Silicon Carbide Schottky Barrier Diode

V_{RRM}	650 V	I_F	8A
$V_{F(Typ.)}$	1.3 V	Q_C	25.3 nC

Features

- 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

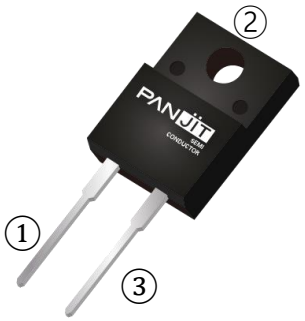
Mechanical Data

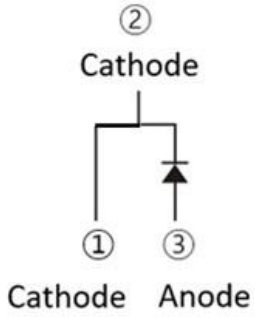
- Case: ITO-220AC molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 1.6225 grams

Application

- PFC, UPS, PV Inverter

ITO-220AC





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

PARAMETER		SYMBOL	LIMIT	UNIT
Repetitive Peak Reverse Voltage		V_{RRM}	650	V
DC Blocking Voltage		V_{DC}	650	V
Continuous Forward Current	T_C= 153 °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}	61 49	A
Peak Forward Surge Current *Half Sine Wave*	T_C= 25 °C , t_p =10ms T_C=125 °C , t_p =10ms	I_{FSM}	76 65	A
Peak Forward Surge Current	*t_p =10us, Pulse*		800	A
i^2t value	T_C= 25 °C , t_p =10ms T_C=125 °C , t_p =10ms	$\int i^2dt$	21.8 16.8	A^2s
Maximum Power Dissipation		P_{total}	60	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.	UNIT
Forward Voltage Drop	V_F	I_F = 8 A, T_J = 25 °C	-	1.3	1.55	V
		I_F = 8 A, T_J = 125 °C	-	1.4	-	
		I_F = 8 A, T_J = 175 °C	-	1.5	-	
Reverse Leakage Current	I_R	V_R = 650 V, T_J = 25 °C	-	0.3	20	μA
		V_R = 650 V, T_J = 175 °C	-	2.2	-	μA
Total Capacitive Charge	Q_C	I_F = 8 A, V_R = 400V	-	25.3	-	nC
Total Capacitance	C	V_R = 1V, f = 1MHz	-	395	-	pF
		V_R = 200V, f = 1MHz	-	50	-	pF
		V_R = 400V, f = 1MHz	-	47	-	pF
Capacitance Stored Energy	E_C	V_R = 400V	-	4.4	-	μJ
Thermal Resistance	$R_{\theta JC}$		-	1.6	2.1	°C/W

