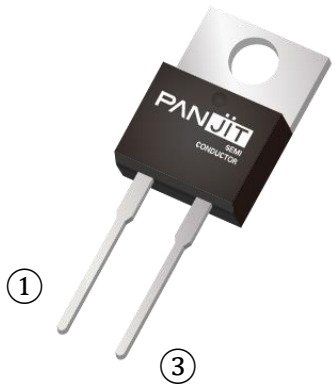
Silicon Carbide Schottky Barrier Diode

V_{RRM}	650 V	I_F	8 A
$V_{F(Typ.)}$	1.3 V	Q_C	29 nC

TO-220AC



Features

- Temperature Independent Switching Behavior
- High Surge Current Capability
- Competitive V_F 1.3V at rated current
- Low Conduction Loss
- Zero Reverse Recovery
- High junction temperature 175 °C
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: TO-220AC molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 1.8903 grams

Application

- PFC, UPS, PV Inverter, EV Charging Station, Welder

Maximum Ratings and Thermal Characteristics (T_C = 25 °C unless otherwise specified)

PARAMETER		SYMBOL	LIMIT	UNITS
Repetitive Peak Reverse Voltage		V_{RRM}	650	V
DC Blocking Voltage		V_{DC}	650	V
Continuous Forward Current	T_C= 160 °C	I_F	8	A
Repetitive Peak Surge Current *Half Sine Wave, D=0.1*	T_C= 25 °C , t_p =10ms T_C=125 °C , t_p =10ms	I_{FRM}	44 36	A
Peak Forward Surge Current *Half Sine Wave*	T_C= 25 °C , t_p =10ms T_C=125 °C , t_p =10ms	I_{FSM}	52 48	A
Peak Forward Surge Current *t_p =10us, Pulse*		I_{FSM}	539	A
Maximum Power Dissipation		P_{total}	122.4	W
Operating Junction Temperature Range		T_J	-55~175	°C
Storage Temperature Range		T_{STG}	-55~175	°C

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Electrical Characteristics (Tc = 25 °C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage Drop	V_F	I_F = 8 A, T_J = 25 °C	-	1.3	1.6	V
		I_F = 8 A, T_J = 175 °C	-	1.4	-	
Reverse Leakage Current	I_R	V_R = 650 V, T_J = 25 °C	-	0.4	60	µA
		V_R = 650 V, T_J = 175 °C	-	2	-	µA
Total Capacitive Charge	Q_C	V_R = 400V	-	29	-	nC
Total Capacitance	C	V_R = 1V, f = 1MHz	-	372	-	pF
		V_R = 200V, f = 1MHz	-	59	-	pF
		V_R = 400V, f = 1MHz	-	44	-	pF
Capacitance Stored Energy	E_C	V_R = 400V	-	4.8	-	µJ
Thermal Resistance	$R_{\theta JC}$		-	1.23	-	°C/W

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TYPICAL CHARACTERISTIC CURVES

