

Features

- 3.3kV Schottky Rectifier
- Zero Reverse Recovery Current
- High-Frequency Operation
- Temperature-Independent Switching
- Extremely Fast Switching
- Positive Temperature Coefficient on V_F
- Increased Creepage/Clearance Distance

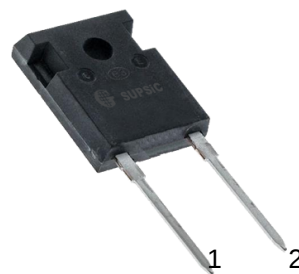
Benefits

- Replace Bipolar with Unipolar Rectifiers
- Essentially No Switching Losses
- Higher Efficiency
- Reduction of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway

Applications

- Switch Mode Power Supplies (SMPS)
- Boost diodes in PFC or DC/DC stages
- Free Wheeling Diodes in Inverter stages
- AC/DC converters

$$\begin{aligned} V_{RRM} &= 3300V \\ I_F(T_c=165^\circ C) &= 10 A \\ Q_c &= 209 nC \end{aligned}$$



TO-247-2

Part Number	Marking	Package
GC3D10330H	GC3D10330	TO-247-4



●Absolute Maximum Ratings ($T_j = 25^\circ C$)

Parameter		Symbol	Value	Unit
Reverse voltage (repetitive peak)		V_{RM}	3300	V
Reverse voltage (DC)		V_R	3300	V
Continuous forward current ($T_c=165^\circ C$)		I_F	10	A
Surge non-repetitive forward current	PW=10ms sinusoidal, $T_j=25^\circ C$	I_{FSM}	40	A
	PW=10ms sinusoidal, $T_j=165^\circ C$		10	A
	PW=10μs square, $T_j=25^\circ C$		160	A
Junction temperature		T_j	175	$^\circ C$
Range of storage temperature		T_{stg}	-55 to +175	$^\circ C$

●**Electrical characteristics** ($T_j = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
DC blocking voltage	V_{DC}	$I_R=0.3\text{mA}$	3300	-	-	V
Forward voltage	V_F	$I_F=10\text{A}, T_j=25^\circ\text{C}$	1.3	1.5	2.00	V
		$I_F=10\text{A}, T_j=150^\circ\text{C}$	-	2.5	-	V
		$I_F=10\text{A}, T_j=175^\circ\text{C}$	-	2.8	-	V
Reverse current	I_R	$V_R=3300\text{V}, T_j=25^\circ\text{C}$	-	5	50	μA
		$V_R=3300\text{V}, T_j=150^\circ\text{C}$	-	25	80	μA
		$V_R=3300\text{V}, T_j=175^\circ\text{C}$	-	30	100	μA
Total capacitance	C	$V_R=1\text{V}, f=1\text{MHz}$	-	4600	-	pF
		$V_R=3300\text{V}, f=1\text{MHz}$	-	45	-	pF
Total capacitive charge	Q_C	$V_R=2000\text{V}, di/dt=500\text{A}/\mu\text{s}$	-	209	-	nC
Switching time	t_C	$V_R=2000\text{V}, di/dt=500\text{A}/\mu\text{s}$	-	48	-	ns

Thermal Characteristics

Parameter	Symbol	Values			Unit
Thermal Resistance From Junction to Case	$R_{th(j-c)}$		0.34		$^\circ\text{C}/\text{W}$