TYPICAL CHARACTERISTIC CURVES

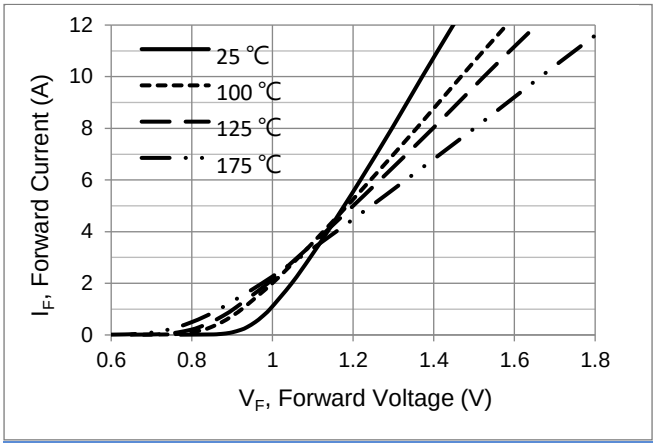


Fig.1 Forward Characteristics

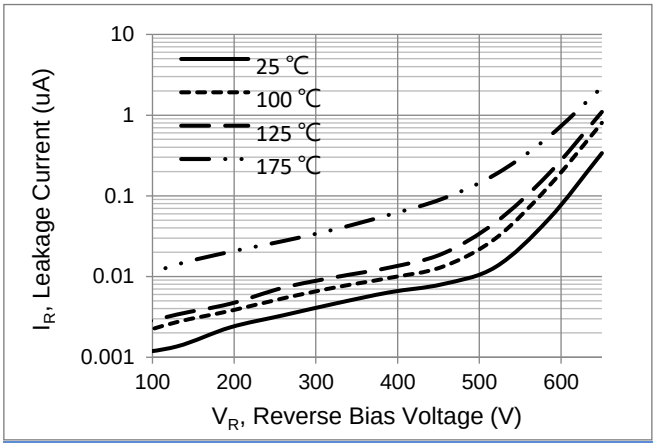


Fig.2 Reverse Characteristics

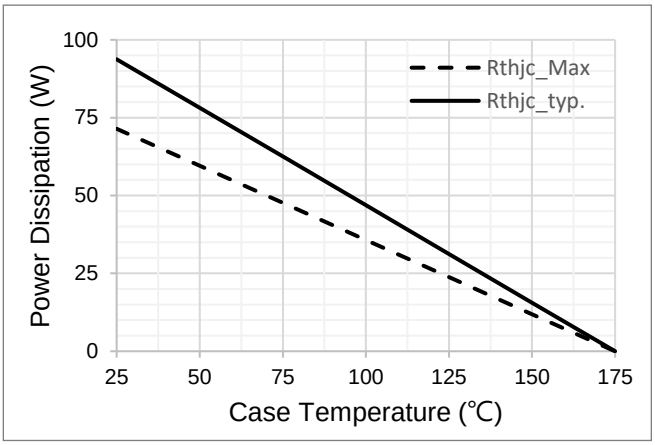


Fig.3 Power Derating Curve

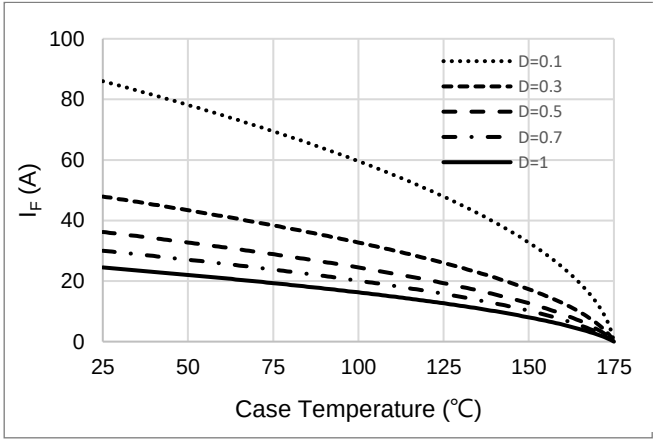


Fig.4 Maximum Forward Current

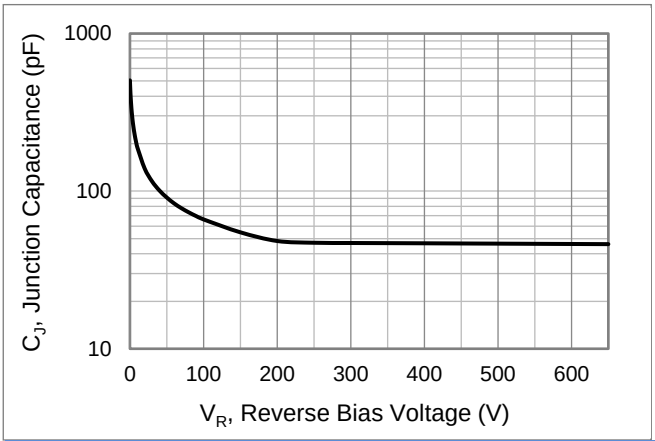


Fig.5 Typical Junction Capacitance

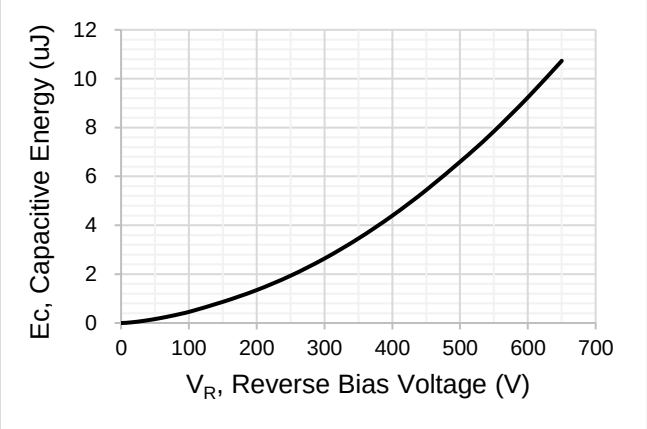


Fig.6 Capacitance Stored Energy

