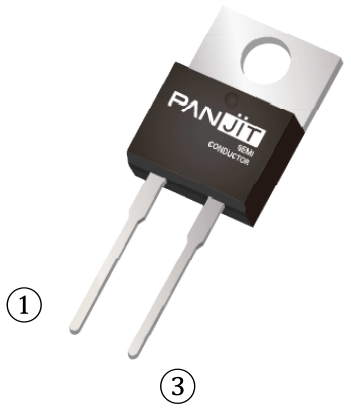
Silicon Carbide Schottky Barrier Diode

V_{RRM}	650 V	I_F	6 A
$V_{F(Typ.)}$	1.5 V	Q_C	11.3 nC

TO-220AC





Features

- Temperature Independent Switching Behavior
- High Surge Current Capability
- Positive Temperature Coefficient on V_F
- 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: 0.067 ounces, 1.89 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= 145 °C	I_F	6	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}	28 24	A
Peak Forward Surge Current *Half Sine Wave*	T_C= 25 °C , t_p =10ms T_C=125 °C , t_p =10ms	I_{FSM}	28 24	A
Peak Forward Surge Current *t_p =10us, Pulse*			320	A
Maximum Power Dissipation		P_{total}	57.7	W
Operating Junction Temperature Range		T_J	-55~175	°C
Storage Temperature Range		T_{STG}	-55~175	°C

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage Drop	V_F	I_F = 6 A, T_J = 25 °C	-	1.5	1.7	V
		I_F = 6 A, T_J = 175 °C	-	1.8	-	
Reverse Leakage Current	I_R	V_R = 650 V, T_J = 25 °C	-	2	50	μA
		V_R = 650 V, T_J = 175 °C	-	0.025	-	mA
Total Capacitive Charge	Q_C	I_F = 6 A, V_R = 400V	-	11.3	-	nC
Total Capacitance	C	V_R = 1V, f = 1MHz	-	228	-	pF
		V_R = 200V, f = 1MHz	-	18.9	-	pF
		V_R = 400V, f = 1MHz	-	13.3	-	pF
Capacitance Stored Energy	E_C	V_R = 400V	-	1.59	-	μJ
Thermal Resistance	$R_{\theta JC}$		-	2.6	-	°C/W

