

P2CD05330A

3300V/5A SiC Power Schottky Barrier Diode Product



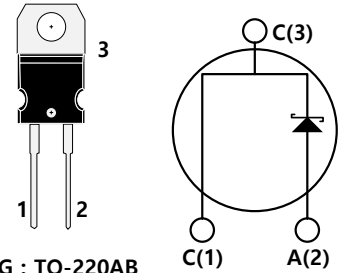
Features

- Positive temperature coefficient for easy parallel use
- Switching characteristics that are not affected by temperature
- Maximum operating temperature 175 °C
- Zero reverse recovery current
- Zero forward recovery voltage

Applications

- Solar inverters
- Switch Mode Power Supply (SMPS)
- Power factor correction
- Induction heating
- Uninterruptible power supply (UPS)
- motor driven

Key Characteristics		
V_{RRM}	3300	V
$I_F, T_C \leq 140^\circ\text{C}$	5	A
Q_C	59	nC



PKG : TO-220AB



Absolute Maximum Ratings $T_C = 25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Test Condition	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		3300	V
V_{RSM}	Surge Peak Reverse Voltage		3300	V
V_{DC}	DC Blocking Voltage		3300	V
I_F	Continuous Forward Current	$T_C=25^\circ\text{C}$	12.3	A
		$T_C=140^\circ\text{C}$	5	A
		$T_C=159^\circ\text{C}$	3	A
I_{FRM}	Repetitive Peak Forward Surge Current	$T_C=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Wave, $D=0.3$	15	A
I_{FSM}	Non-repetitive Peak Forward Surge Current	$T_C=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Wave	21	A
P_{TOT}	Power Dissipation	$T_C=25^\circ\text{C}$	146.5	W
		$T_C=110^\circ\text{C}$	62	
T_C	Maximum ambient temperature		135	$^\circ\text{C}$
T_j	Operating Junction		-55 to 175	$^\circ\text{C}$
T_{stg}	Storage Temperature		-55 to 175	$^\circ\text{C}$



Thermal Characteristics

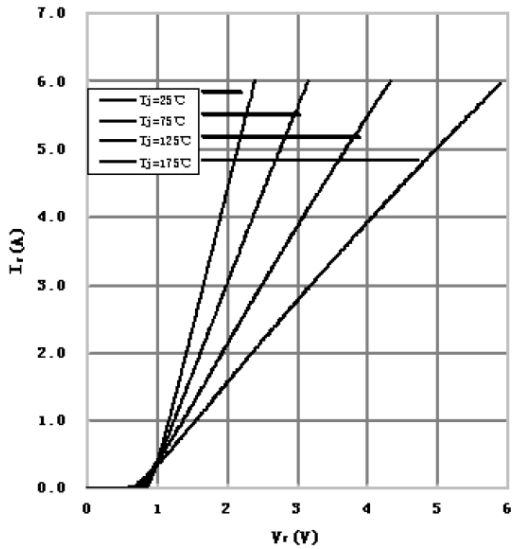
Symbol	Parameter	Test Condition	Value	Unit
			Typ.	
R_{thJc}	Thermal resistance from junction to case		1.024	°C/W

Electrical Characteristics, Nomination temperature Tj=25°C

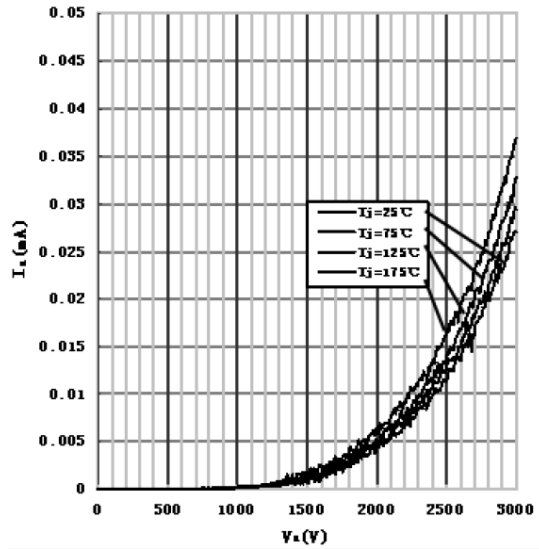
Symbol	Parameter	Test Condition	Numerical		Unit
			Typ.	Max.	
V_F	Forward Voltage	$I_F=5A, T_j=25^\circ C$	2.4	3	V
		$I_F=5A, T_j=175^\circ C$	4	6	
I_R	Reverse Current	$V_R=3000V, T_j=25^\circ C$	20	100	μA
		$V_R=3000V, T_j=175^\circ C$	40	200	
Q_C	Total capacitive Charge	$V_R=2200V, T_j=150^\circ C$ $Q_C = \int_0^{V_R} C(V)dV$	59	-	nC
C	Total Capacitance	$V_R=0V, T_j=25^\circ C, f=1MHZ$	413	435	pF
		$V_R=1000V, T_j=25^\circ C, f=1MHZ$	18	19	
		$V_R=2000V, T_j=25^\circ C, f=1MHZ$	13.5	14	