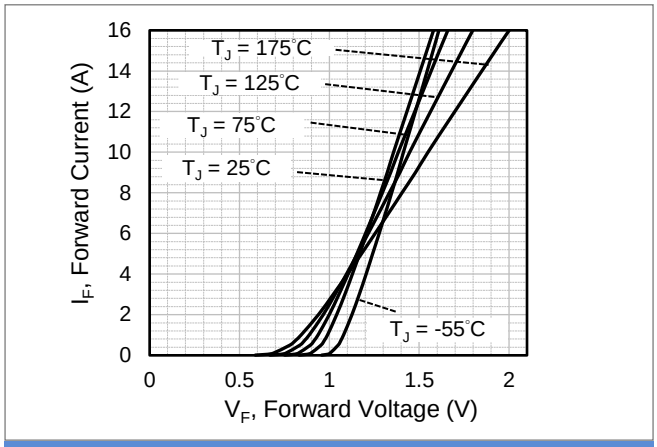

Fig.1 Forward Characteristics

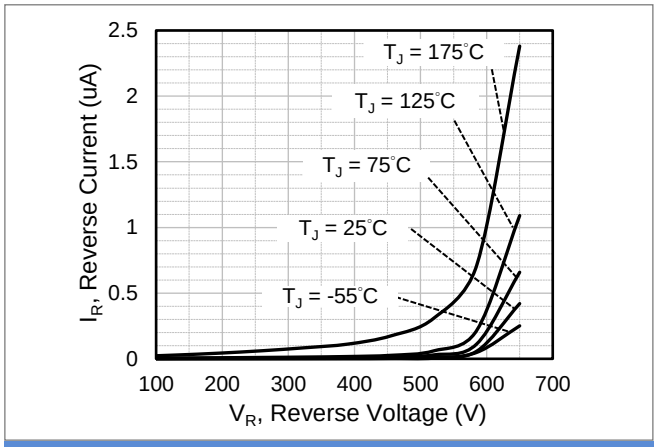

Fig.2 Reverse Characteristics

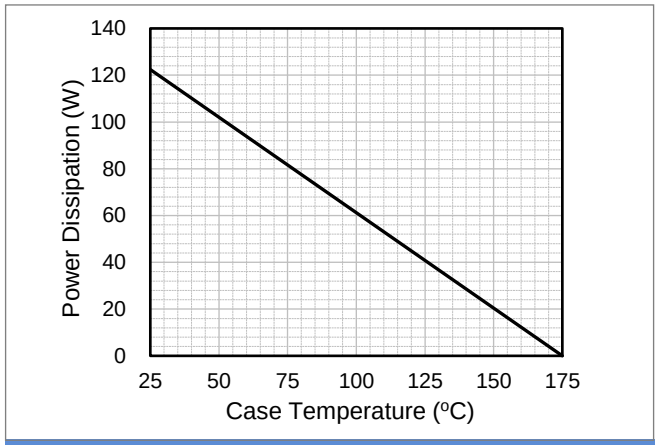

Fig.3 Power Derating Curve

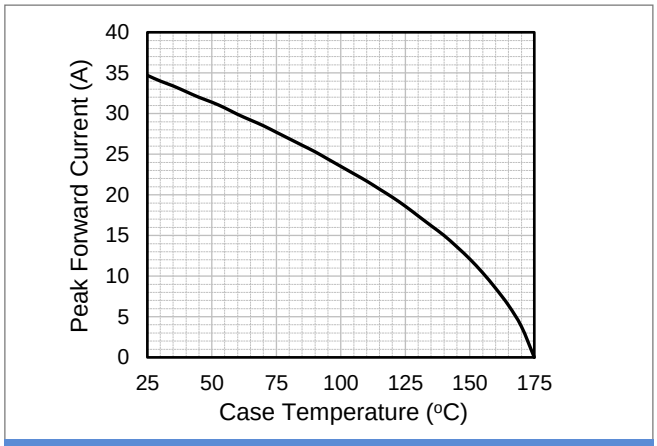

Fig.4 Current Derating Curve

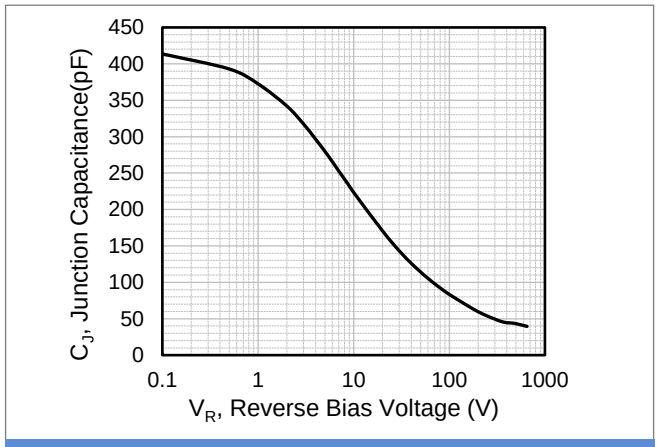

Fig.5 Typical Junction Capacitance

