Silicon Carbide Schottky Barrier Diode

| V_{RRM}	650 V	I_F	10 A
$V_{F(Typ.)}$	1.5 V	Q_C	20nC

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

TO-220AC
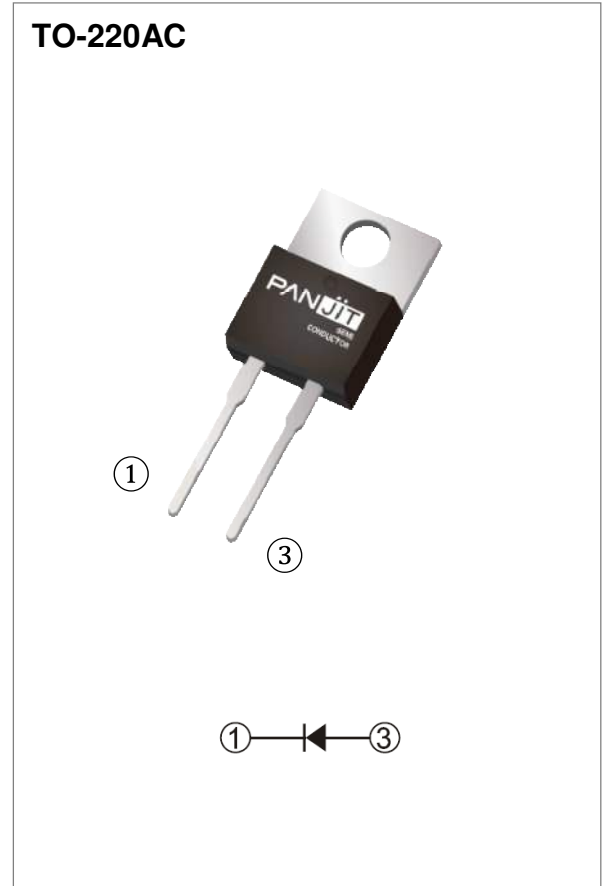
Maximum Ratings and Thermal Characteristics (T$_C$ = 25 °C unless otherwise specified)

PARAMETER		SYMBOL	LIMIT	UNITS
Repetitive Peak Reverse Voltage		V_{RRM}	650	V
DC Blocking Voltage		V_{DC}	650	V
Continuous Forward Current	T$_C$= 140 °C	I_F	10	A
Repetitive Peak Surge Current	T$_C$= 25 °C , t$_p$ =10ms	I_{FRM}	40	A
Half Sine Wave, D=0.1	T$_C$=125 °C , t$_p$ =10ms		36	
Peak Forward Surge Current	T$_C$= 25 °C , t$_p$ =10ms	I_{FSM}	44	A
Half Sine Wave	T$_C$=125 °C , t$_p$ =10ms		40	
Peak Forward Surge Current t$_p$ =10us, Pulse			550	A
Maximum Power Dissipation		P_{total}	83.3	W
Operating Junction Temperature Range		T_J	-55~175	°C
Storage Temperature Range		T_{STG}	-55~175	°C

Electrical Characteristics (T$_C$ = 25 ^{o}C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage Drop	V$_F$	I$_F$ = 10 A, T$_J$ = 25 ^{o}C	-	1.5	1.7	V
		I$_F$ = 10 A, T$_J$ = 175 ^{o}C	-	1.8	-	
Reverse Leakage Current	I$_R$	V$_R$ = 650 V, T$_J$ = 25 ^{o}C	-	3	70	μA
		V$_R$ = 650 V, T$_J$ = 175 ^{o}C	-	0.04	-	mA
Total Capacitive Charge	Q$_C$	I$_F$ = 10 A, V$_R$ = 400V	-	20	-	nC
Total Capacitance	C	V$_R$ = 1V, f = 1MHz	-	364	-	pF
		V$_R$ = 200V, f = 1MHz	-	35.4	-	pF
		V$_R$ = 400V, f = 1MHz	-	27	-	pF
Capacitance Stored Energy	E$_C$	V$_R$ = 400V	-	3	-	μJ
Thermal Resistance	R$_{\theta JC}$		-	1.8	-	^{o}C/W

