

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

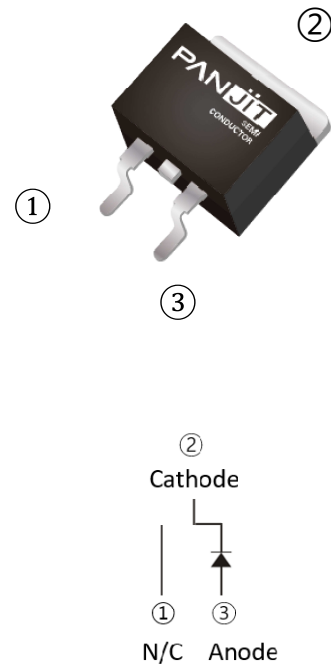
Mechanical Data

- Case: TO-263 molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0487 ounces, 1.38 grams

Application

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

TO-263 (Pin1 is NC pin)



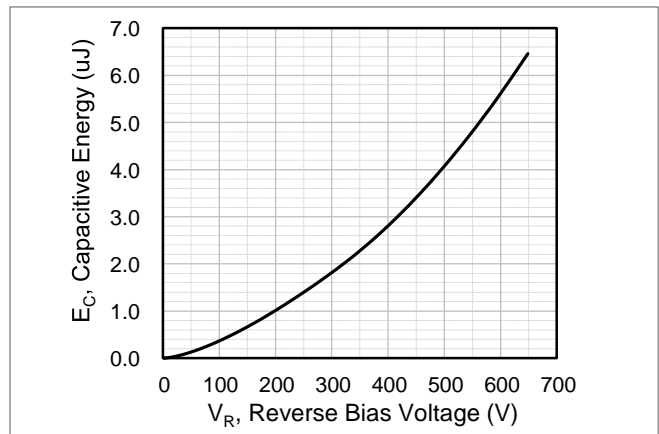
