SiC Schottky Barrier Diode
GSC2D0465

Features

- Extremely low reverse current
- No reverse recovery current
- Temperature independent switching
- Positive temperature coefficient on V_F
- Excellent surge current capability
- Low capacitive charge

HF

Applications

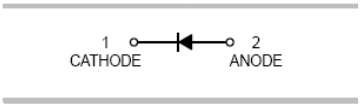
- Switch mode power supplies (SMPS)
- Uninterruptible power supplies
- Motor drivers
- Power factor correction

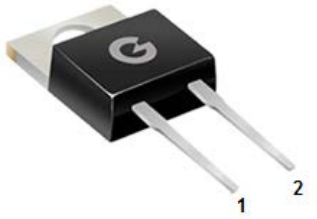
Mechanical Data

- Case: TO-220AC
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Key performance parameters

Type	GSC2D0465
V_{DC}	650V
I_F @ 150°C	4A
Q_C@400V	13nC
T_j	175°C





TO-220AC

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
GSC2D0465	TO-220AC	50 pcs / Tube	GSC2D0465

Maximum Ratings (@ T_J = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	650	V
DC Blocking Voltage	V_{DC}	650	V
Continuous Forward Current (T_C = 25°C)	I_F	11	A
Continuous Forward Current (T_C = 150°C)	I_F	4	A
Peak Forward Surge Current (10ms single half sine-wave, T_C = 25°C)	I_{FSM}	31	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T_C = 25°C)	P_D	50	W
Power Dissipation (T_C = 110°C)	P_D	21	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	3	°C/W
Operating junction Temperature	T_J	-55 ~ +175	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ T_J = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 4A, T_J = 25°C	-	1.3	1.5	V
		I_F = 4A, T_J = 175°C	-	1.55	2.2	V
Maximum Peak Reverse Current	I_R	V_R = 650V, T_J = 25°C	-	0.1	20	μA
		V_R = 650V, T_J = 175°C	-	2.5	100	μA
Total Capacitive Charge	Q_C	V_R =400V	-	13	-	nC
Total Capacitance	C_J	V_R = 0V, f = 1 MHz	-	228	-	pF
		V_R = 200V, f = 1 MHz	-	31	-	
		V_R = 400V, f = 1 MHz	-	27	-	

Ratings and Characteristics Curves (@ T_A = 25°C unless otherwise specified)

