



## JCD04A065B SiC Schottky Diode

Rev.1.0

### DESCRIPTION

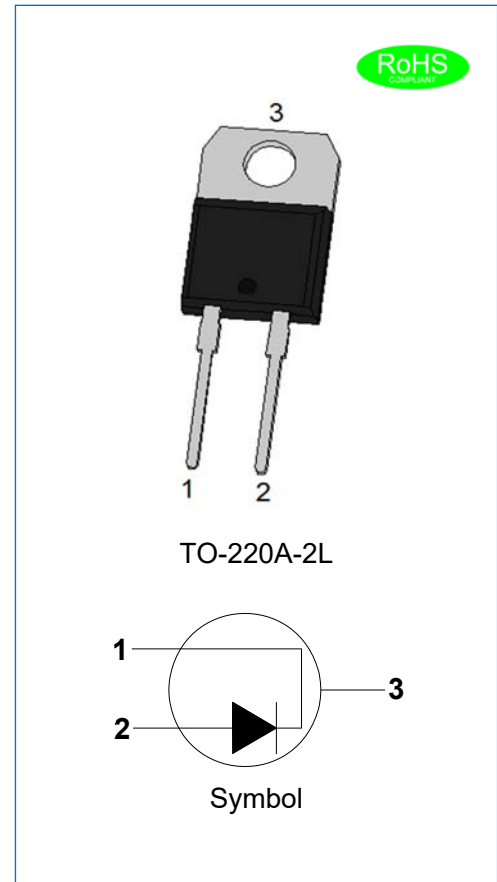
- ✧ 650V Schottky diode
- ✧ Zero reverse recovery current
- ✧ Zero forward recovery voltage
- ✧ High frequency operation
- ✧ Switching characteristics independent of temperature
- ✧ Fast switch
- ✧ Positive temperature coefficient of forward voltage ( $V_F$ )

### BENEFIT

- ✧ Lower switching loss
- ✧ No thermal runaway in parallel devices
- ✧ Lower heatsink dependent
- ✧ Electrically isolated package
- ✧ Ceramic package provides 2500V isolation

### 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	$V_{RRM}$	650	V
Maximum DC blocking voltage	$V_{DC}$	650	V
Average forward current	$T_C=154^{\circ}C$ $I_{F(AV)}$	4	A
Repetitive peak forward surge current	$t_p=10ms, T_C=25^{\circ}C$ $I_{FRM}$	12	A
Non-repetitive peak forward surge current	$t_p=10ms, T_C=25^{\circ}C$ $I_{FSM}$	25	A
Power dissipation	$T_C=25^{\circ}C$ $P_{tot}$	53	W
	$T_C=110^{\circ}C$	23	
Operating junction temperature range	$T_j$	-55 to +175	$^{\circ}C$
Storage temperature range	$T_{stg}$	-55 to +175	$^{\circ}C$

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

Parameter	Conditions	Symbol	Value			Unit
			Min.	Typ.	Max.	
Forward voltage	$I_F=4A, T_j=25^{\circ}C$	$V_F$	-	1.37	1.7	V
	$I_F=4A, T_j=175^{\circ}C$		-	1.66	-	
Reverse current	$V_R=650V, T_j=25^{\circ}C$	$I_R$	-	0.5	20	$\mu A$
	$V_R=650V, T_j=175^{\circ}C$		-	8.5	-	
Total capacitance	$V_R=1V, f=1MHz$	C	-	155	-	pF
	$V_R=200V, f=1MHz$		-	23	-	
	$V_R=400V, f=1MHz$		-	17	-	
Total capacitance charge	$V_R=400V, T_j=25^{\circ}C$	$Q_C$	-	12	-	nC
Capacitance stored energy	$V_R=400V$	$E_C$	-	1.7	-	$\mu J$

