

PD030065EB(Bare Chip) / PD030065EW(Wafer) 650V Silicon Carbide Diode

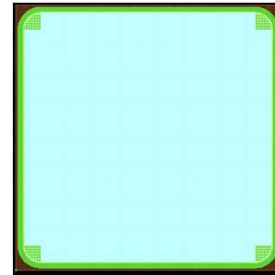
Features

- 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 350um ± 15%
- Chip Size 3,480um X 3,480um
- Anode Pad Size 2,900um X 2,900um
- 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 $T_C = 25^\circ C$	30	A
I_{FSM}	Non-Repetitive Forward Surge Current $T_C = 25^\circ C$ (PW=10ms sinusoidal)	150	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	$I_F = 30\text{A}, T_C = 25^{\circ}\text{C}$	--	1.5	1.8	V
I_R	Reverse Current	$V_R = 650\text{V}, T_C = 25^{\circ}\text{C}$	--	40	90	μA
Q_C	Total Capacitive Charge	$V_R = 400\text{V}$	--	58	--	nC
C	Total Capacitance	$V_R = 1\text{V}, T_J = 25^{\circ}\text{C}, f = 1\text{MHz}$ $V_R = 520\text{V}, T_J = 25^{\circ}\text{C}, f = 1\text{MHz}$	--	1475 140	--	pF

