



iS065C04CE

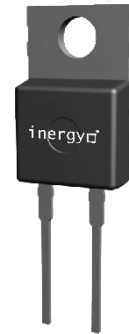
Silicon-Carbide Schottky Barrier Diode

Datasheet

1. Product Information

1.1 Features

- Zero Reverse Recovery
- Temperature-Independent Switching Behavior
- Positive Temperature Coefficient Device Suitable for Parallel Connection Application
- Junction Temperature Range from -55°C to 175°C
- Suitable for High Power/Temperature Application
- High Surge Current Ruggedness and High Reliability



1.2 Package Type

TO220A-2L

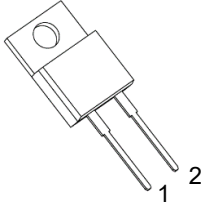
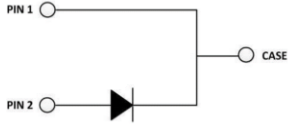
1.3 Quick Reference

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Limiting Values						
P_{tot}	Total Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	-	-	70	W
I_F	Forward Current	$T_C = 25\text{ }^\circ\text{C}$	-	-	14	A
		$T_C = 135\text{ }^\circ\text{C}$	-	-	7	
		$T_C = 155\text{ }^\circ\text{C}$	-	-	4	
Static Characteristics						
V_{RRM}	Peak Repetitive Reverse Voltage	$T_C = 25\text{ }^\circ\text{C}$	650	-	-	V
V_F	Forward Voltage	$T_C = 25\text{ }^\circ\text{C}, I_F = 4\text{ A}$	-	1.30	1.50	
		$T_C = 175\text{ }^\circ\text{C}, I_F = 4\text{ A}$	-	1.55	1.80	

2. Ordering Code & Marking Information

Ordering Code	Marking Information
iS065C04CE	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> iS065C04C XXXXX </div> X : Date Code

3. Pin Description

Pin	Description	Simplified Outline	Symbol
1	Cathode(-)		
2	Anode(+)		

4. Limiting Values

Symbol	Parameter		Rating	Unit
V _{DC}	DC Reverse Voltage	T _C = 25 °C	650	V
I _F	Continuous Forward Current	T _C = 25 °C	14	A
		T _C = 135 °C	7	
		T _C = 155 °C	4	
I _{FRM}	Surge Repetitive Current	T _C = 25 °C, t _{PW} = 10 ms, half sine wave D = 0.1	25	A
I _{FSM}	Surge Non-Repetitive Current	T _C = 25 °C, t _{PW} = 10 ms, half sine pulse	36	
P _D	Total Power Dissipation	T _C = 25 °C	70	W
T _{stg}	Storage Temperature		- 55 ~ 175	°C
T _j	Operation Junction Temperature		- 55 ~ 175	
R _{θJC}	Thermal Resistance- Junction to Case		2.1	°C / W

5. Electrical Characteristics (T_C = 25 °C Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
V _{DC}	DC Blocking Voltage	I _R = 100 μA	650	-	-	V
V _F	Forward Voltage	I _F = 4 A, T _C = 25 °C	-	1.30	1.50	
		I _F = 4 A, T _C = 175 °C	-	1.55	1.80	
I _R	Reverse Current	V _R = 650 V, T _C = 25 °C	-	1	12	μA
		V _R = 650 V, T _C = 175 °C	-	2	32	
Dynamic Characteristics						
C	Total Capacitance	V _R = 0 V, f = 1 MHz	-	215	-	pF
		V _R = 200 V, f = 1 MHz	-	25	-	
		V _R = 400 V, f = 1 MHz	-	23	-	
Q _C	Total Capacitance Charge	V _R = 400 V	-	13	-	nC
E _C	Capacitance Stored Energy	V _R = 400 V	-	2	-	μJ