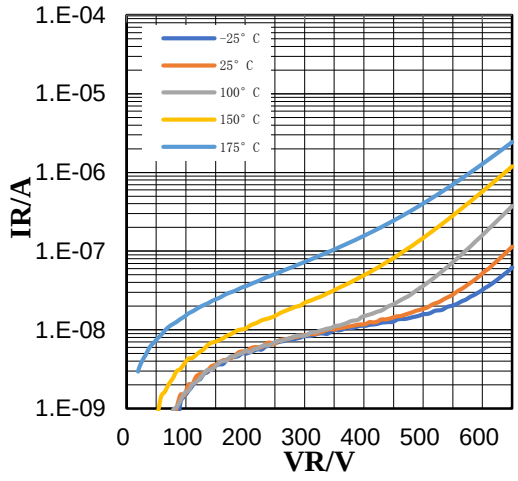


Fig 1 Typical Reverse Characteristic

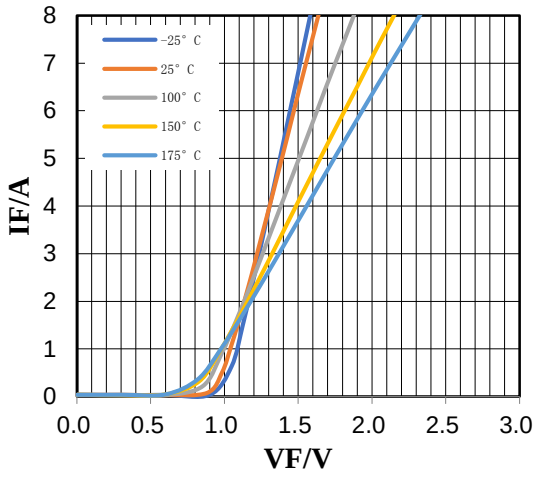


Fig 2 Typical Forward Characteristics

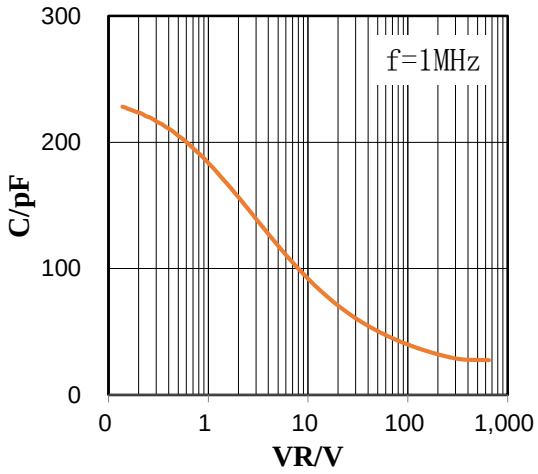


Fig 3 Capacitance Characteristics

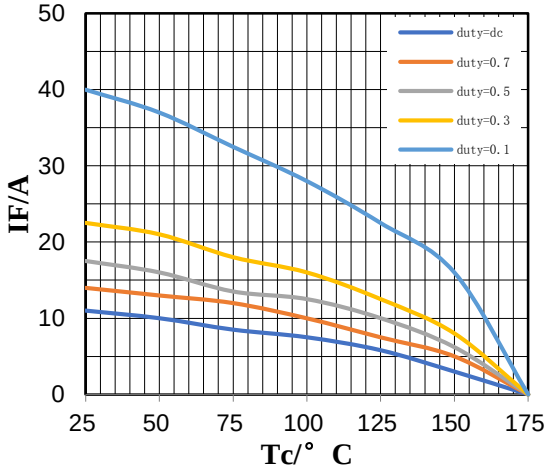


Fig 4 Diode Forward Current as Function of Temperature, D = duty cycle

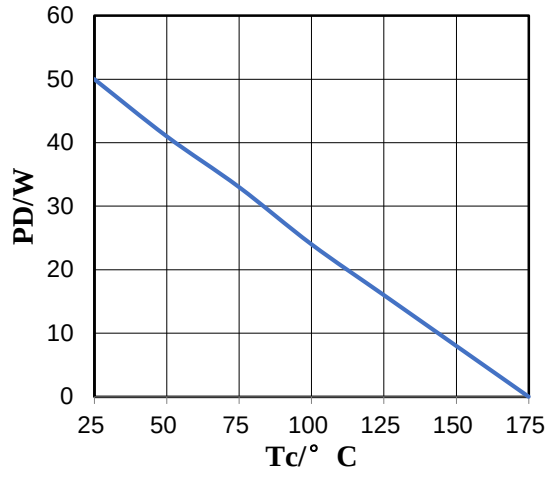
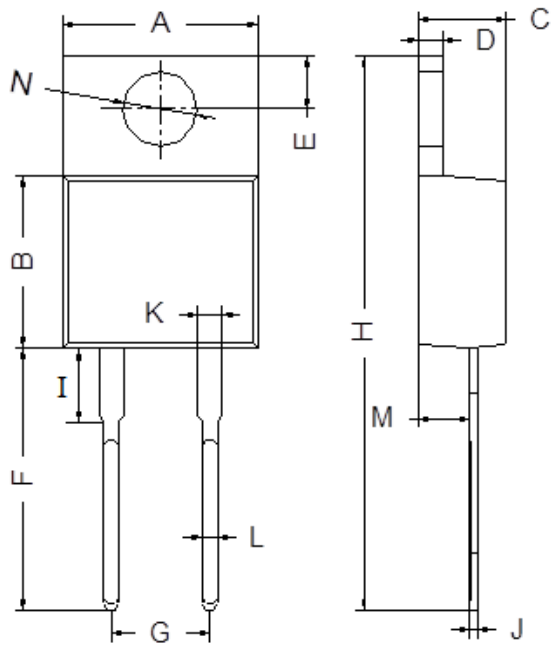


Fig 5 Power Dissipation

Package Outline Dimensions (Unit: mm)



TO-220AC		
Dimension	**Min.**	**Max.**
A	9.80	10.30
B	8.70	9.10
C	4.37	4.77
D	1.07	1.47
E	2.64	2.84
F	13.14	13.74
G	4.98	5.18
H	28.03	28.83
I	3.50	4.00
J	0.28	0.48
K	1.22	1.32
L	0.71	0.91
M	2.40	2.60
N	3.76	3.96

IMPORTANT NOTICE