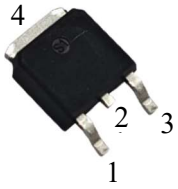
V_{RRM} = 650 V
Qc = 15 nC
I_F(≤150℃) = 6 A
V_F = 1.4 V

SiC SBD P3D06006E3

650V SiC Schottky Diode



TO-252-3

N.C	1
Anode	3
Cathode	2
Cathode	4

Features

- Qualified to AEC-Q101
- Ultra-Fast Switching
- Zero Reverse Recovery Current
- High-Frequency Operation
- Positive Temperature Coefficient on V_F
- High Surge Current
- 100% UIS tested

Standards Benefits

- Improve System Efficiency
- Reduction of Heat Sink Requirement
- Essentially No Switching Losses
- Parallel Devices Without Thermal Runaway

RoHS

Application

- Consumer SMPS
- Boost Diodes in PFC or DC/DC Stages
- AC/DC Converters

Halogen

Order Information

Part Number	Package	Marking
P3D06006E3	TO-252-3	P3D06006E3

PJ Junction Semiconductor

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1. Maximum Ratings

At T_J= 25℃, unless specified otherwise

Parameter	Symbol	Value	Unit	Test condition
Repetitive Peak Reverse Voltage	V_{RRM}	650	V	T_C= 25℃
Surge Peak Reverse Voltage	V_{RSM}	650	V	T_C= 25℃
DC Blocking Voltage	V_R	650	V	T_C= 25℃
Forward Current	I_F	19 11 6	A	T_C= 25℃ T_C= 125℃ T_C= 150℃
Repetitive Peak Forward Surge Current	I_{FRM}	30 18	A	T_C= 25℃, t_p= 10ms T_C= 125℃, t_p= 10ms
Non-Repetitive Forward Surge Current	I_{FSM}	38 33	A	T_C= 25℃, t_p= 10ms T_C= 125℃, t_p= 10ms
Power Dissipation	P_{tot}	71	W	T_C= 25℃
Operating Junction and Storage Temperature	T_J, T_{STG}	-55 to +175	℃	
TO-252 Mounting Torque M3 Screw	T_{orq}	1 8.8	Nm lbf-in	

2. Thermal Characteristics

Parameter	Symbol	Values	Unit
Thermal Resistance from Junction to Case	$R_{\theta JC}$	2.11	℃/W

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3. Electrical Characteristics

At T_J= 25℃, unless specified otherwise

Parameter	SymAbol	Values			Unit	Test condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	/	1.4	1.6	V	I_F= 6A, T_J= 25℃
			1.65	/		I_F= 6A, T_J= 175℃
Reverse Current	I_R	/	9	30	μA	V_R= 650V, T_J= 25℃
			200	/		V_R= 650V, T_J= 175℃
Total Capacitance	C	/	290	/	pF	V_R= 0V, T_J= 25℃ f= 1MHz
			32			V_R= 200V, T_J= 25℃ f= 1MHz
			25			V_R= 400V, T_J= 25℃ f= 1MHz
Total Capacitive Charge	Q_C	/	15	/	nC	V_R= 400V
Capacitance Stored Energy	E_C	/	1.8	/	μJ	V_R= 400V

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4. Typical Performance

At T_J= 25℃, unless specified otherwise

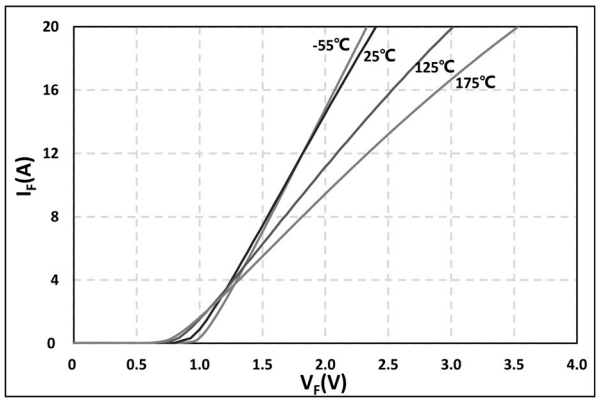

Fig. 1 Typical Forward Characteristics
$I_F = f(V_F)$; T_J = -55℃, 25℃, 125℃, 175℃