6. Typical Characteristics (cont.)

Fig 1. Power Capability

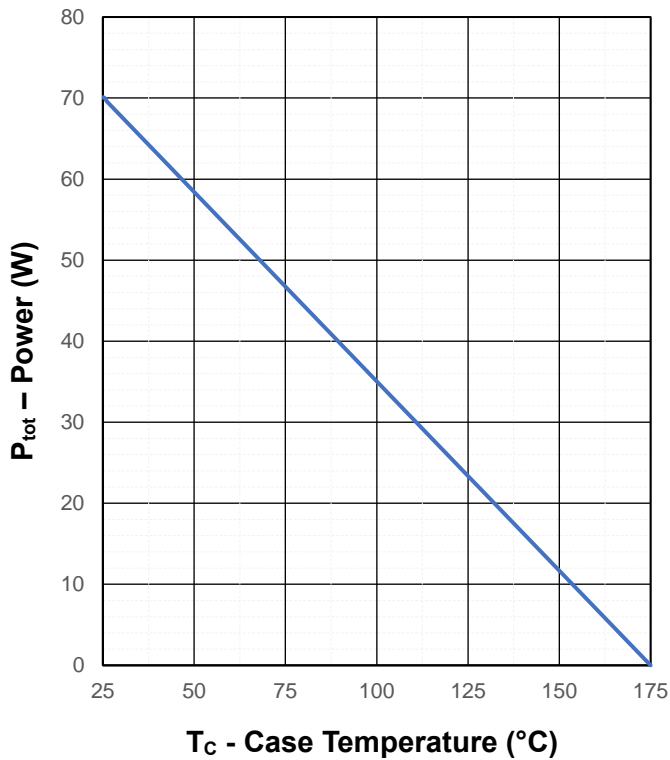


Fig 2. Current Capability

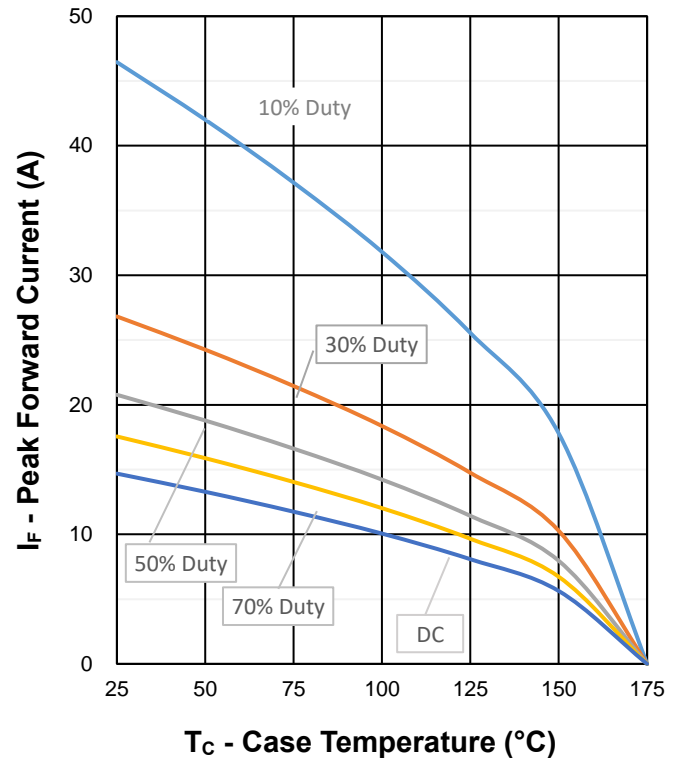


Fig 3. Forward Characteristics

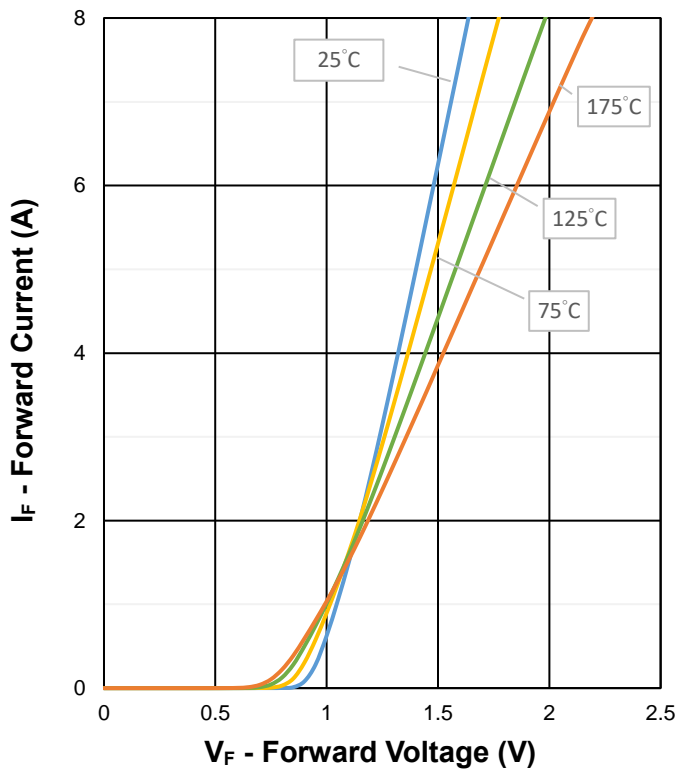
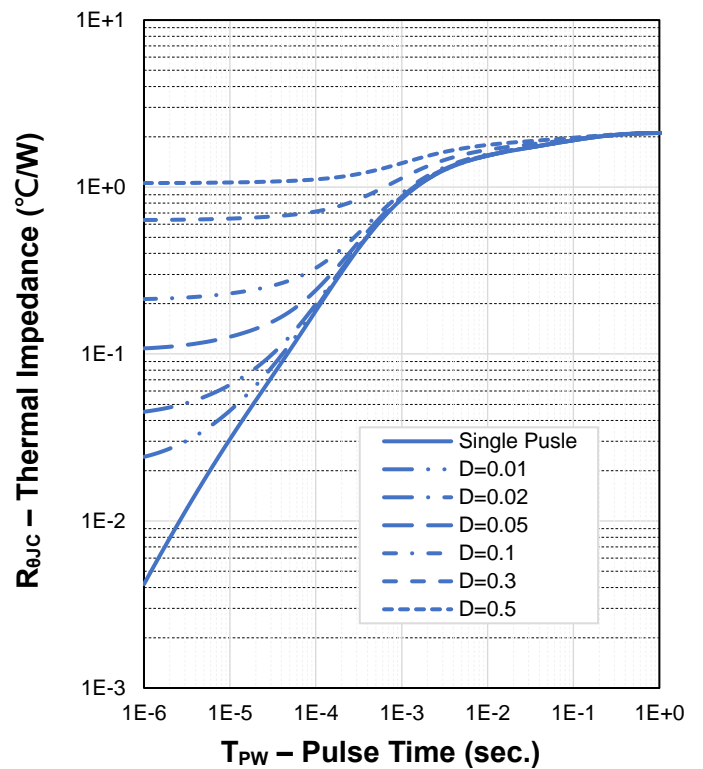


