



## JCD30Z12ACT SiC Schottky Diode

Rev.2.0

### DESCRIPTION:

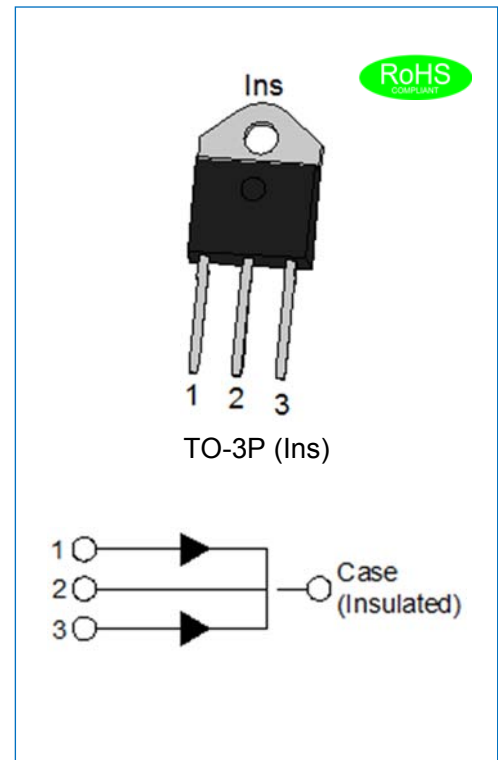
- ✧ 1200V Schottky rectifier
- ✧ Zero reverse recovery current
- ✧ Zero forward recovery voltage
- ✧ High frequency operation
- ✧ Switching characteristics independent of temperature
- ✧ Fast switch
- ✧ Positive temperature coefficient of forward voltage ( $V_F$ )

### BENEFIT:

- ✧ Lower switching loss
- ✧ No thermal runaway in parallel devices
- ✧ Lower heatsink dependent
- ✧ Electrically isolated package
- ✧ Ceramic package provides 2.5KV isolation

### APPLICATION:

- ✧ HAVC
- ✧ 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
Continuous forward current	$T_C=160^\circ\text{C}$	$I_F$	15/30	A
Repetitive peak forward surge current	$t_p=10\text{ms}, T_C=25^\circ\text{C}$	$I_{FRM}$	80	A
Non-repetitive peak forward surge current	$t_p=10\text{ms}, T_C=25^\circ\text{C}$	$I_{FSM}$	120	A
Non-Repetitive peak forward surge current	$T_C=25^\circ\text{C}, t_p=10\mu\text{s}, \text{Pulse}$	$I_{FMax}$	850	A
Power dissipation	$T_C=25^\circ\text{C}$	$P_{tot}$	283	W
	$T_C=110^\circ\text{C}$		122	
Operating junction and storage temperature		$T_j, T_{stg}$	-55 to +175	°C

**ELECTRICAL CHARACTERISTICS**

Parameter	Conditions	Symbol	Value			Unit
			Min.	Typ.	Max.	
Forward voltage	$I_F=15A, T_j=25^{\circ}C$	$V_F$	-	1.5	1.8	V
	$I_F=15A, T_j=175^{\circ}C$		-	2.2	2.5	
Reverse current	$V_R=1200V, T_j=25^{\circ}C$	$I_R$	-	10	50	$\mu A$
	$V_R=1200V, T_j=175^{\circ}C$		-	20	100	
Total capacitance	$V_R=0V, f=1MHz$	C	-	1090	-	pF
	$V_R=400V, f=1MHz$		-	70	-	
	$V_R=800V, f=1MHz$		-	53	-	
Total capacitance charge	$V_R=800V, T_j=25^{\circ}C$	$Q_C$	-	78	-	nC
Capacitance stored energy	$V_R=800V$	$E_C$	-	40	-	$\mu J$

**THERMAL CHARACTERISTICS**

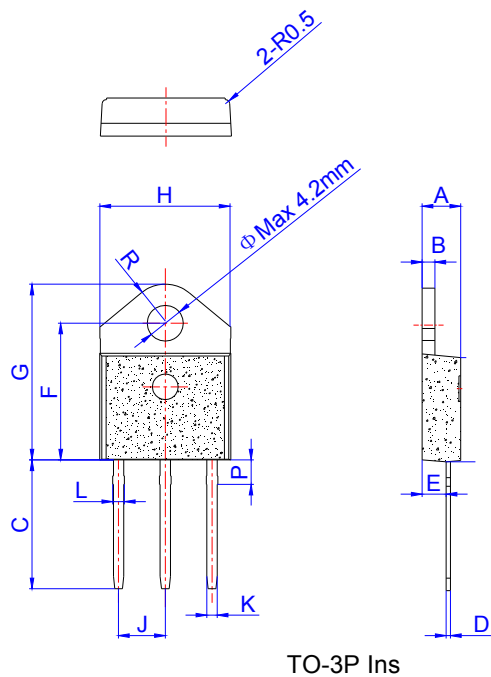
Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to Case	1.6* 0.8**	$^{\circ}C/W$