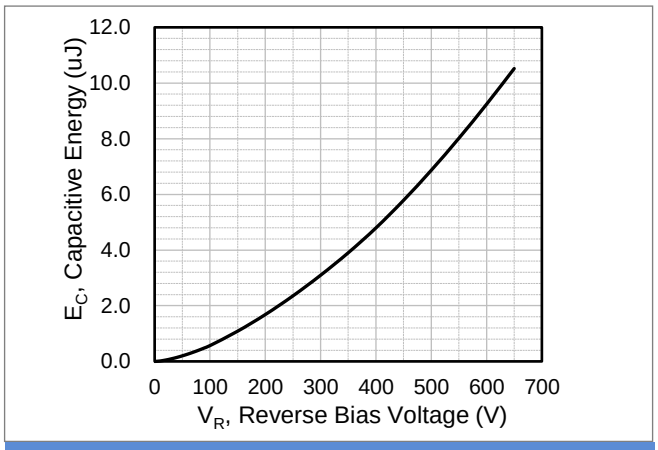

Fig.6 Capacitance Stored Energy

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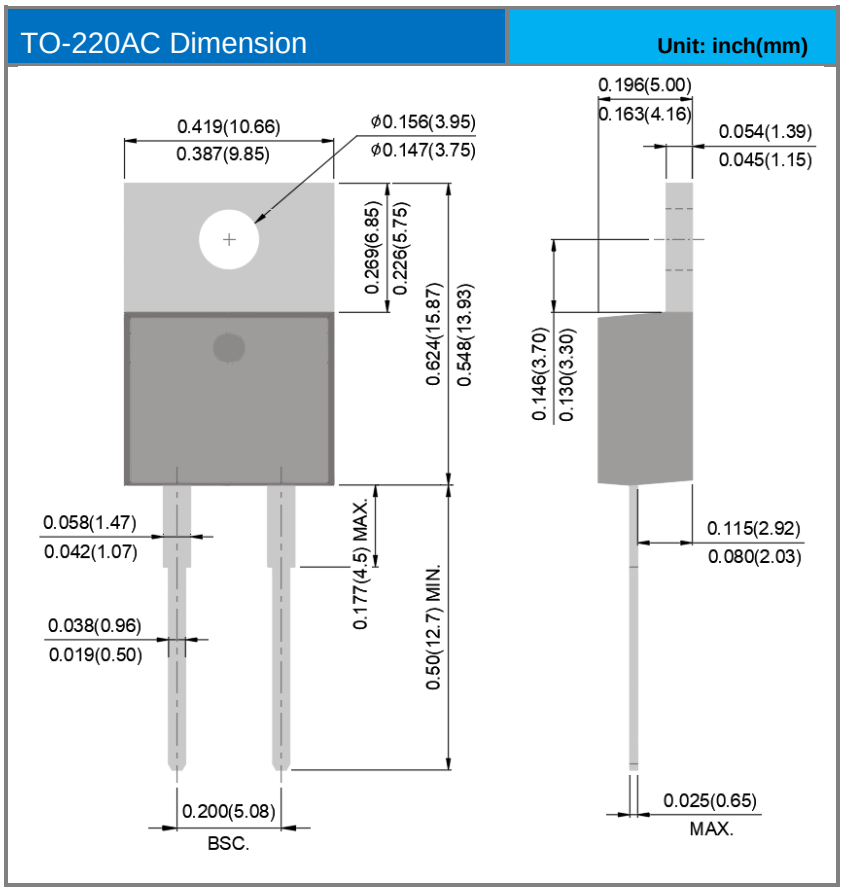
Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PCDP0865GB	TO-220AC	50pcs / Tube	CDP0865GB

Packaging Information



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