Fig 4. Transient Thermal Impedance



6. Typical Characteristics

Fig 5. Reverse Characteristics

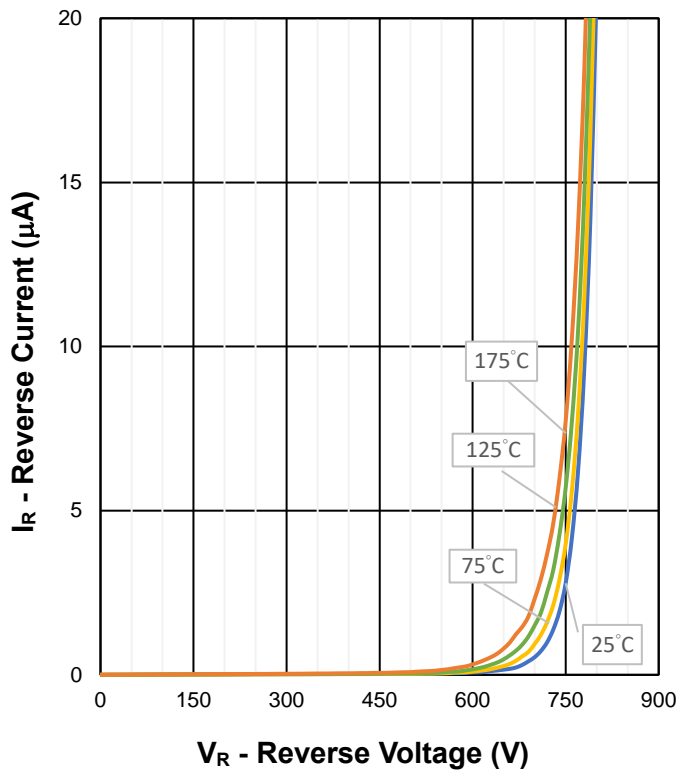


Fig 6. Capacitance vs. Reverse Voltage

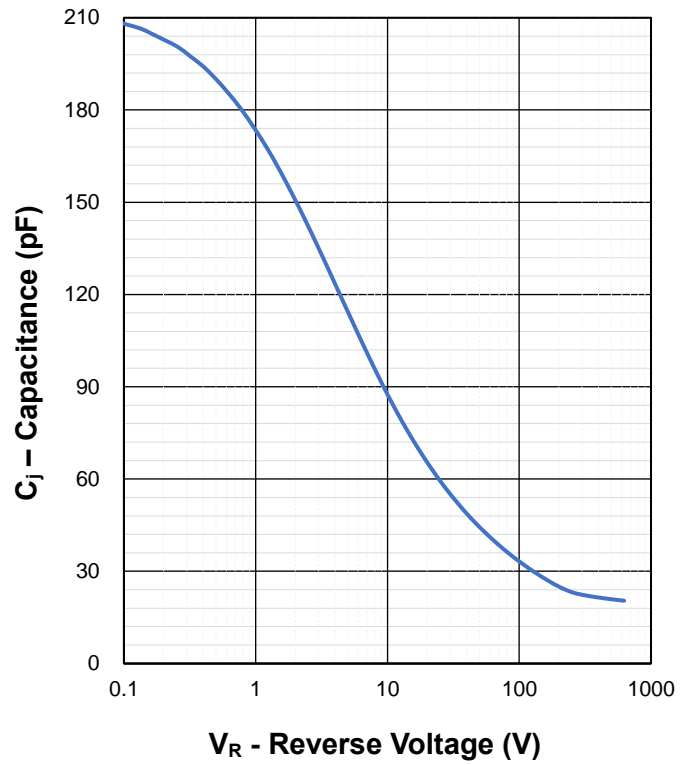


