

# Silicon Carbide Schottky Barrier Diode



### Features

- Temperature Independent Switching Behavior
- High Surge Current Capability
- Positive Temperature Coefficient on VF
- 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

# TO-263

### Application

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

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

PARAMETE	SYMBOL	LIMIT	UNITS		
Repetitive Peak Reverse Voltage	Vrrm	650	V		
DC Blocking Voltage	V <sub>DC</sub>	650	V		
Continuous Forward Current	Tc= 145 °C	IF	8	А	
Repetitive Peak Surge Current	$T_{C}=25 \circ C$ , $t_{p}=10 ms$		32	А	
Half Sine Wave, D=0.1	Tc=125 °C , tp =10ms	IFRM	24		
Peak Forward Surge Current	$T_C= 25 \circ C$ , $t_p = 10 ms$		36	A	
Half Sine Wave	$T_C=125 \circ C$ , $t_p =10ms$		32		
Peak Forward Surge Current $t_p = 10us, Pulse$	IFSM	480	A		
Maximum Power Dissipation	P <sub>total</sub>	78.5	W		
Operating Junction Temperature Ra	TJ	-55~175	°C		
Storage Temperature Range	Тѕтс	-55~175	°C		

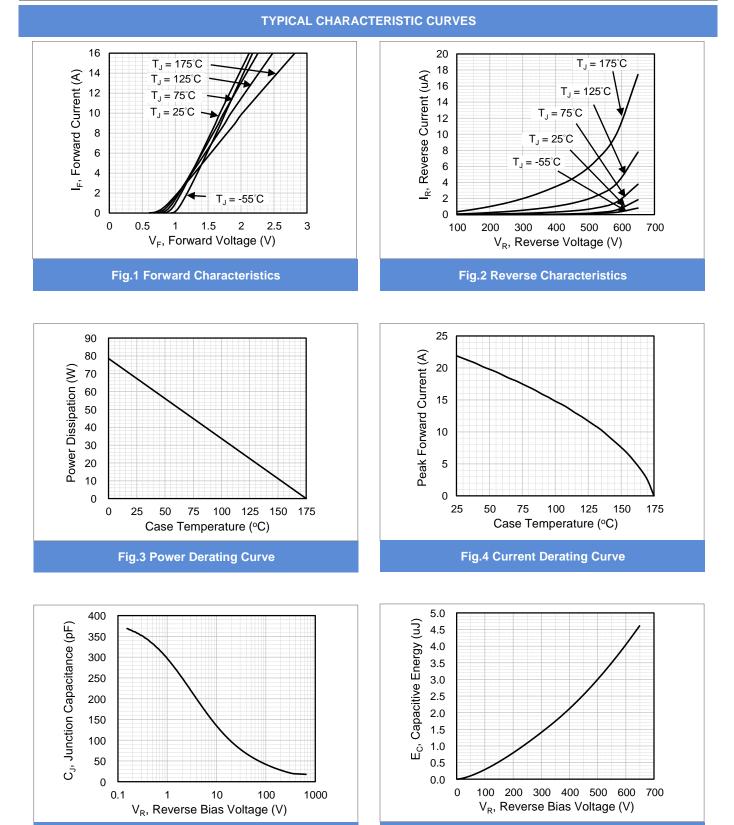


# **Electrical Characteristics** ( $T_c = 25$ °C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS	
Forward Voltage Drop	VF	I <sub>F</sub> = 8 A, T <sub>J</sub> = 25 °C	-	1.5	1.7	- V	
		I <sub>F</sub> = 8 A, T <sub>J</sub> = 175 °C	-	1.8	-		
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> = 650 V, T <sub>J</sub> = 25 °C	-	3	60	μA	
		V <sub>R</sub> = 650 V, T <sub>J</sub> = 175 °C	-	0.03	-	mA	
Total Capacitive Charge	Qc	I <sub>F</sub> = 8 A, V <sub>R</sub> = 400V	-	15.7	-	nC	
Total Capacitance	С	$V_R = 1V$ , f = 1MHz	-	296	-	pF	
		V <sub>R</sub> = 200V, f = 1MHz	-	27.2	-	pF	
		V <sub>R</sub> = 400V, f = 1MHz	-	19.1	-	pF	
Capacitance Stored Energy	Ec	V <sub>R</sub> = 400V	-	2.3	-	μJ	
Thermal Resistance	Rejc		-	1.91	-	°C/W	







**Fig.5 Typical Junction Capacitance** 

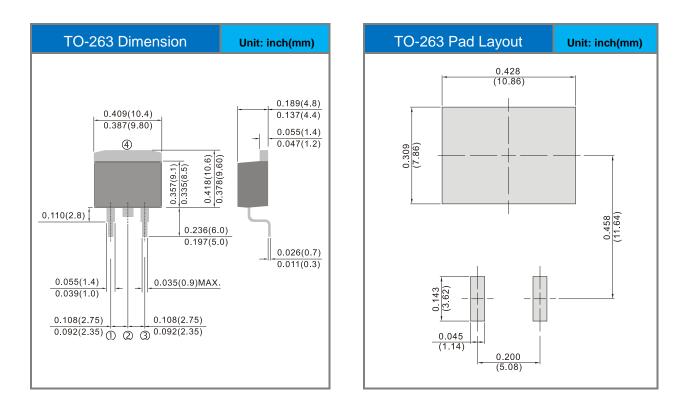
Fig.6 Capacitance Stored Energy



## **Product and Packing Information**

Part No.	Package Type	Packing Type	Marking
PCDB0865G1	TO-263	50pcs / Tube	
		800pcs / Reel	CDB0865G1

# Packaging Information & Mounting Pad Layout





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