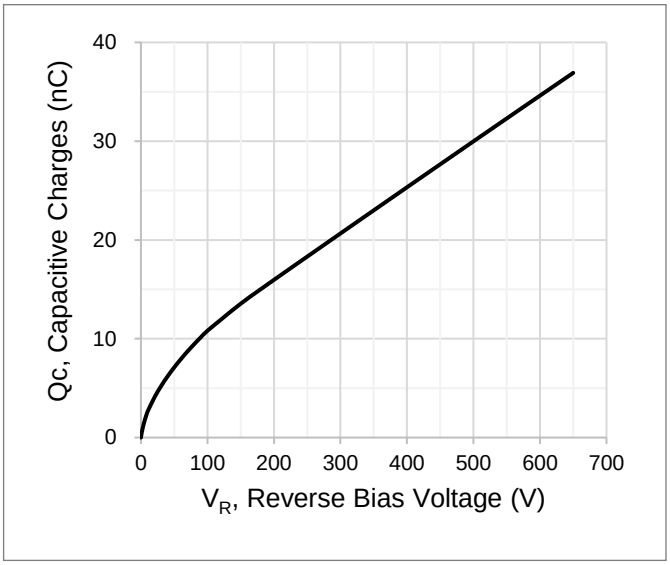


Fig.7 Total capacitive charges VS. Reverse voltage applied (typical values)

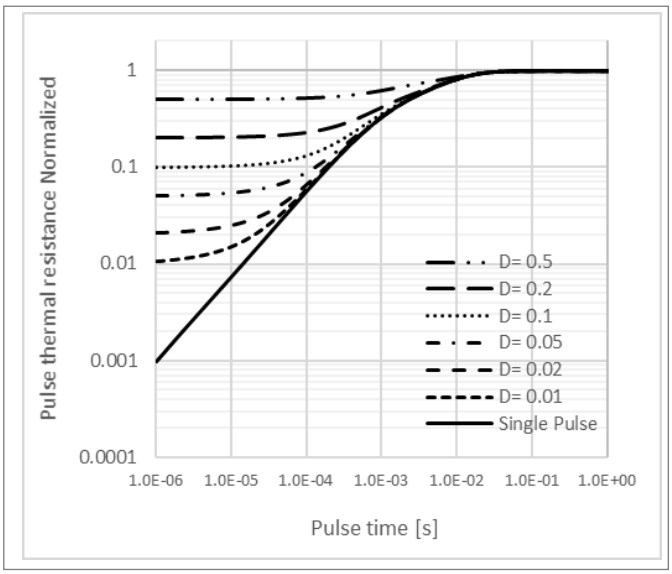


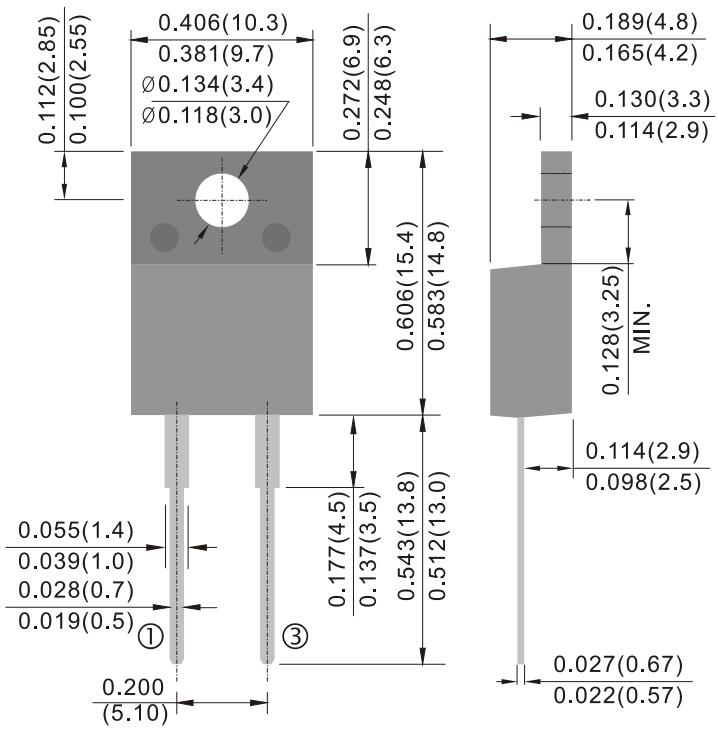
Fig.8 Max. Transient thermal impedance

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PCDF0865G3	ITO-220AC	50pcs / Tube	CDF0865G3

Packaging Information

ITO-220AC Dimension — Unit: inch(mm)



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