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

**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=30A</math></p> <p>Z: TO-3P(Ins)</p>	<p><b>30</b></p>	<p><b>Z</b></p>	<p><b>12</b></p> <p><math>V_{RRM}:1200V</math></p>	<p><b>A</b></p> <p>Version A</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	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.35		1.50	0.053		0.059
P	2.80		3.00	0.110		0.118
R		4.35			0.171	

## CHARACTERISTICS CURVE

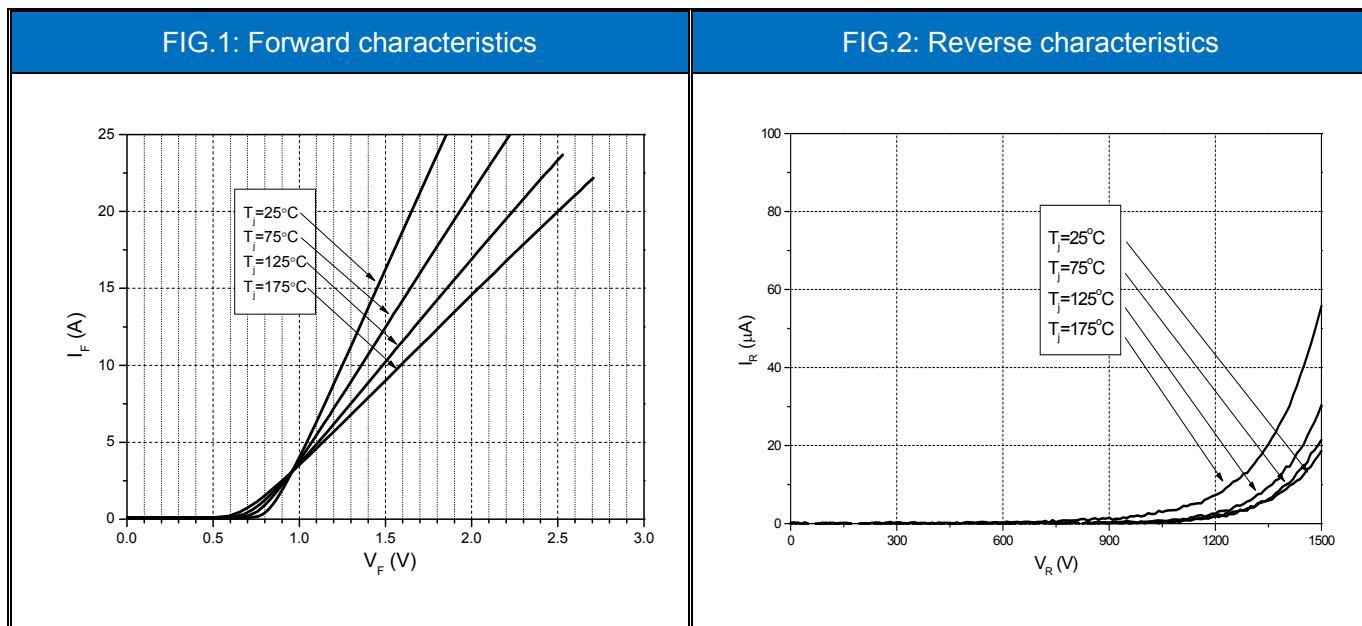


FIG.3: Capacitance vs. reverse voltage

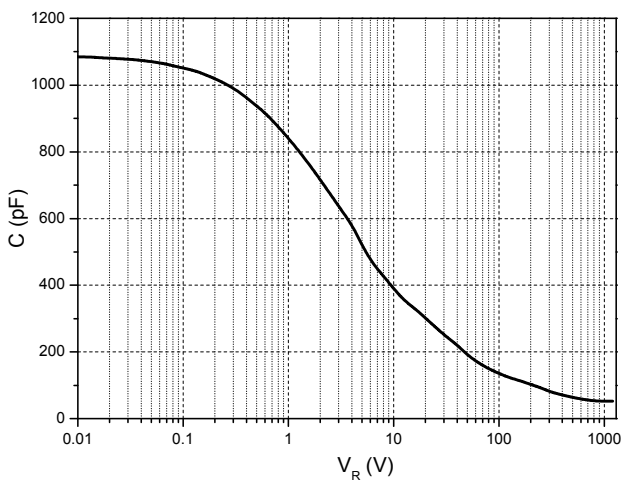
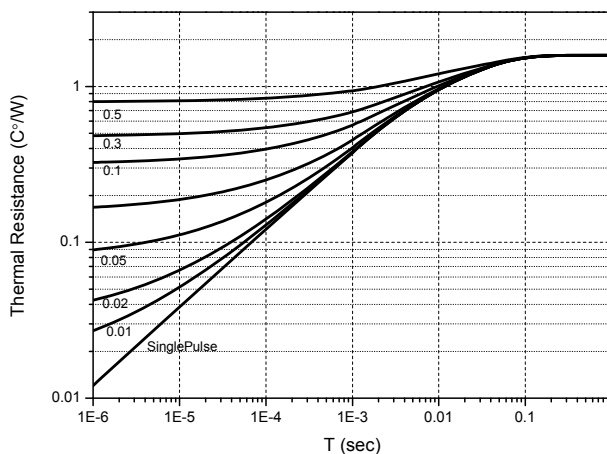