Typical Characteristics

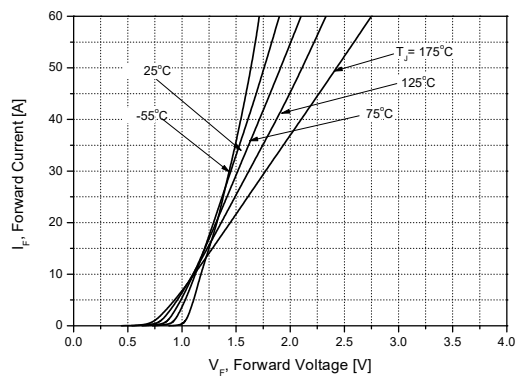


Figure 1. Forward Characteristics

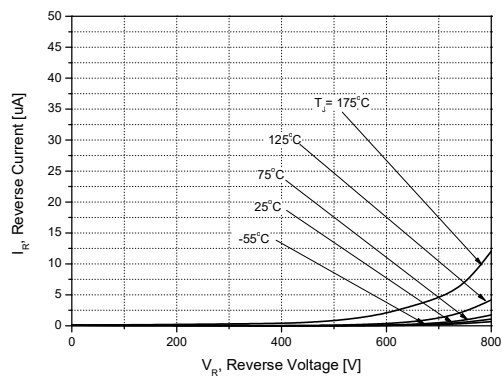


Figure 2. Reverse Characteristics

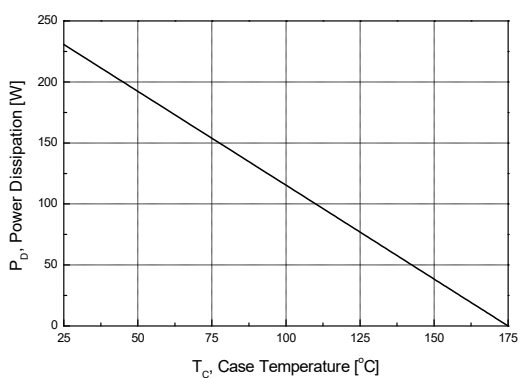


Figure 3. Power Dissipation

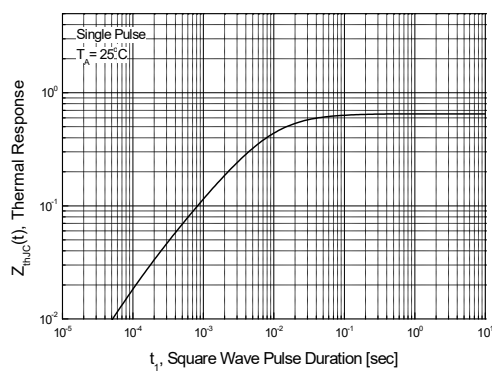


Figure 4. Transient Thermal Resistance

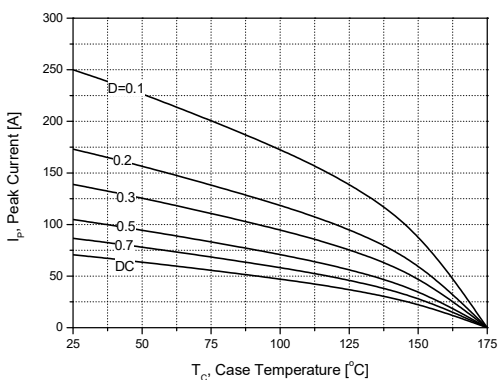


Figure 5. Peak Forward Current Derating

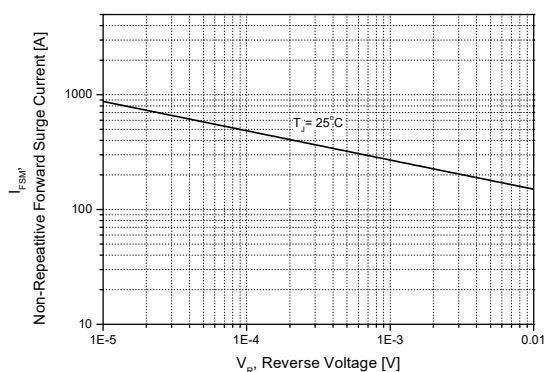
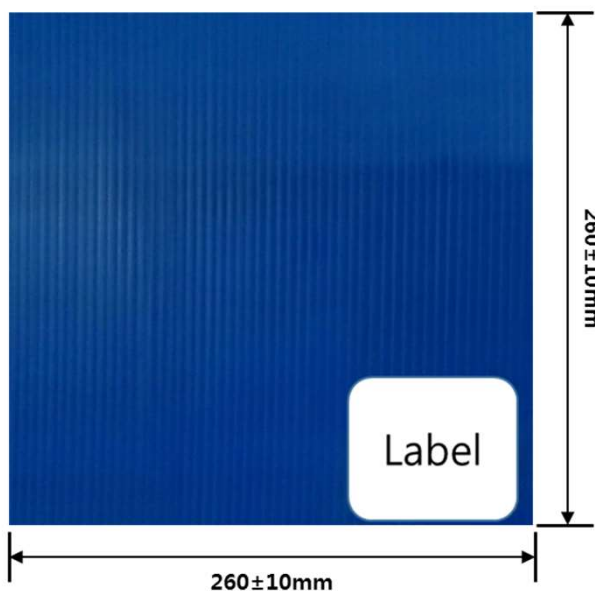


Figure 6. Non-Repetitive Peak Forward Surge Current vs. Pulse Duration

Packing Information

Inner : Plastic PVC Sheet (Dicing Wafer)

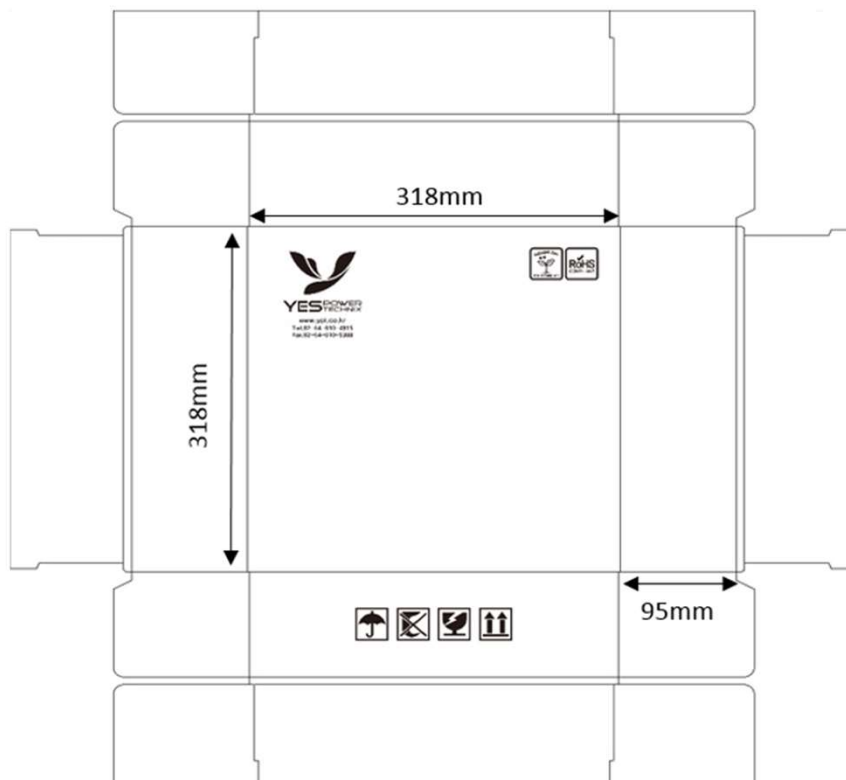


* Label information

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

YESPowertechnix.

Outer Box



Notes

- A. Specifications mentioned in this publication are subject to change without notice.
- B. Before you use our Products, please contact our sales representative and verify the latest specifications.
- C. In order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures.
- D. YES POWERTECHNIX shall have no responsibility for any damages arising out of the use of our products beyond the rating specified by YES POWERTECHNIX.
- E. The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products.
- F. YES POWERTECHNIX does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by YES POWERTECHNIX or any other parties.
- G. YES POWERTECHNIX shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.
- H. Please use the Products in accordance with any applicable environmental laws and regulations, such as the RoHS Directive.
- I. YES POWERTECHNIX shall have no responsibility for any damages or losses resulting non-compliance with any applicable laws or regulations.
- J. This document, in part or in whole, may not be reprinted or reproduced without prior consent of YES POWERTECHNIX.

