Silicon Carbide Power Schottky Diode

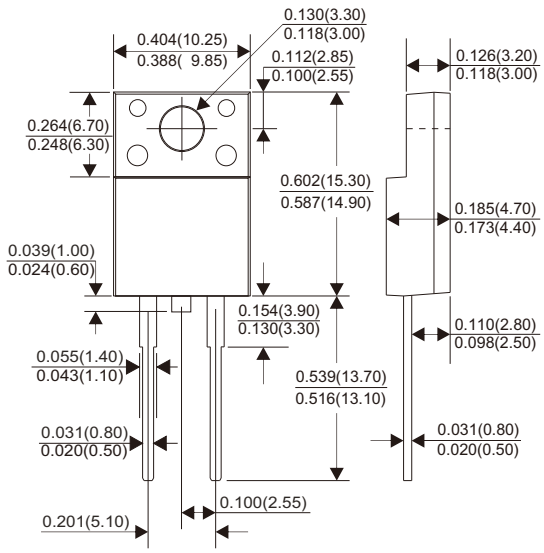
CDBJFSC5650-G

Reverse Voltage: 650 V
Forward Current: 5 A
RoHS Device

Features

- Rated to 650V at 5 Amps.
- Short recovery time.
- High speed switching possible.
- High frequency operation.
- High temperature operation.
- Temperature independent switching behaviour.
- Positive temperature coefficient on VF.

TO-220F

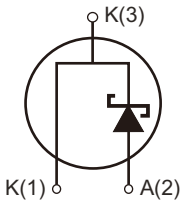


Dimensions in inches and (millimeter)

Mechanical data

- Case: TO-220F, molded plastic.

Circuit Diagram



Maximum Rating (at T_A=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Repetitive peak reverse voltage		V_{RRM}	650	V
Surge peak reverse voltage		V_{RSM}	650	V
DC blocking voltage		V_{DC}	650	V
Typical continuous forward current	Tc = 150°C	I_F	5	A
Repetitive peak forward surge current	Tc = 25°C, tp = 10ms Half sine wave, D = 0.3	I_{FRM}	30	A
Non-repetitive peak forward surge current	Tc = 25°C, tp = 10ms Half sine wave	I_{FSM}	60	A
Power dissipation	Tc = 25°C	P_{TOT}	30.9	W
	Tc = 110°C		13.4	
Typical thermal resistance	Junction to case	$R_{\theta JC}$	4.85	°C/W
Operating junction temperature range		T_J	-55 ~ +175	°C
Storage temperature range		T_{STG}	-55 ~ +175	°C

Electrical Characteristics (at T_A=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Typ	Max	Unit
Forward voltage	I_F = 5 A , T_J = 25°C	V_F	1.35	1.7	V
	I_F = 5 A , T_J = 175°C		1.55		
Reverse current	V_R = 650V , T_J = 25°C	I_R	10	100	μA
	V_R = 650V , T_J = 175°C		15		
Total capacitive charge	V_R = 400V , T_J = 150°C $Q_C = \int_0^{V_R} C(V)\,dv$	Q_C	23		nC
Total capacitance	V_R = 0V , T_J = 25°C , f = 1 MHz	C	430		pF
	V_R = 200V , T_J = 25°C , f = 1 MHz		44		
	V_R = 400V , T_J = 25°C , f = 1 MHz		42.5		

Typical Characteristics (CDBJFSC5650-G)

