

## 50A, 650V Silicon Carbide Schottky Diode

### Features

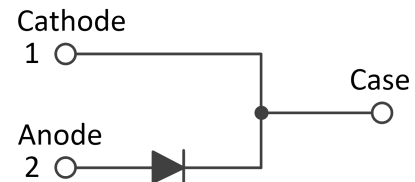
- High-Frequency Operation
- Zero Reverse Recovery Current
- Temperature-Independent Switching
- Extremely Fast Switching
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-247AC

### Applications

- Boost Diodes in PFC or DC/DC stages
- LED Lighting Power Supplies
- Power Factor Correction



### Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 30 units per plastic tube

### Maximum Ratings & Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	GS50D065SP	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	650	V
Working peak reverse voltage	V <sub>RWM</sub>	650	V
Maximum DC blocking voltage	V <sub>DC</sub>	650	V
Maximum average forward rectified current	T <sub>C</sub> =25°C	157	A
	T <sub>C</sub> =135°C	91	
	T <sub>C</sub> =160°C	50	
Peak forward surge current, t <sub>p</sub> =10ms, Half Sine Pulse	I <sub>FSM</sub>	460	A
Power dissipation	T <sub>C</sub> =25°C	349	W
	T <sub>C</sub> =110°C	151	
Operating junction temperature range	T <sub>J</sub>	-55 to +175	°C
Storage temperature range	T <sub>STG</sub>	-55 to +175	°C

## Electrical Specifications (T<sub>A</sub>=25°C unless otherwise noted)

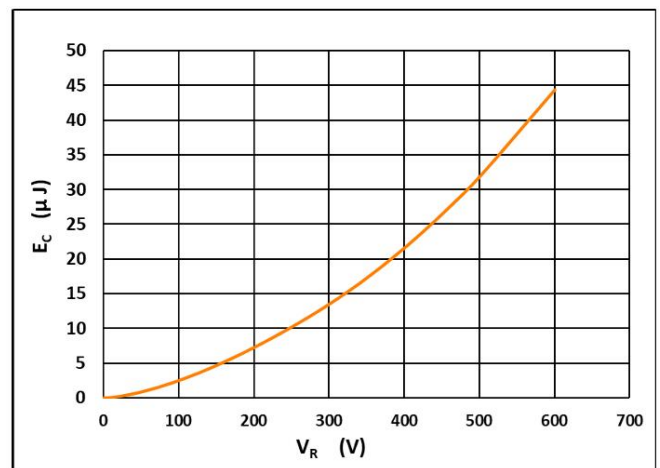
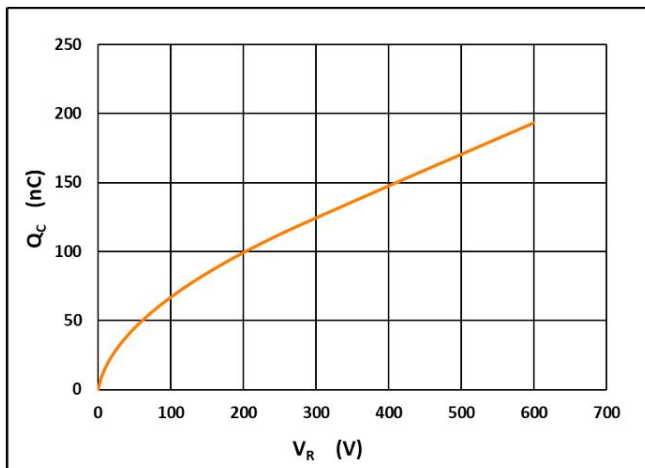
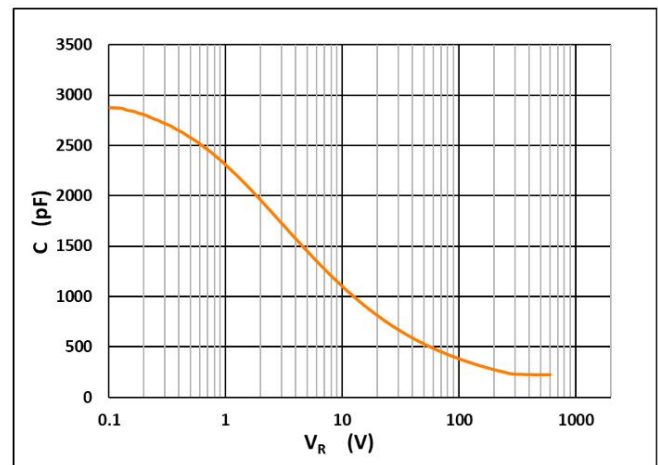
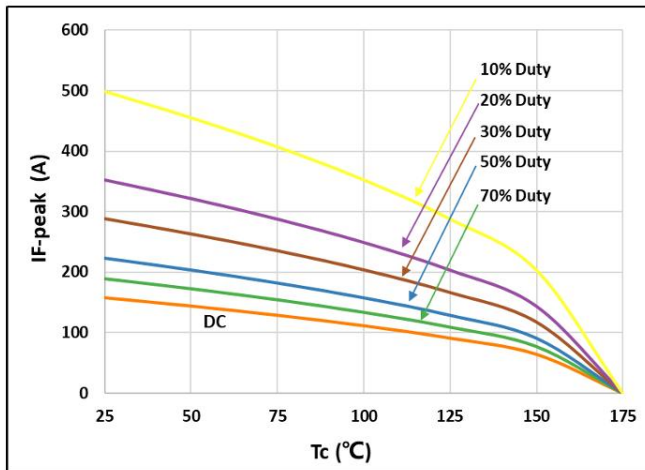
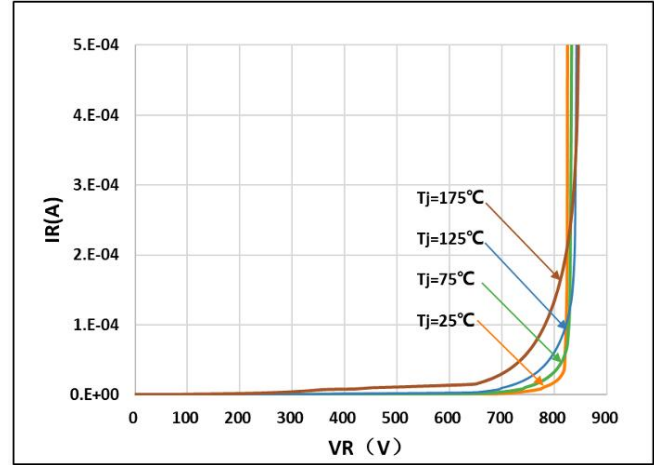
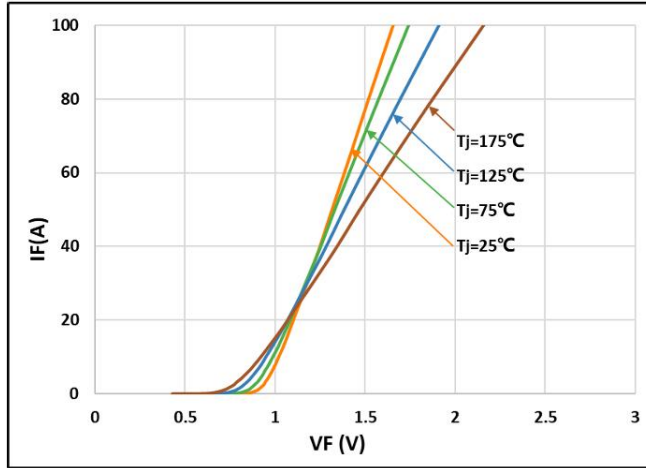
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage	V <sub>F</sub>	I <sub>F</sub> =50A, T <sub>J</sub> =25°C	1.3	1.55	V
		I <sub>F</sub> =50A, T <sub>J</sub> =175°C	1.5	-	
Reverse leakage current @rated V <sub>R</sub>	I <sub>R</sub>	V <sub>R</sub> =650V, T <sub>J</sub> =25°C	10	50	μA
		V <sub>R</sub> =650V, T <sub>J</sub> =175°C	20	200	
Total capacitive charge	Q <sub>C</sub>	V <sub>R</sub> =400V, T <sub>J</sub> =25°C	192	-	nC
Total capacitance	C	V <sub>R</sub> =400V, T <sub>J</sub> =25°C, f=1MHz	227	-	pF