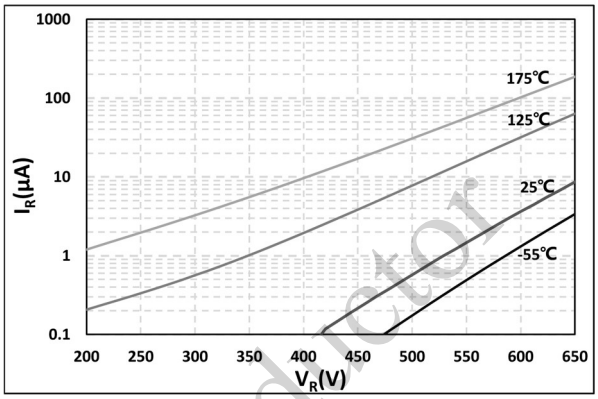

Fig. 2 Reverse Characteristics
$I_R=f(V_R)$; T_J = -55℃, 25℃, 125℃, 175℃

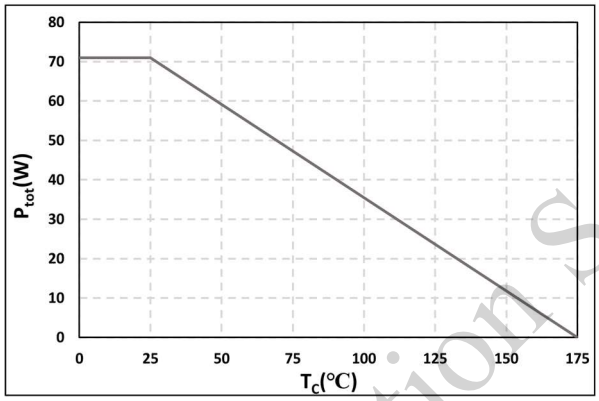

Fig. 3 Typical Power Derating
$P_{tot} = f(T_C)$

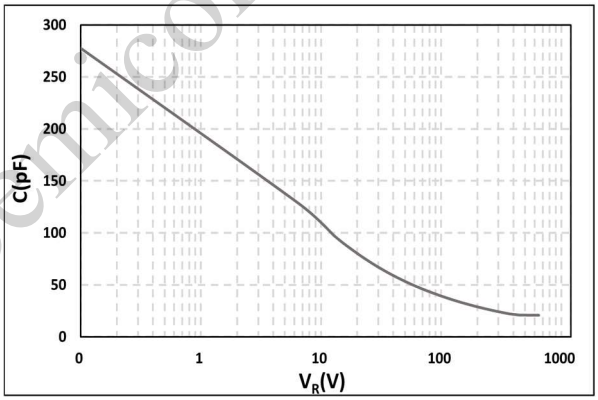

Fig. 4 Typical Total Capacitance
$C=f(V_R)$

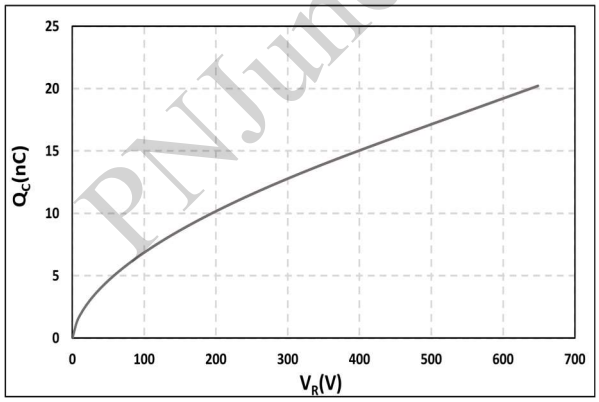

Fig. 5 Typical Total Capacitive Charge
$Q_C = f(V_R)$

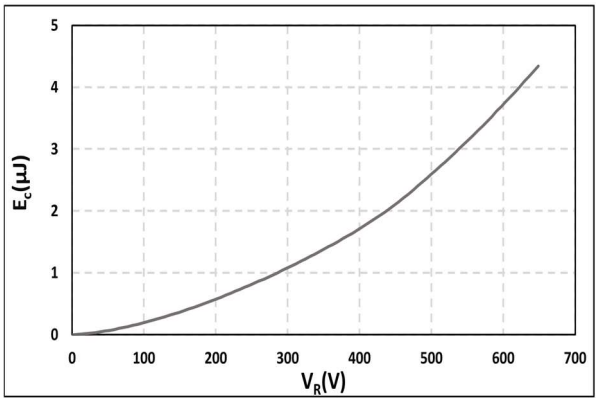

Fig. 6 Capacitance Stored Energy
$E_C = f(V_R)$

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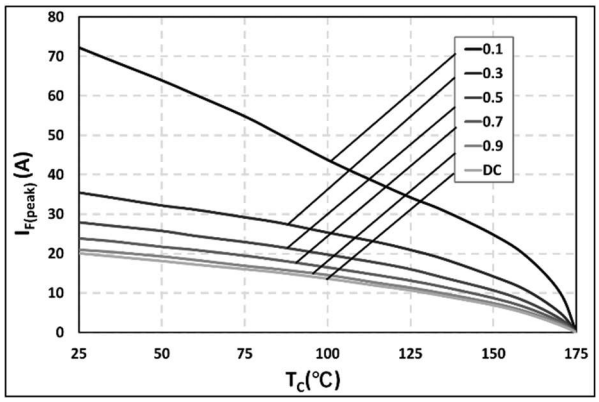