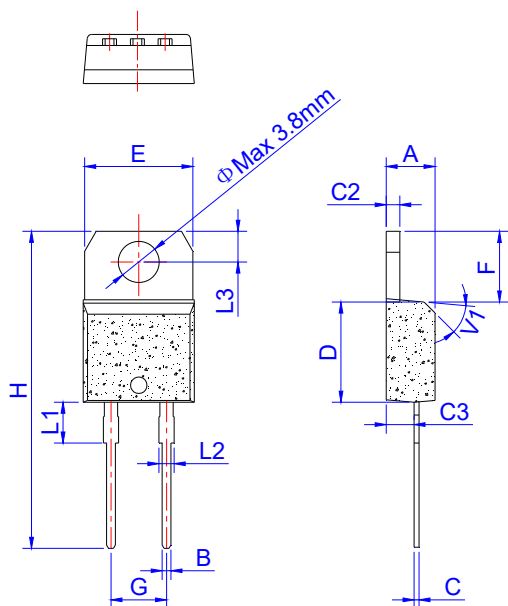
**THERMAL CHARACTERISTICS**

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{th(j-c)}$	Junction to case	-	2.8	-	$^{\circ}C/W$

**ORDERING INFORMATION**

<p>JieJie Microelectronics Co., Ltd</p> <p>SiC Schottky Diode</p> <p><math>I_{F(AV)}=4A</math></p>	<p><b>J</b></p> <p><b>CD</b></p> <p><b>04</b></p>	<p><b>A</b></p> <p>A: TO-220A-2L(Ins)</p>	<p><b>065</b></p> <p><math>V_{RRM}:650V</math></p>	<p><b>B</b></p> <p>Version B</p>
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PACKAGE MECHANICAL DATA



TO-220A-2L Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		5.08			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

CHARACTERISTICS CURVE

FIG.1: Forward characteristics

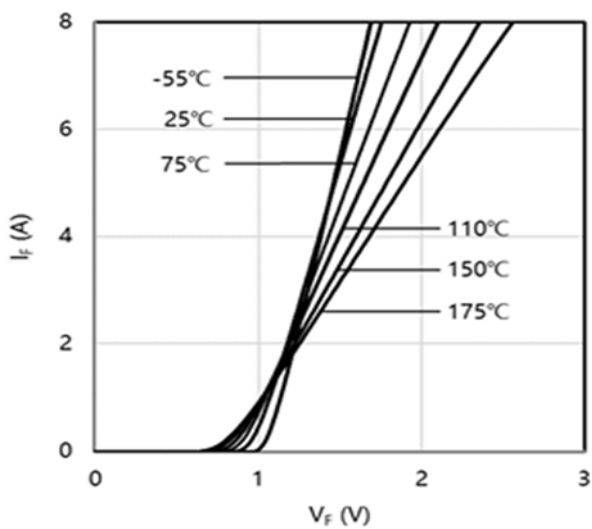
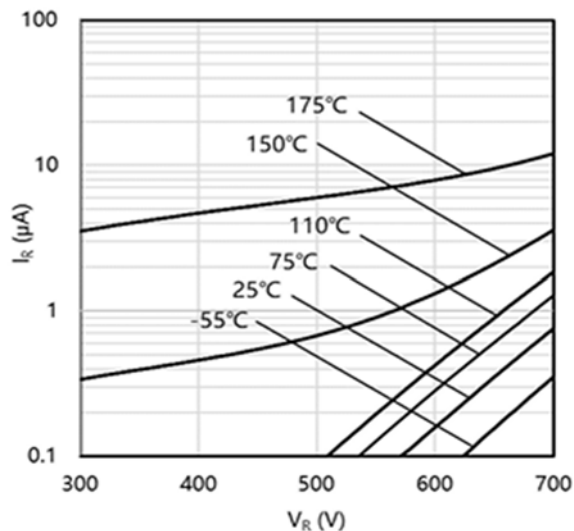


