

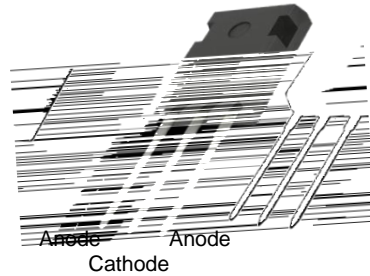
PD040120E2H / PD040120E2H_G

1200V Silicon Carbide Diode

Features

- 1200-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

Package Outline



Applications

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



Absolute Maximum Ratings

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

Symbol	Parameter	Value	Units
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V
V_{RSM}	Surge Peak Reverse Voltage	1200	V
V_{DC}	DC Blocking Voltage	1200	V
I_F	Continuous Forward Current $T_C = 25^\circ\text{C}$ $T_C = 145^\circ\text{C}$	49 / 98 20 / 40	A
I_{FRM}	Repetitive Peak Forward Current $T_C = 110^\circ\text{C}$	115 / 230	A
I_{FSM}	Non-Repetitive Forward Surge Current (PW=10ms sinusoidal) $T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$	100 / 200 80 / 160	A
P_D	Power Dissipation $T_C = 25^\circ\text{C}$	220 / 440	W
T_J, T_{stg}	Operating Junction and Storage Temperature	-55 to +175	$^\circ\text{C}$

* Per Leg / Per Device

Electrical Characteristics (Per Leg) $T_C = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
V_F	Forward Voltage	$I_F = 20\text{A}, T_C = 25^\circ\text{C}$ $I_F = 20\text{A}, T_C = 175^\circ\text{C}$	--	1.5 2.0	1.8 2.4	V
I_R	Reverse Current	$V_R = 1200\text{V}, T_C = 25^\circ\text{C}$ $V_R = 1200\text{V}, T_C = 175^\circ\text{C}$	--	30 60	70 700	μA
Q_C	Total Capacitive Charge	$V_R = 800\text{V}$	--	66	--	nC
C	Total Capacitance	$V_R = 1\text{V}, T_J = 25^\circ\text{C}, f = 1\text{MHz}$ $V_R = 800\text{V}, T_J = 25^\circ\text{C}, f = 1\text{MHz}$	--	1275 83	--	pF

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

Symbol	Parameter	Min	Typ	Max	Units
R_{70}	Thermal Resistance, Junction-to-Case	--	0.68 / 0.34	0.8 / 0.4	$^\circ\text{C}/\text{W}$

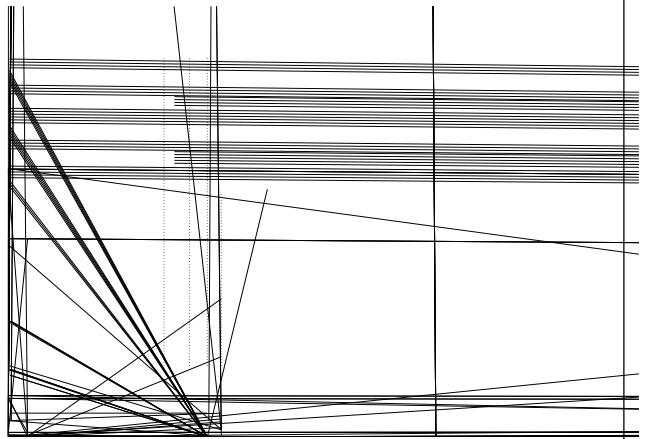
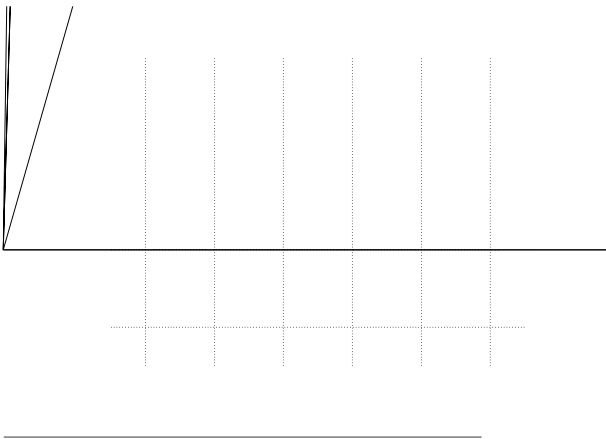
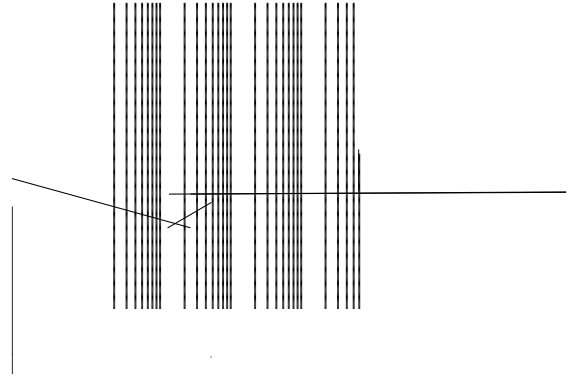
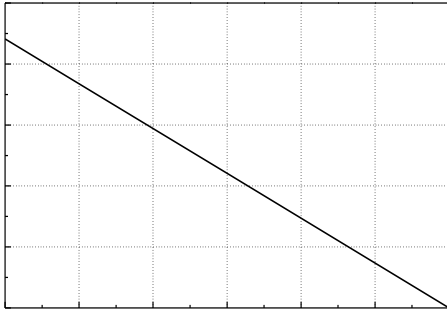
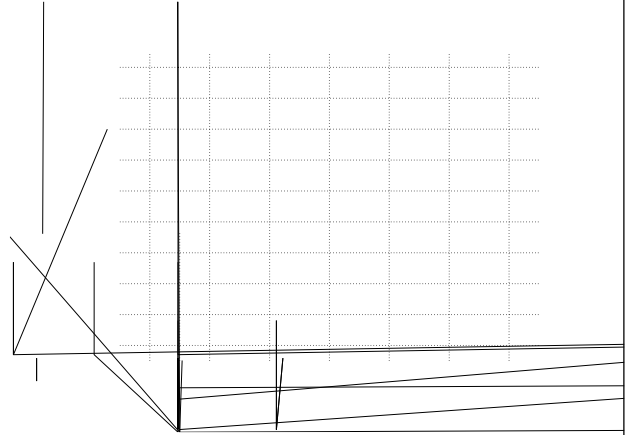
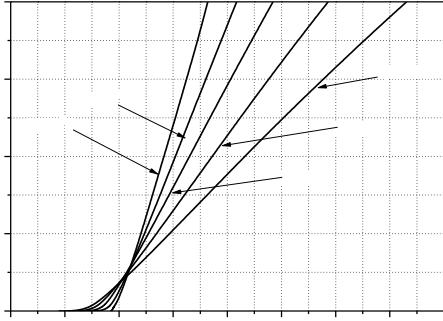
* Per Leg / Per Device