●Electrical characteristic curves

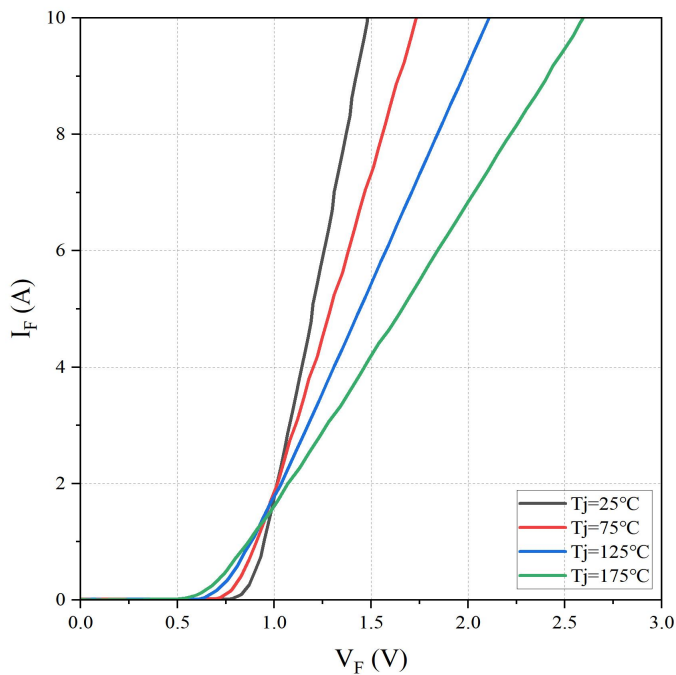


Fig 1. Forward Characteristics

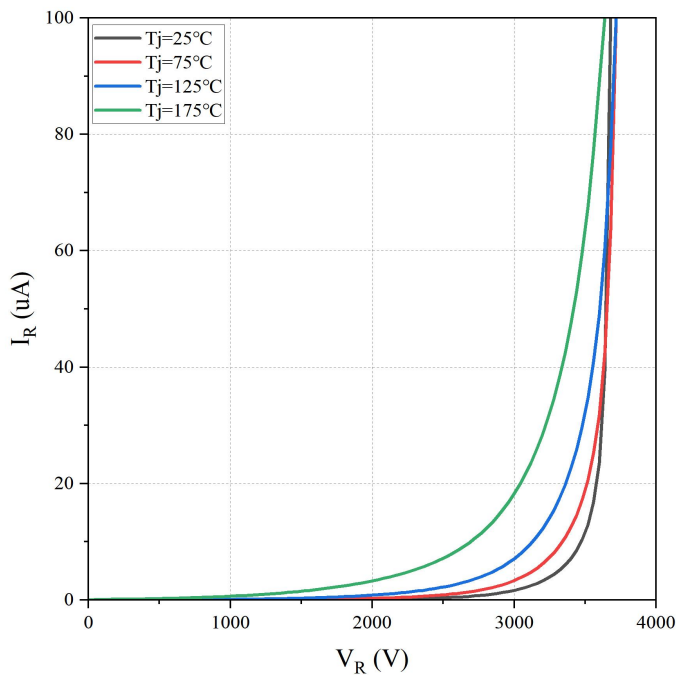


Fig 2. Reverse Characteristics

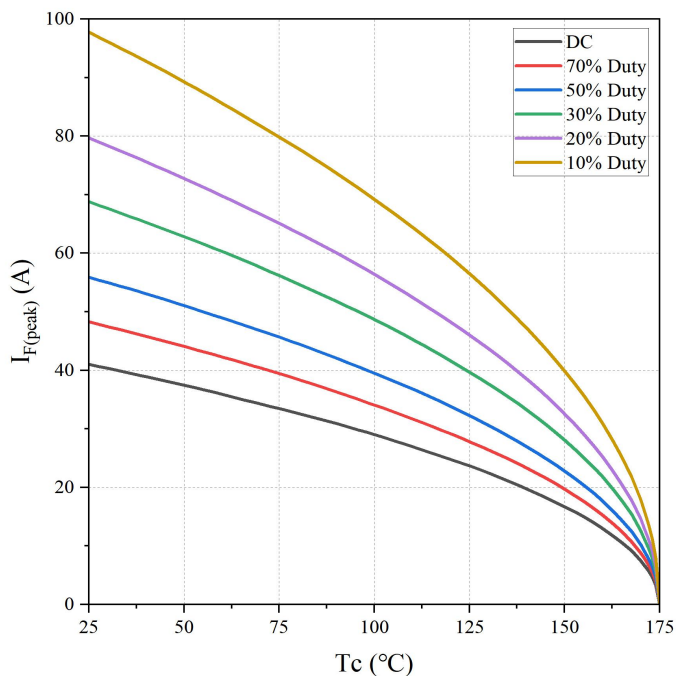


Fig 3. Current Derating

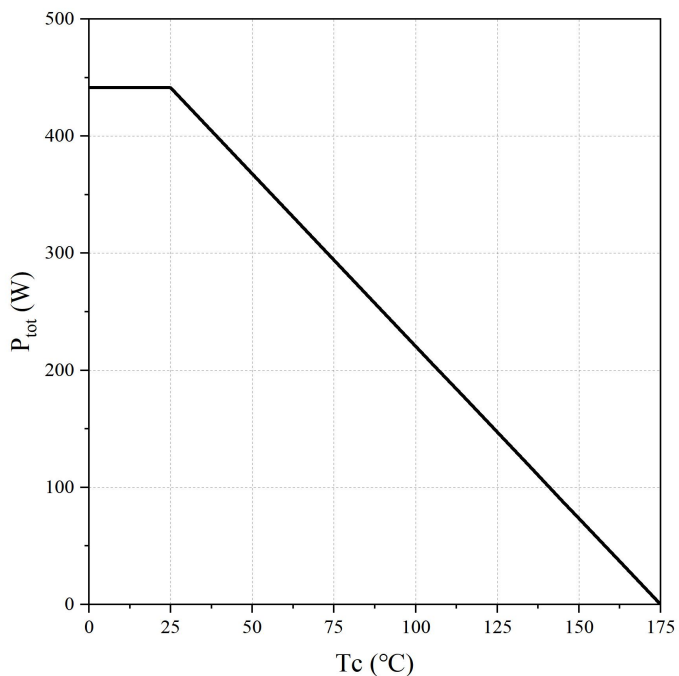


Fig 4. Power Derating

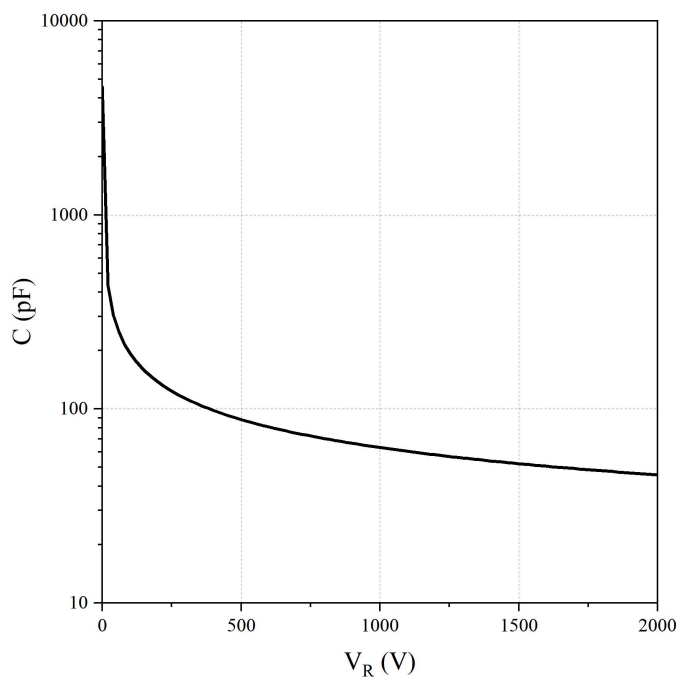


