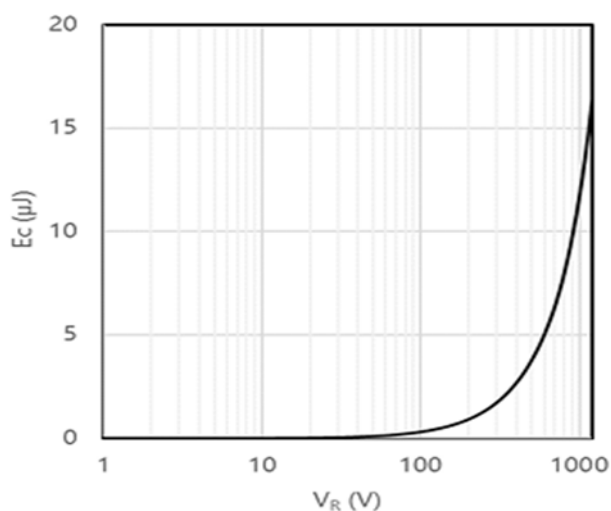
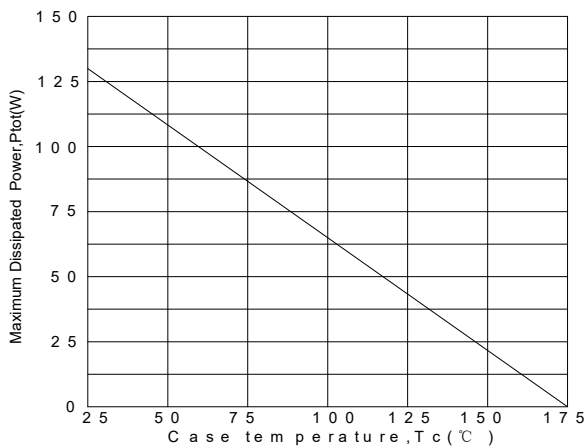


FIG.7: Power derating




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