Fig. 7 Current Derating

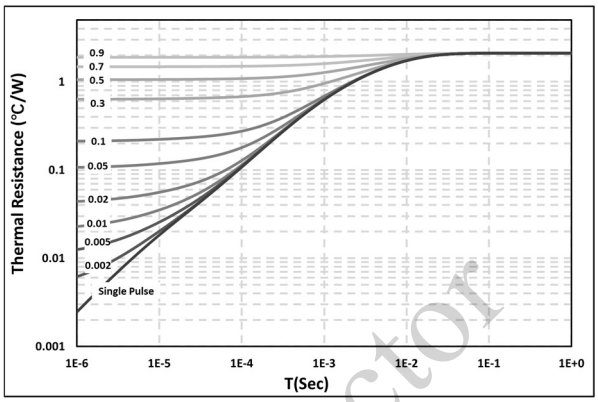

Fig. 8 Transient Thermal Impedance

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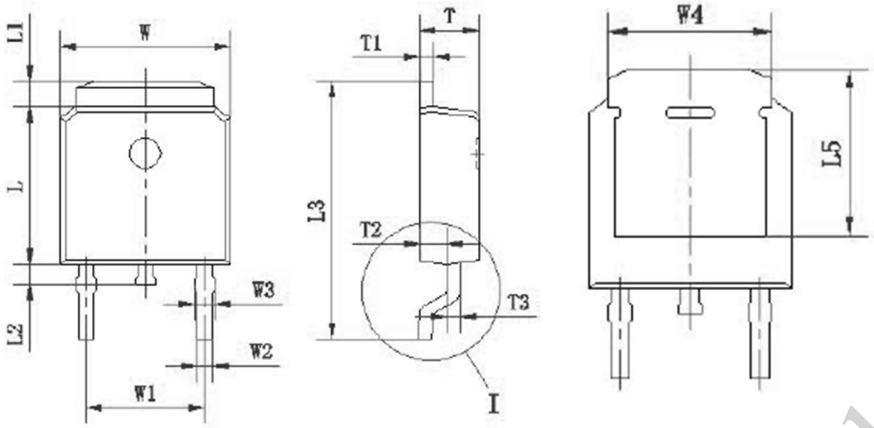
5. Package Outlines



SYMBOL	DIMENSIONAL REQNTS	
	MIN	MAX
W	6.50	6.70
W1	4.572	
W2	0.60	0.80
W3	0.68	0.88
W4	5.3	
L	6.00	6.20
L1	0.80	1.20
L2	0.60	1.00
L3	9.70	10.30
L4	1.30	1.70
L5	5.20	
T	2.20	2.40
T1	0.48	0.58
T2	0.95	1.15
T3	0.48	0.58
T4	0.00	0.15
θ	0°	8°

Drawing and dimensions

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