Fig 5. Capacitance vs. Reverse Voltage

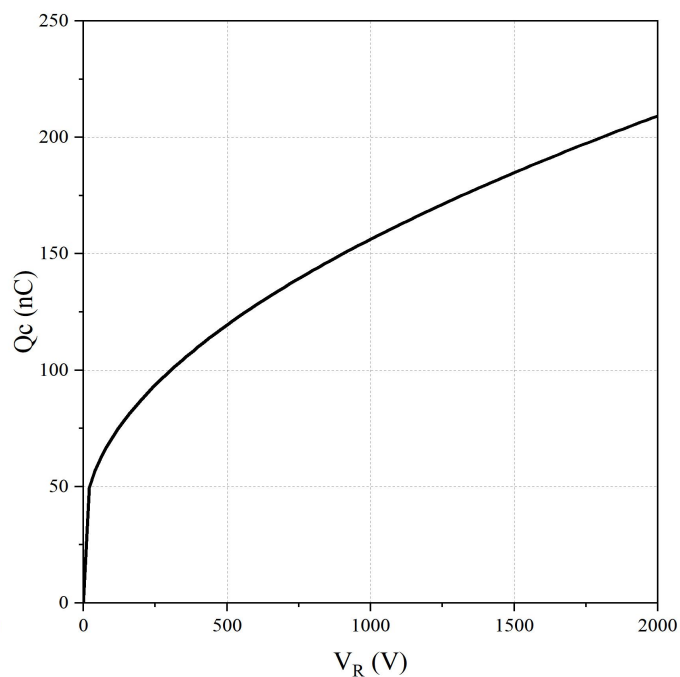


Fig 6. Reverse Charge vs. Reverse Voltage

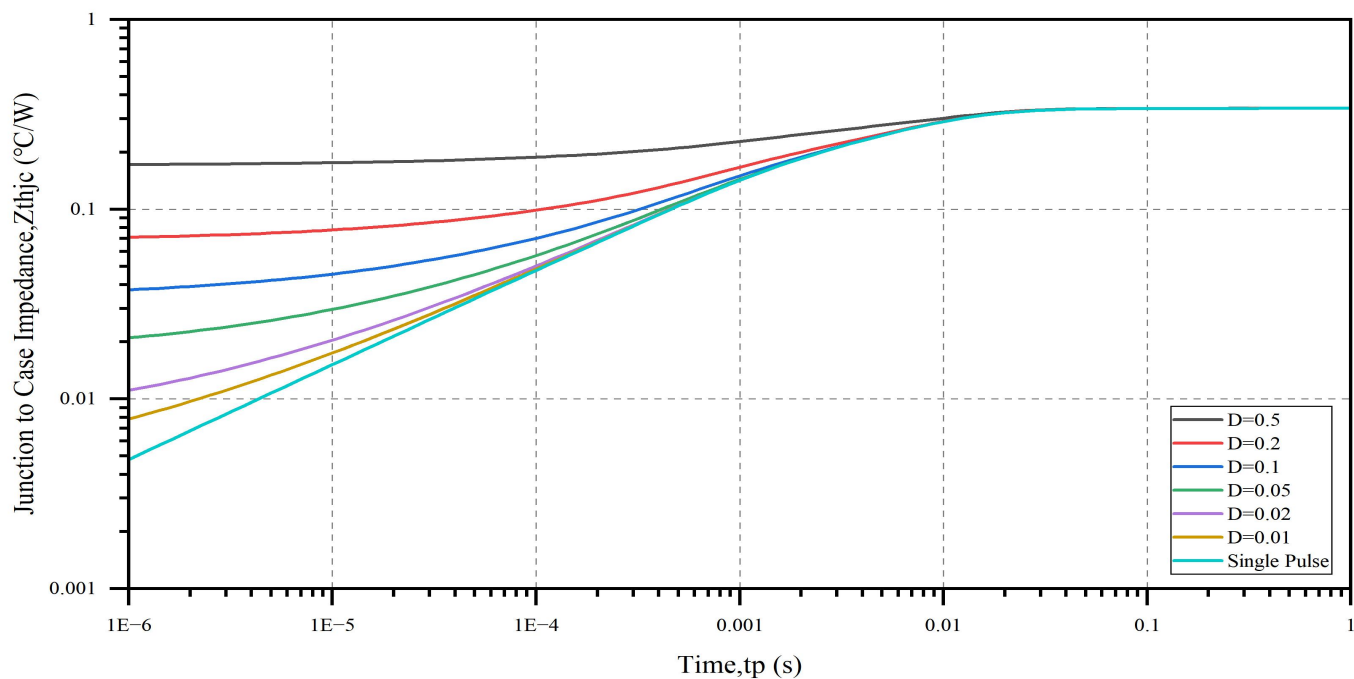
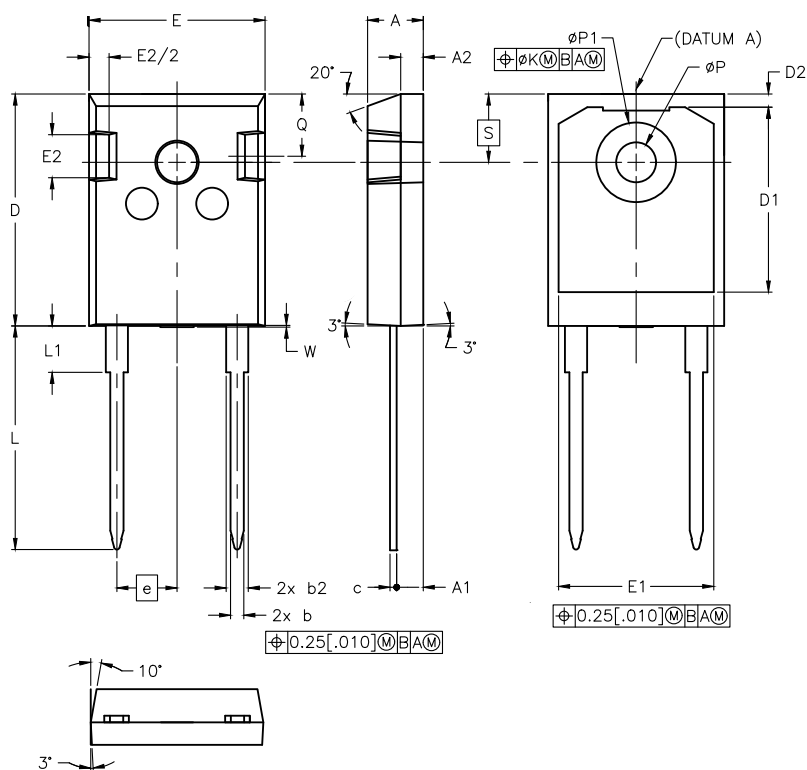


Fig 7. Current Derating

Package Dimensions

Package TO-247-2



POS	Inches		Millimeters	
	Min	Max	Min	Max
A	.190	.205	4.70	5.31
A1	.087	.102	2.21	2.59
A2	.059	.098	1.50	2.49
b	.039	.055	0.99	1.40
b2	.065	.094	1.65	2.39
c	.015	.035	0.38	0.89
D	.819	.845	20.80	21.46
D1	.515	-	13.08	-
D2	.020	.053	0.51	1.35
E	.620	.640	15.49	16.26
E1	.530	-	13.46	-
E2	.135	.157	3.43	3.99
e	.214		5.44	
ØK	.010		0.25	
L	.780	.800	19.81	20.32
L1	-	.177	-	4.50
ØP	.140	.144	3.56	3.66
ØP1	.278	.291	7.06	7.39
Q	.212	.244	5.38	6.20
S	.243		6.17	
W	-	.006	-	0.15

Recommended Solder Pad Layout