FIG.4: Transient thermal impedance



CHARACTERITICS CURVE

FIG.5: Capacitance charge vs. reverse voltage

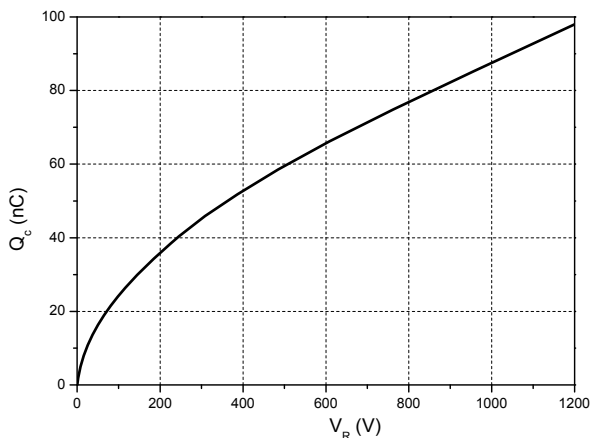


FIG.6: Capacitance stored energy

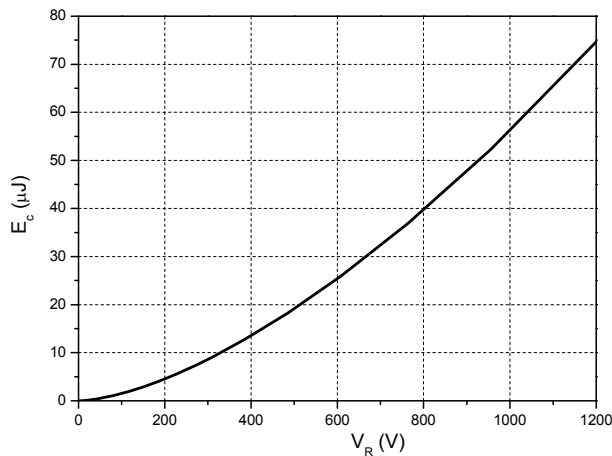


FIG.7: Power derating

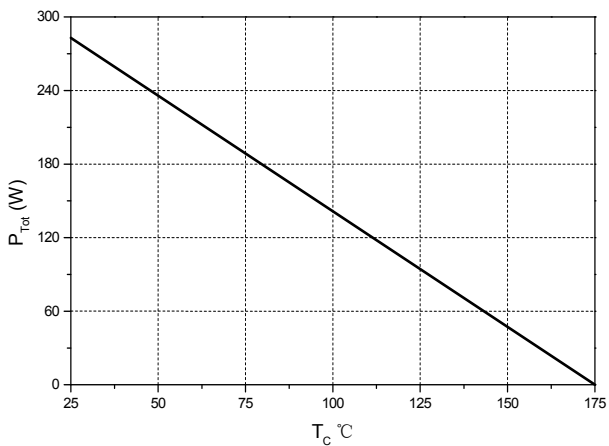
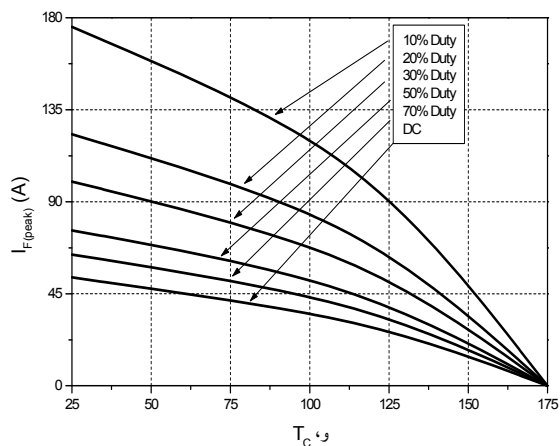


FIG.8: Current derating



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