## Thermal-Mechanical Specifications (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	0.43	-	°C /W

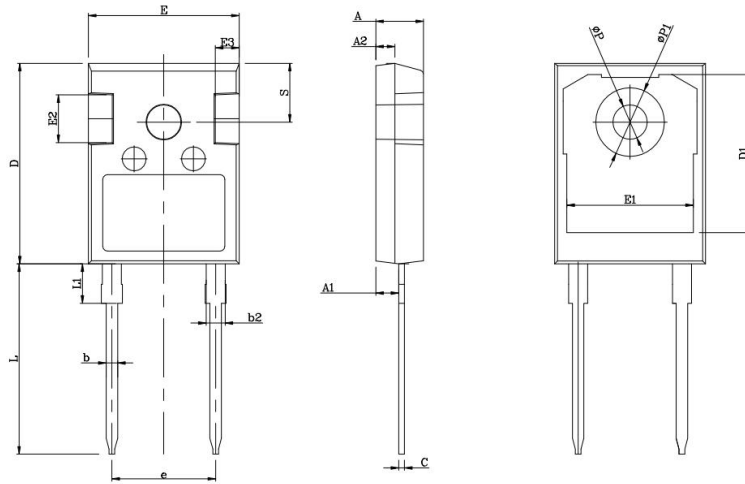
## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)



## Package Outline Dimensions (Unit: millimeters)

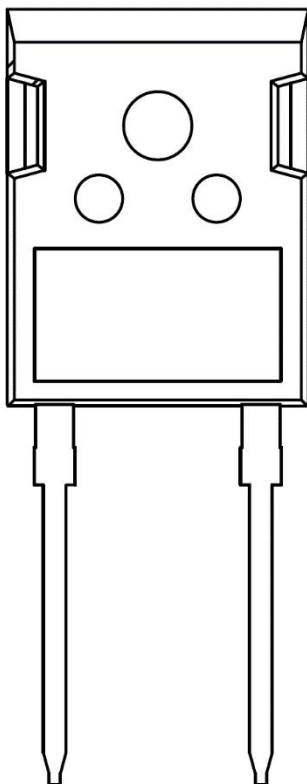
### TO-247AC




COMMON DIMENSIONS

SYMBOL	mm		
	Min	Nom	Max
A	4.80	5.00	5.20
A1	2.23	2.41	2.59
A2	1.85	2.00	2.15
b	1.11	1.21	1.36
b2	1.91	2.01	2.21
c	0.51	0.61	0.75
D	20.80	21.00	21.30
D1	16.25	16.55	16.85
E	15.50	15.80	16.10
E1	13.00	13.26	13.56
E2	4.80	5.00	5.20
E3	2.30	2.50	2.70
e	10.88BSC		
L	19.82	19.92	20.22
L1	3.94	4.12	4.30
ØP	3.66	3.68	3.75
ØP1	7.08	7.19	7.30
S	6.15BSC		

## Marking Outline



1. Logo Mark:
2. Data code: XXXX
3. Part Name: GS50D065SP
4. Polarity : 

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