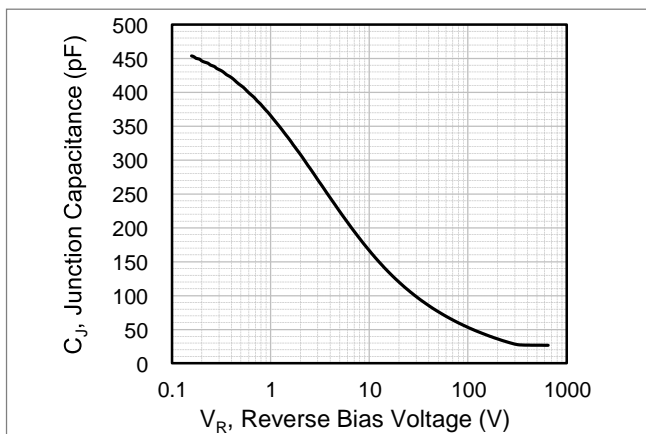
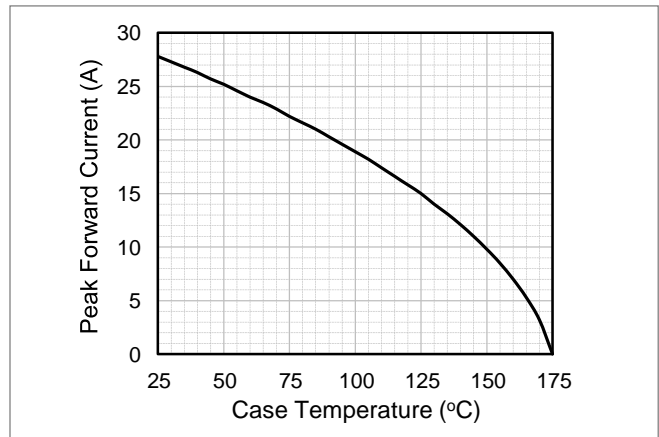
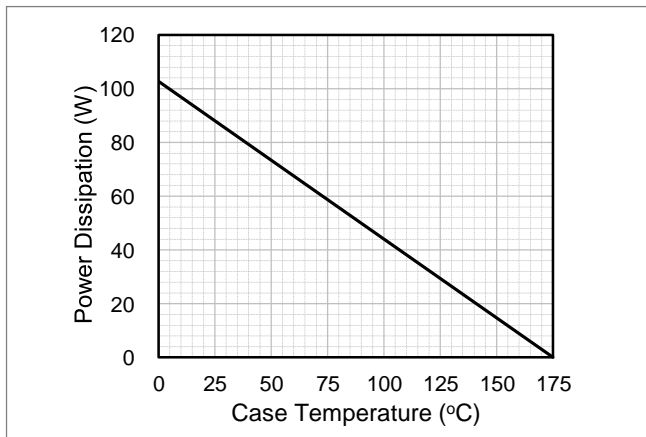
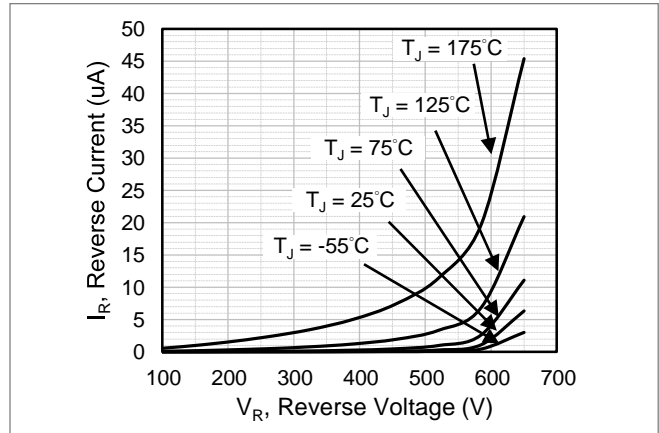
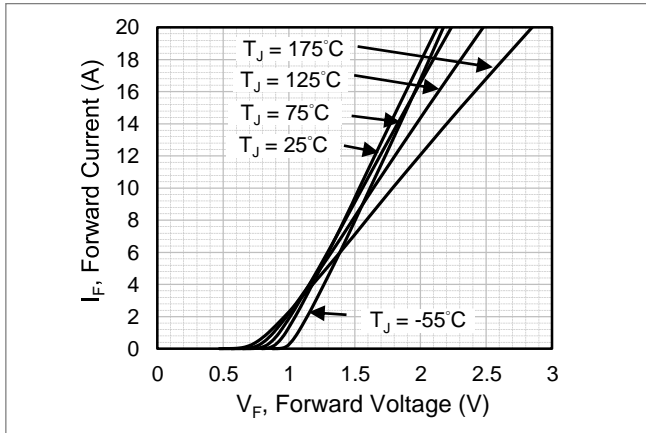
Maximum Ratings and Thermal Characteristics ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise specified)