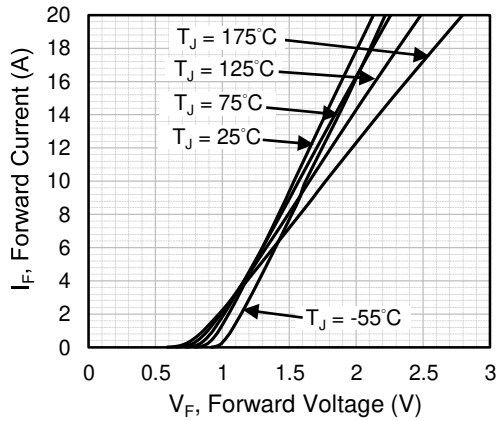**TYPICAL CHARACTERISTIC CURVES**
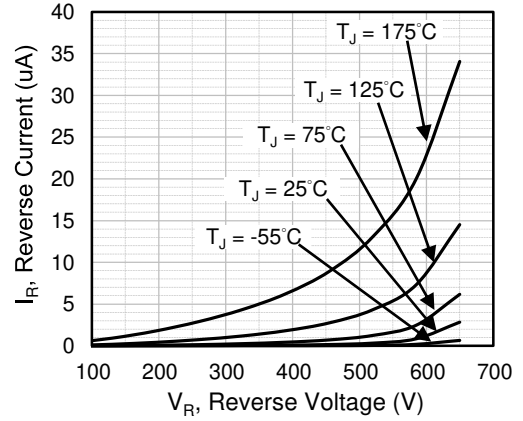
Fig.1 Forward Characteristics
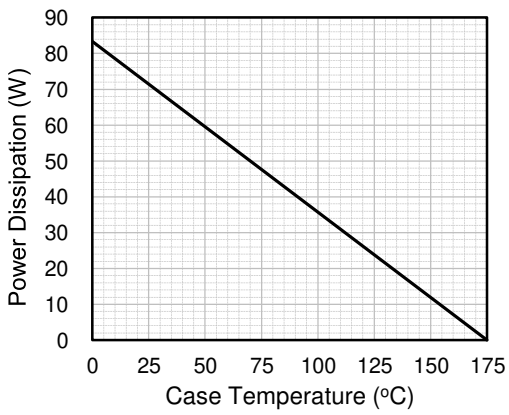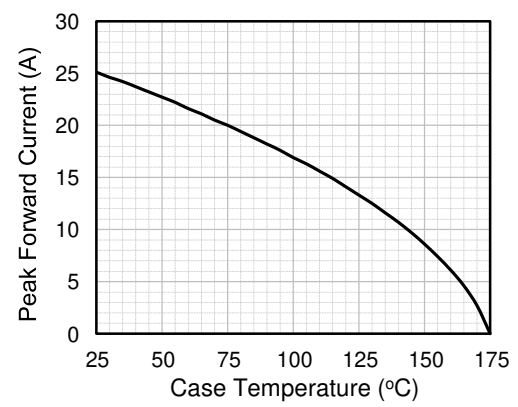
Fig.2 Reverse Characteristics

