

PD013065EB(Bare Chip) / PD013065EW(Wafer) 650V Silicon Carbide Diode

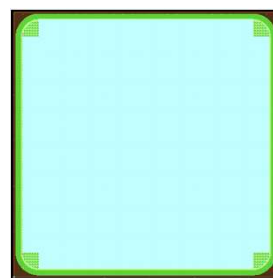
Features

- 650-Volt Schottky Rectifier
- Shorter recovery time
- High-speed switching possible
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching
- Positive Temperature Coefficient on VF
- RoHS Compliant

Applications

- Switch Mode Power Supplies
- Power Factor Correction
- Motor Drives
- HID Lighting

Chip Outline



- Wafer Size 100mm
- Thickness 370±25 um
- Chip Size 2,400um X 2,400um
- Anode Pad Size 1,900um X 1,900um
- Anode Metalization Al 3um
- Cathode Metalization Ni/Ag 0.5um

Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{RRM}	Repetitive Peak Reverse Voltage	650	V
V_{RSM}	Surge Peak Reverse Voltage	650	V
V_{DC}	DC Blocking Voltage	650	V
I_F	Continuous forward current $T_C = 25^\circ C$	13	A
I_{FSM}	Non-Repetitive Forward Surge Current $T_C = 25^\circ C$ (PW=10ms sinusoidal)	65	A
T_J, T_{stg}	Operating Junction and Storage Temperature	-55 to +175	$^\circ C$

Electrical Characteristics

$T_C = 25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
V_F	Forward Voltage	$I_F = 13\text{A}, T_C = 25^{\circ}\text{C}$	--	1.5	1.8	V
I_R	Reverse Current	$V_R = 650\text{V}, T_C = 25^{\circ}\text{C}$	--	23	56	μA
Q_C	Total Capacitive Charge	$V_R = 400\text{V}$	--	24	--	nC
C	Total Capacitance	$V_R = 1\text{V}, T_J = 25^{\circ}\text{C}, f = 1\text{MHz}$ $V_R = 520\text{V}, T_J = 25^{\circ}\text{C}, f = 1\text{MHz}$	--	505 55	--	pF