Fig 7. Capacitance Charge

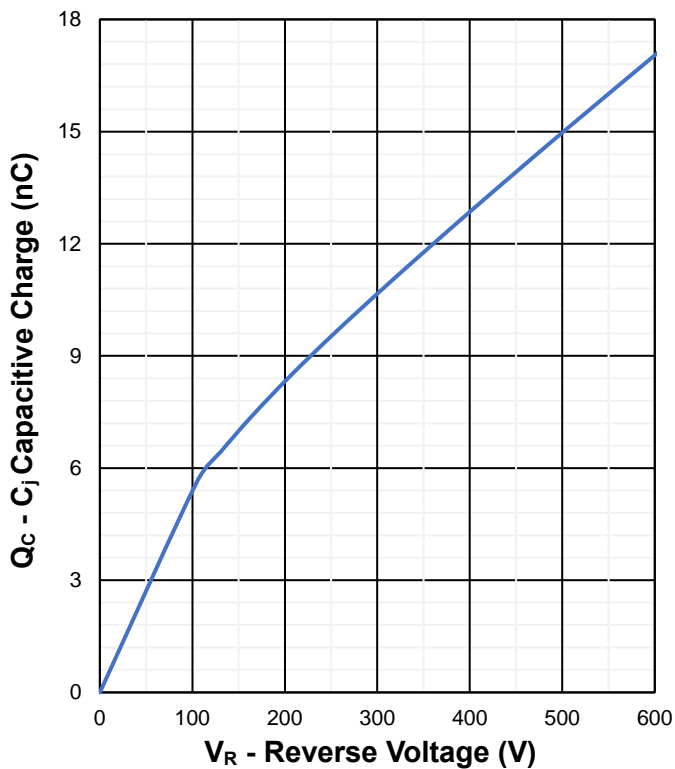
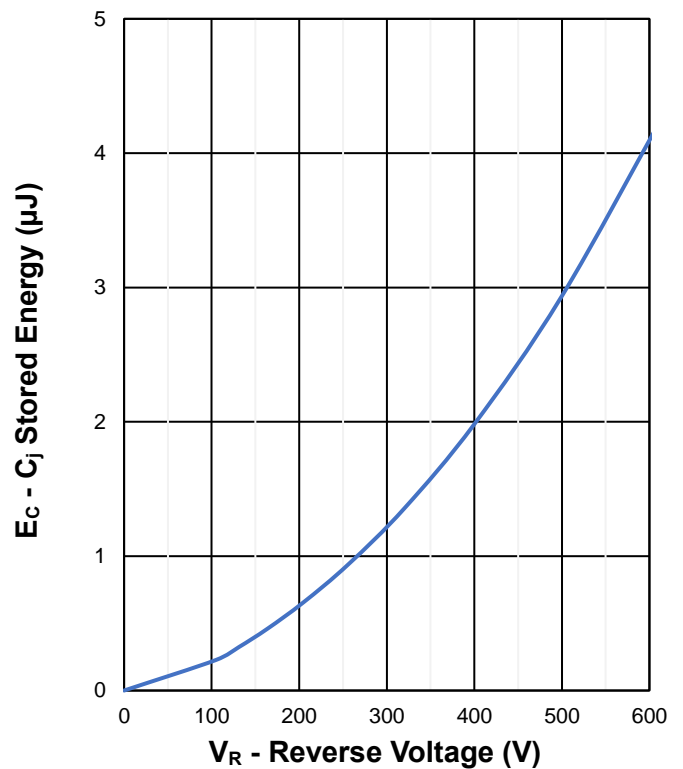


Fig 8. Capacitance Stored Energy



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