Performance Graphs

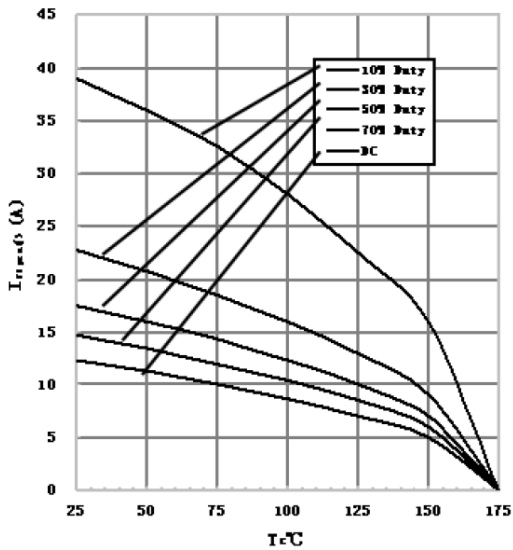
1) Forward IV characteristics as a function of T_j



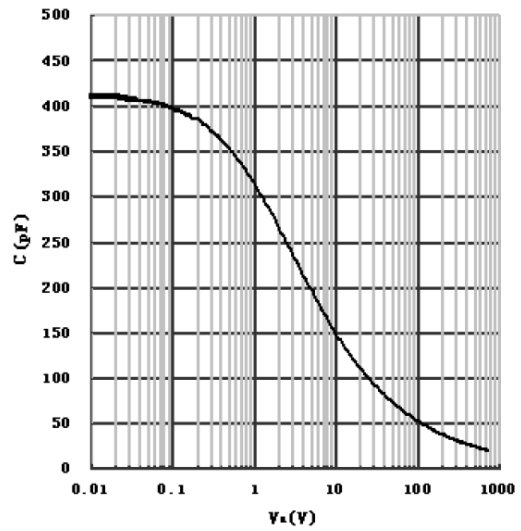
2) Reverse IV characteristics as a function of T_j



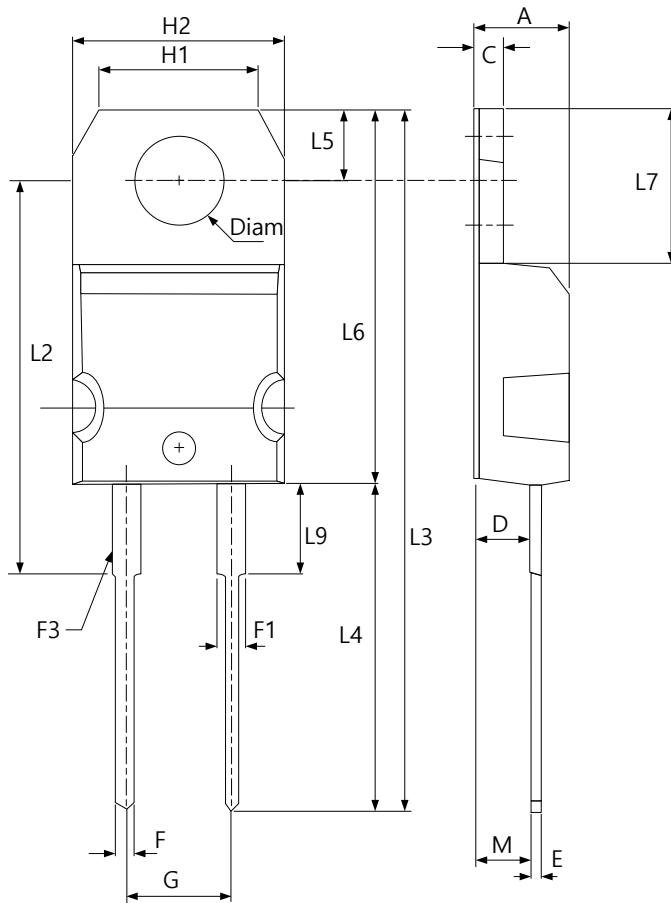
3) Current Derating



4) Capacitance VS. reverse voltage



Package Outline



SYMBOL	DIMENSIONS		NOTES
	MIN	MAX	
A	4.4	4.6	
C	1.23	1.32	
D	2.4	2.72	
E	0.49	0.7	
F	0.61	0.88	
F1	1.14	1.7	
F3		1	
G	4.95	5.15	
H1	7.7	7.9	
H2	10	10.4	
L2	16.4		
L3	28.9		
L4	13	14	
L5	2.65	2.95	
L6	15.25	15.75	
L7	6.2	6.6	
L9	3.5	3.93	
M	2.6		
Diam	3.75	3.85	

Symbol	Parameter	Test Condition	Numerical		Unit
			Typ.	Max.	
M _d	Mounting torque	M3 Screw 6-32 Screw	1/8.8	-	Nm/ lbf-in