

PD004065EB(Bare Chip) / PD004065EW(Wafer) 650V Silicon Carbide Diode

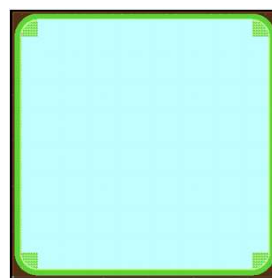
Features

- 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 1,440um X 1,440um
- Anode Pad Size 950um X 950um
- 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°C	4	A
I _{FSM}	Non-Repetitive Forward Surge Current T _C = 25°C (PW=10ms sinusoidal)	20	A
T _J , T _{stg}	Operating Junction and Storage Temperature	-55 to +175	°C

Electrical Characteristics

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

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
V_F	Forward Voltage	$I_F = 4\text{A}, T_C = 25^{\circ}\text{C}$	--	1.5	1.8	V
I_R	Reverse Current	$V_R = 650\text{V}, T_C = 25^{\circ}\text{C}$	--	14	38	μA
Q_C	Total Capacitive Charge	$V_R = 400\text{V}$	--	10	--	nC
C	Total Capacitance	$V_R = 1\text{V}, T_J = 25^{\circ}\text{C}, f = 1\text{MHz}$ $V_R = 520\text{V}, T_J = 25^{\circ}\text{C}, f = 1\text{MHz}$	--	180 25	--	pF