PARAMETER		SYMBOL	LIMIT	UNITS
Repetitive Peak Reverse Voltage		V_{RRM}	650	V
DC Blocking Voltage		V_{DC}	650	V
Continuous Forward Current	$T_C = 145\text{ }^\circ\text{C}$	I_F	10	A
Repetitive Peak Surge Current <i>Half Sine Wave, D=0.1</i>	$T_C = 25\text{ }^\circ\text{C}$, $t_p = 10\text{ms}$	I_{FRM}	40	A
	$T_C = 125\text{ }^\circ\text{C}$, $t_p = 10\text{ms}$		36	
Peak Forward Surge Current <i>Half Sine Wave</i>	$T_C = 25\text{ }^\circ\text{C}$, $t_p = 10\text{ms}$	I_{FSM}	44	A
	$T_C = 125\text{ }^\circ\text{C}$, $t_p = 10\text{ms}$		40	
Peak Forward Surge Current $t_p = 10\mu\text{s}$, Pulse			550	A
Maximum Power Dissipation		P_{total}	102.7	W
Operating Junction Temperature Range		T_J	-55~175	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-55~175	$^\circ\text{C}$

Electrical Characteristics ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage Drop	V_F	$I_F = 10\text{ A}, T_J = 25\text{ }^\circ\text{C}$	-	1.5	1.7	V
		$I_F = 10\text{ A}, T_J = 175\text{ }^\circ\text{C}$	-	1.8	-	
Reverse Leakage Current	I_R	$V_R = 650\text{ V}, T_J = 25\text{ }^\circ\text{C}$	-	3	70	μA
		$V_R = 650\text{ V}, T_J = 175\text{ }^\circ\text{C}$	-	0.04	-	mA
Total Capacitive Charge	Q_C	$I_F = 10\text{ A}, V_R = 400\text{V}$	-	20	-	nC
Total Capacitance	C	$V_R = 1\text{V}, f = 1\text{MHz}$	-	364	-	pF
		$V_R = 200\text{V}, f = 1\text{MHz}$	-	35.4	-	pF
		$V_R = 400\text{V}, f = 1\text{MHz}$	-	27	-	pF
Capacitance Stored Energy	E_C	$V_R = 400\text{V}$	-	3	-	μJ
Thermal Resistance	$R_{\theta JC}$		-	1.46	-	$^\circ\text{C/W}$

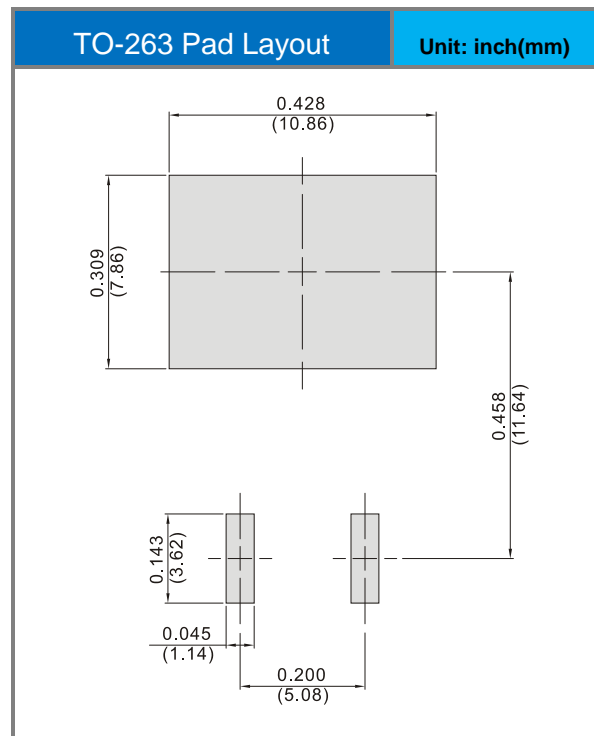
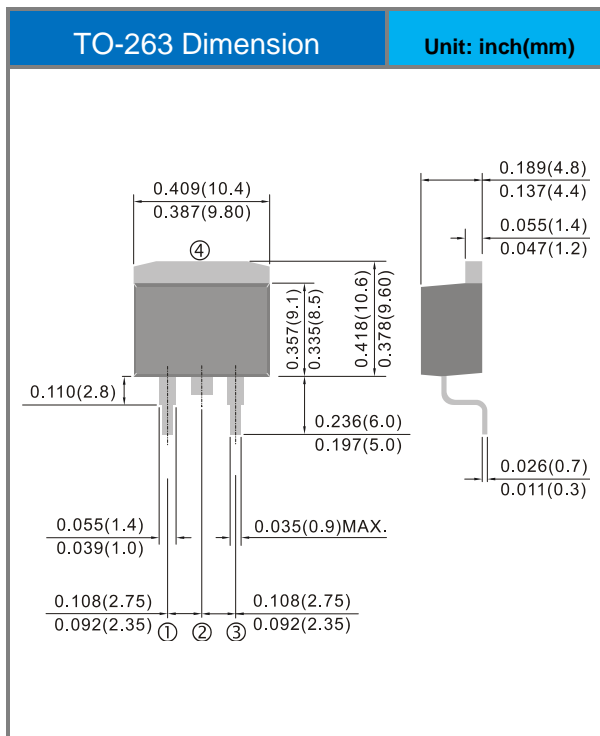
TYPICAL CHARACTERISTIC CURVES



Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PCDE1065G1	TO-263	50pcs / Tube 800pcs / Reel	CDE1065G1

Packaging Information & Mounting Pad Layout



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