Typical Characteristics

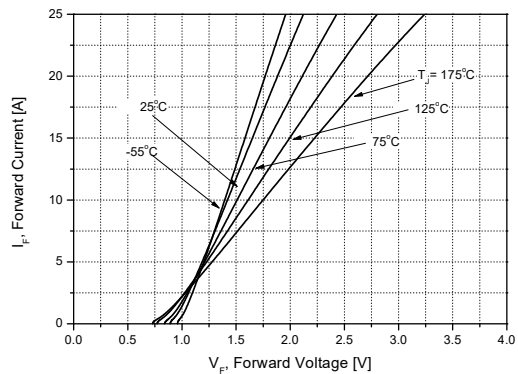


Figure 1. Forward Characteristics

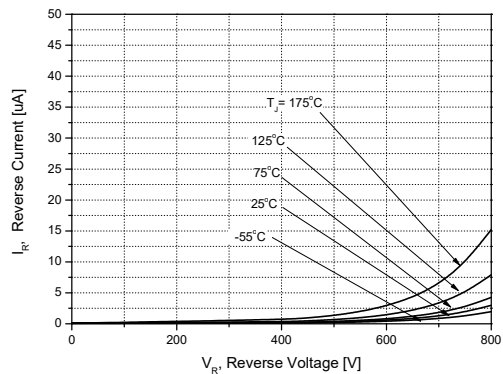


Figure 2. Reverse Characteristics

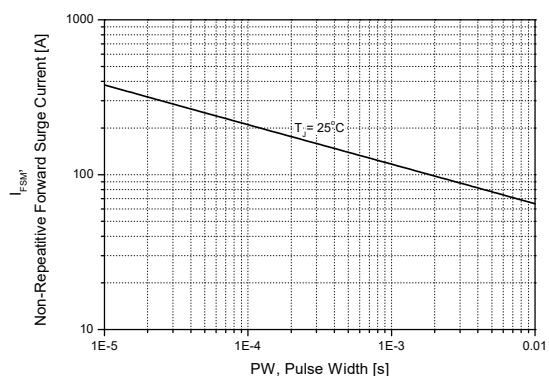


Figure 3. Non-Repetitive Peak Forward Surge Current vs. Pulse Duration

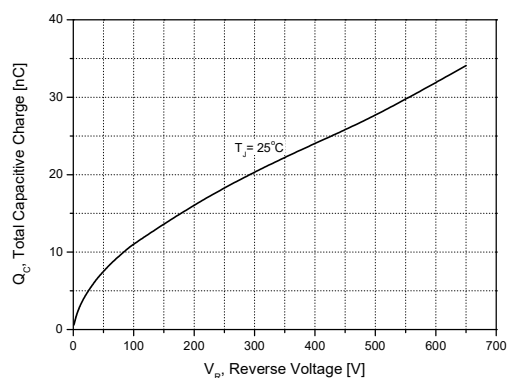


Figure 4. Total Capacitive Charge

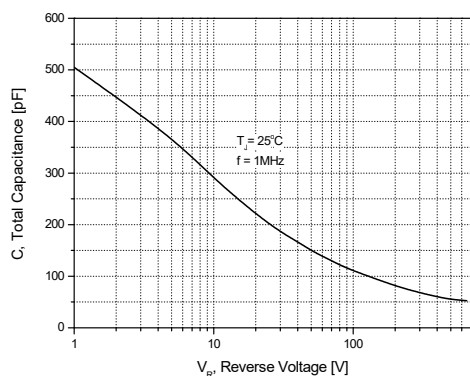


Figure 5. Total Capacitance

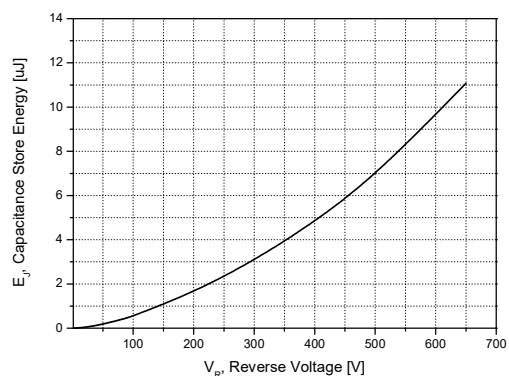
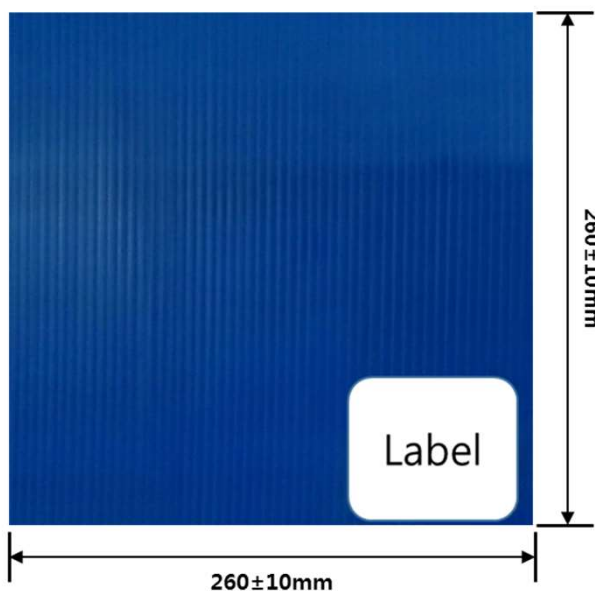


Figure 6. Capacitance Store Energy

Packing Information

Inner : Plastic PVC Sheet (Dicing Wafer)

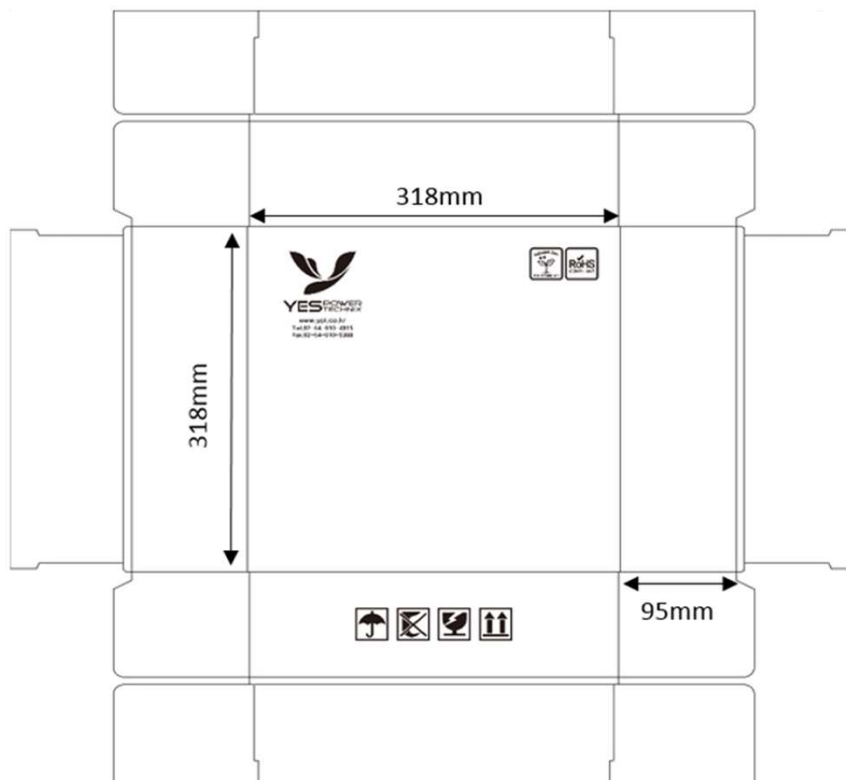


* Label information

Product Code	PDXXXXXXEB
Chip [ea]	XXX
Date	20XX . XX . XX .

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Outer Box



Notes

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