TYPICAL CHARACTERISTIC CURVES

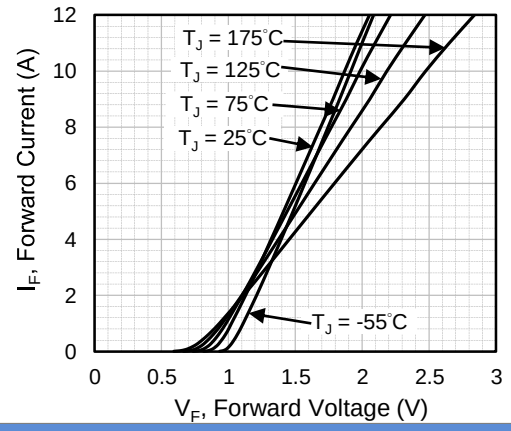


Fig.1 Forward Characteristics

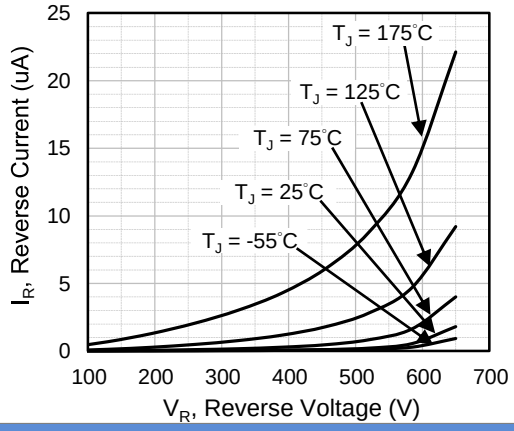


Fig.2 Reverse Characteristics

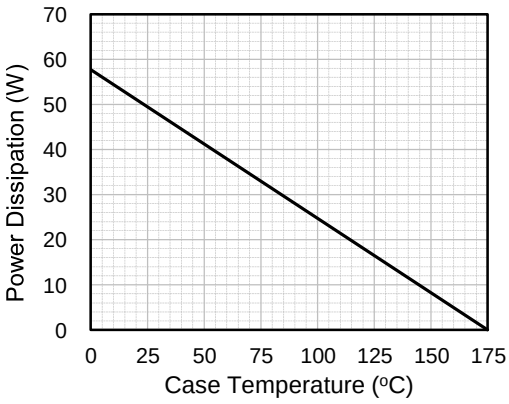


Fig.3 Power Derating Curve

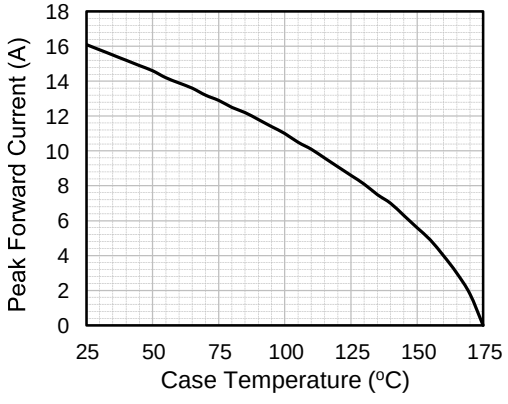


Fig.4 Current Derating Curve

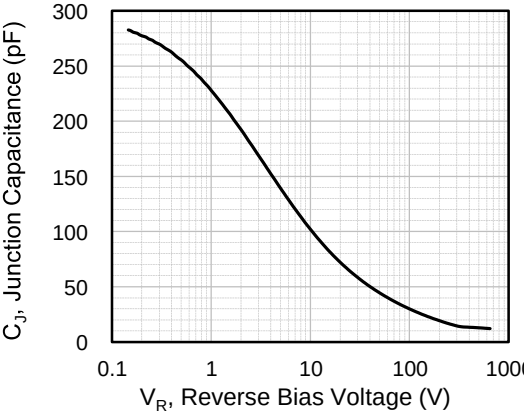


Fig.5 Typical Junction Capacitance

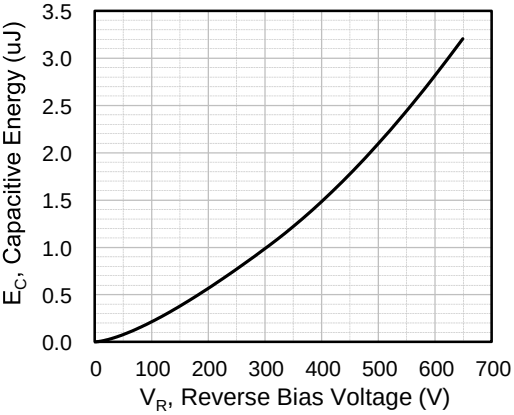


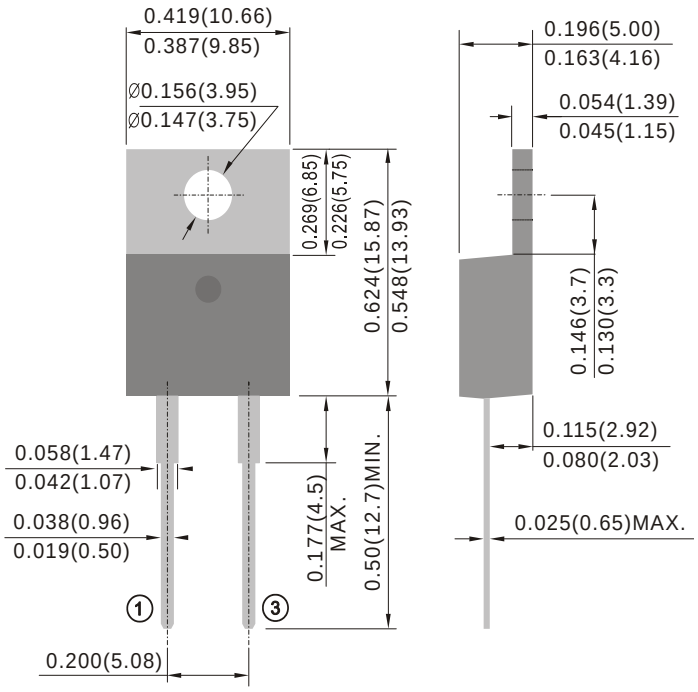
Fig.6 Capacitance Stored Energy

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PCDP0665G1	TO-220AC	50pcs / Tube	CDP0665G1

Packaging Information

TO-220AC Dimension — Unit: inch(mm)



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