Fig.1 - Forward Characteristics

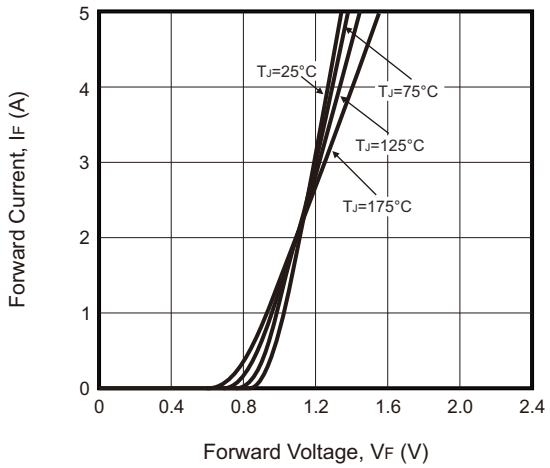


Fig.2 - Reverse Characteristics

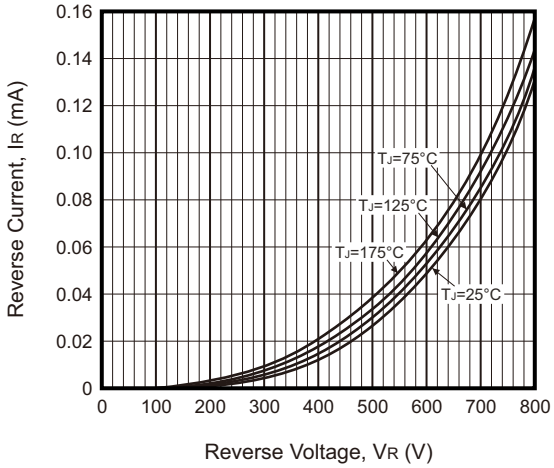


Fig.3 - Current Derating

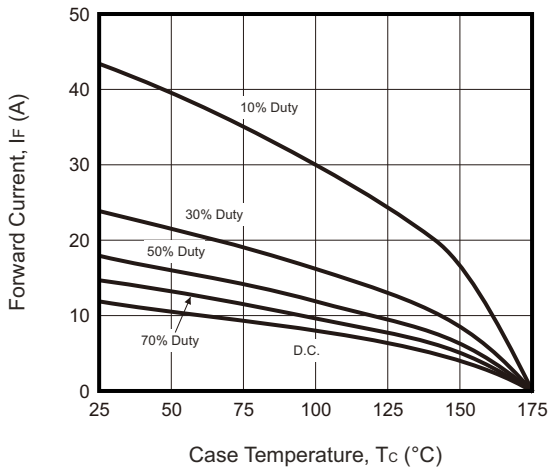
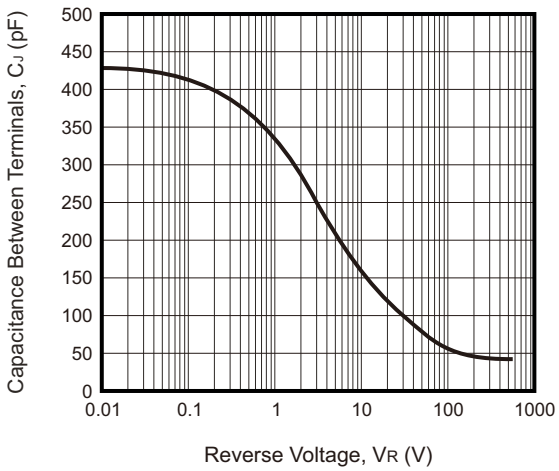
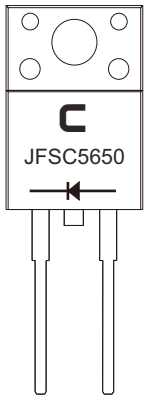


Fig.4 - Capacitance vs. Reverse Voltage

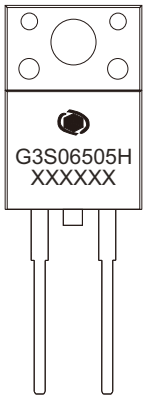


Marking Code

Part Number	Marking Code	
CDBJFSC5650-G	JFSC5650	G3S06505H



⊂ = Comchip Logo



xxxxxx = Control code
(x from 6 to 11)

Standard Packaging

Case Type	TUBE PACK	
	TUBE (pcs)	BOX (pcs)
TO-220F	50	1,000