Fig.3 Power Derating Curve

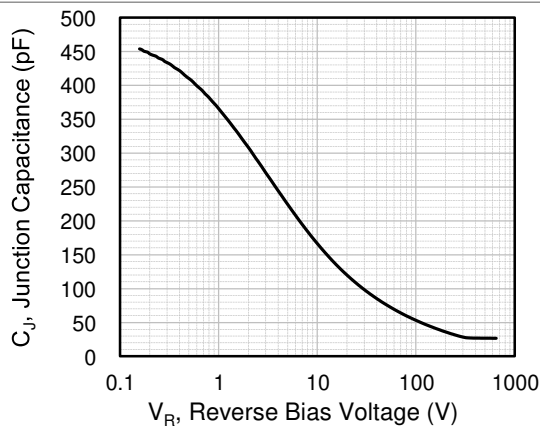Fig.4 Current Derating Curve

Fig.5 Typical Junction Capacitance
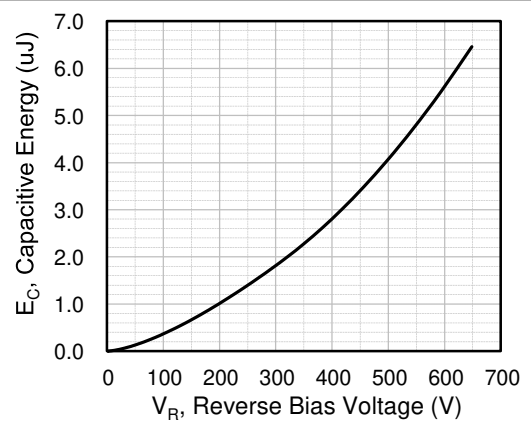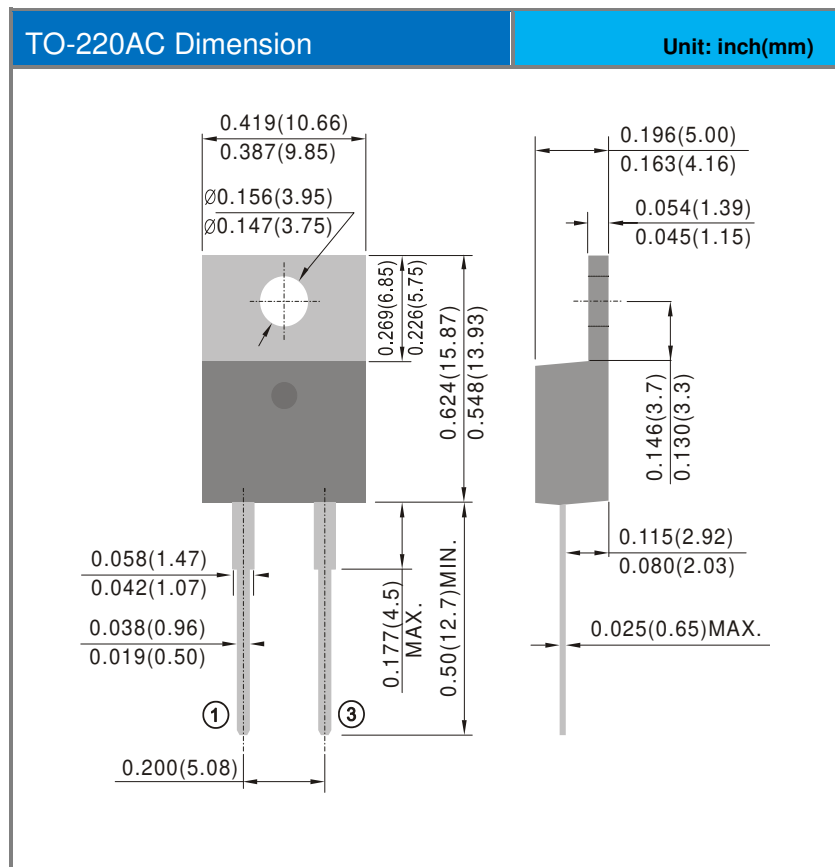
Fig.6 Capacitance Stored Energy

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PCDP1065G1	TO-220AC	50pcs / Tube	CDP1065G1

Packaging Information

TO-220AC Dimension	Unit: inch(mm)

0.419(10.66)
0.387(9.85)

Ø0.156(3.95)
Ø0.147(3.75)

0.269(6.85)
0.226(5.75)

0.624(15.87)
0.548(13.93)

0.058(1.47)
0.042(1.07)

0.038(0.96)
0.019(0.50)

0.177(4.5)MAX.

0.50(12.7)MIN.

① ③

0.200(5.08)

0.196(5.00)
0.163(4.16)

0.054(1.39)
0.045(1.15)

0.146(3.7)
0.130(3.3)

0.115(2.92)
0.080(2.03)

0.025(0.65)MAX.

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