FIG.2: Reverse characteristics



CHARACTERISTICS CURVE

FIG.3: Capacitance vs. reverse voltage

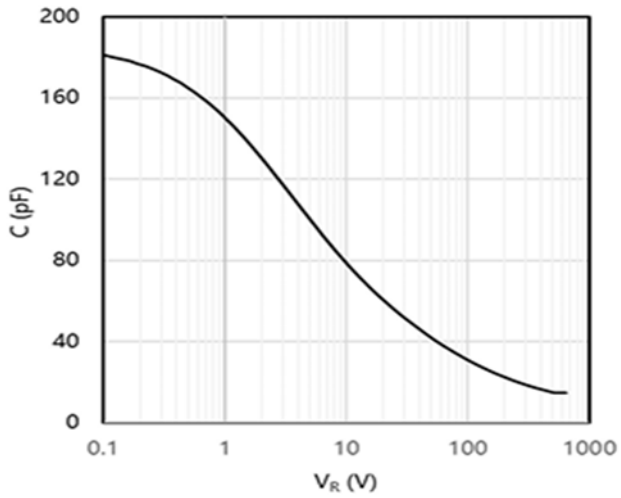


FIG.4: Transient thermal impedance

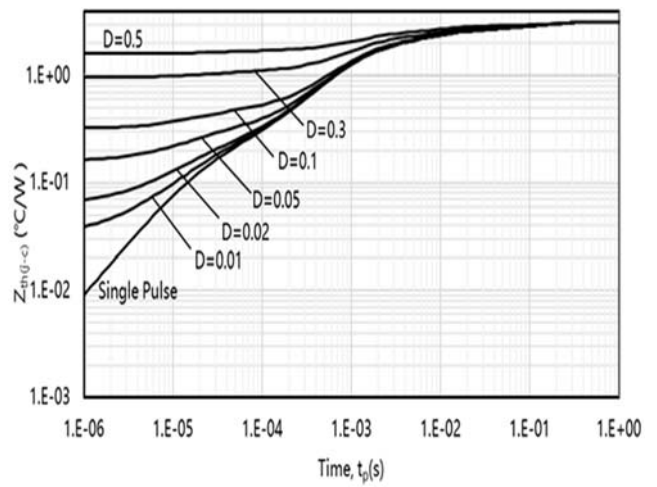


FIG.5: Reverse characteristics

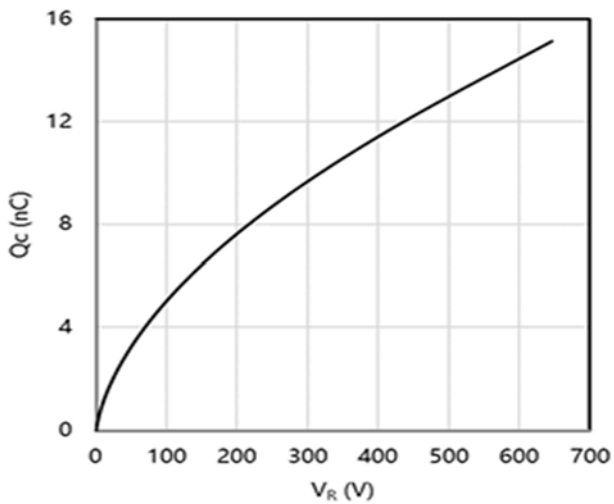


FIG.6: Capacitance stored energy

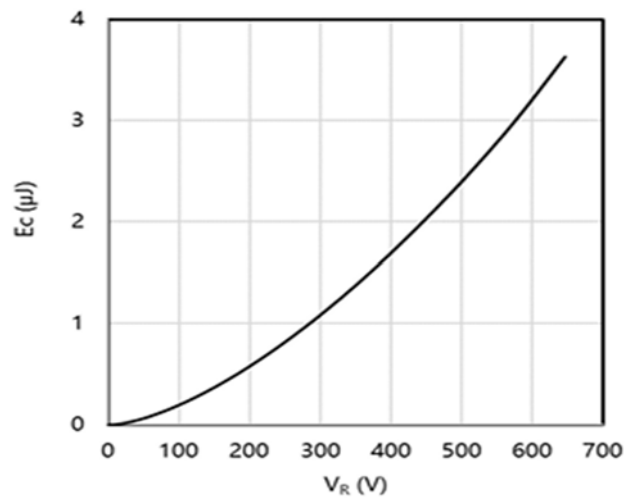
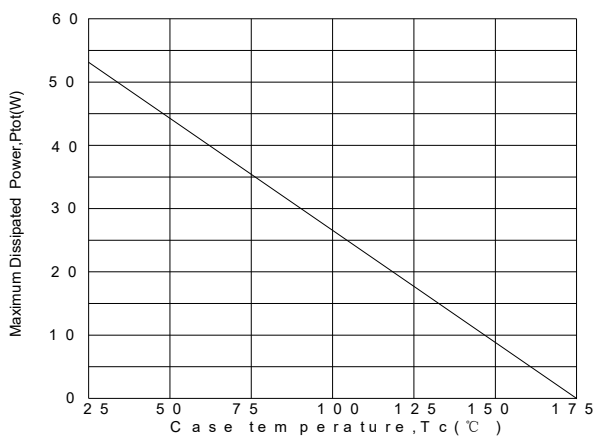


FIG.7: Power derating




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