Typical Characteristics

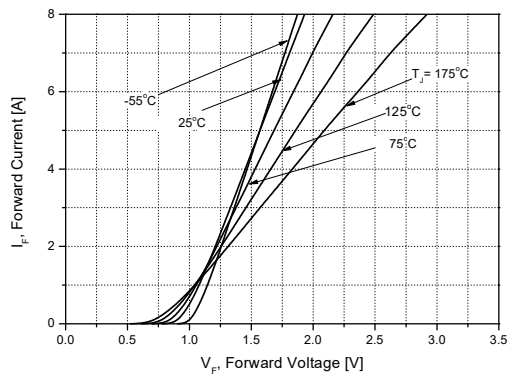


Figure 1. Forward Characteristics

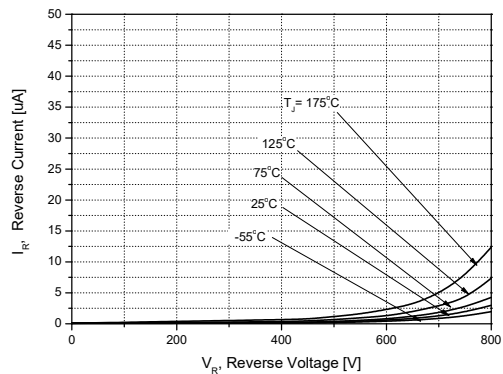


Figure 2. Reverse Characteristics

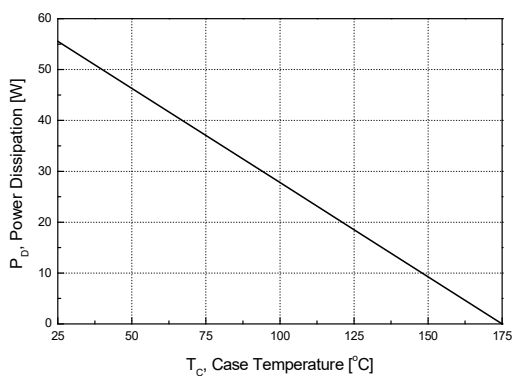


Figure 3. Power Dissipation

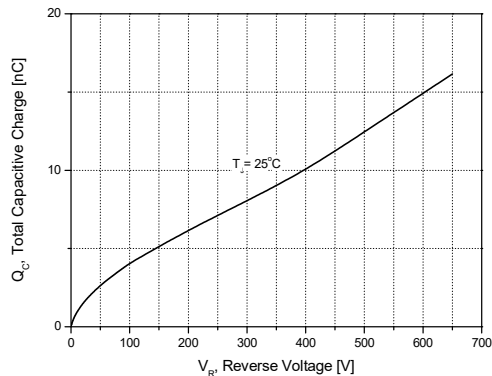


Figure 4. Total Capacitive Charge

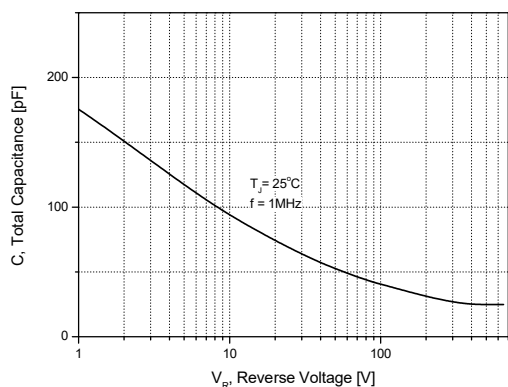


Figure 5. Total Capacitance

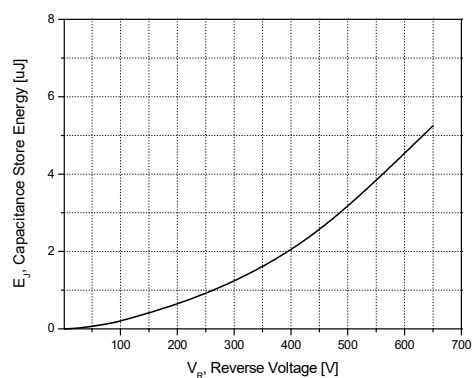
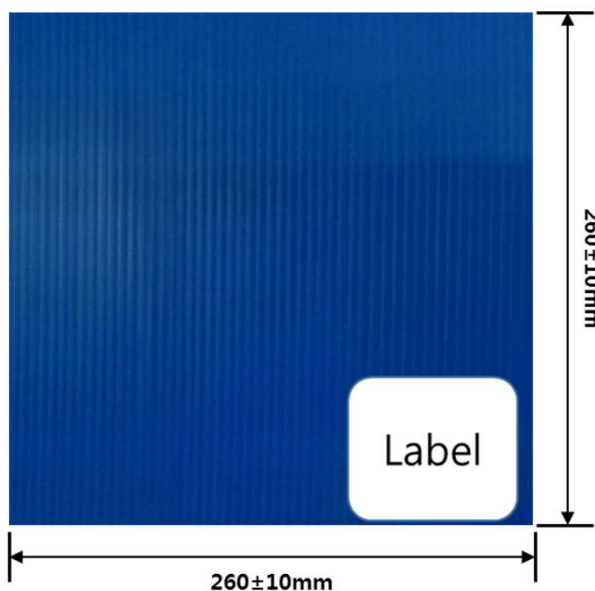


Figure 6. Capacitance Store Energy

Packing Information

Inner : Plastic PVC Sheet (Dicing Wafer)

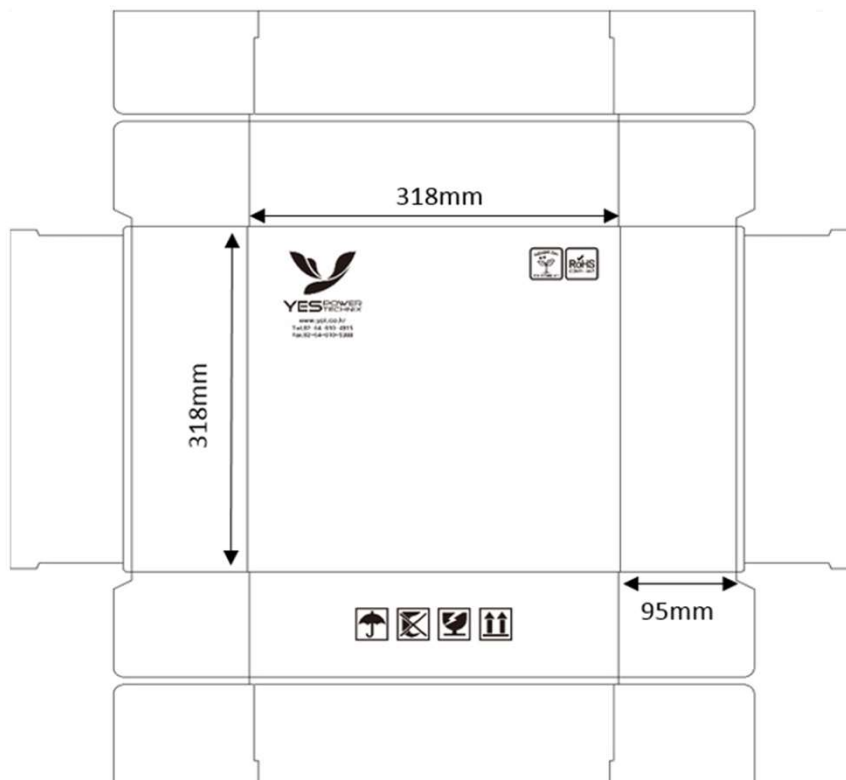


* Label information

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

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Outer Box



Notes

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