Package Marking and Ordering Information

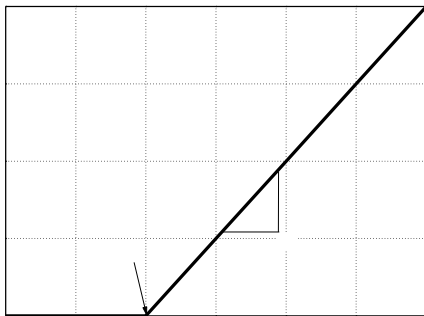
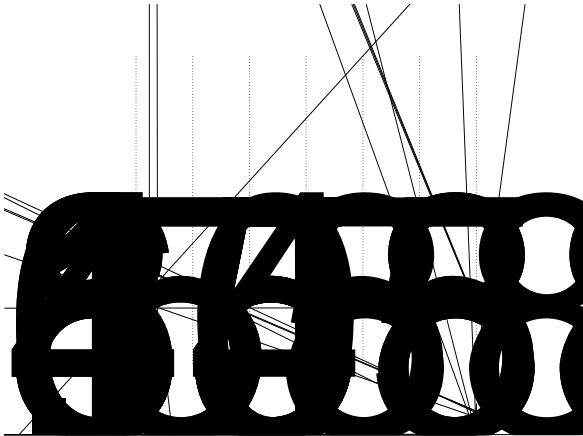
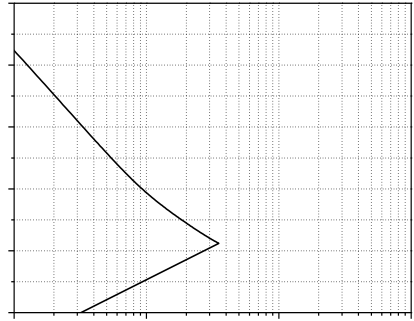
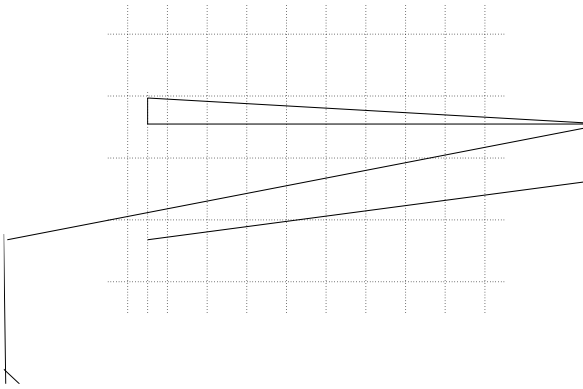
Device Marking	Device	Package	Reel Size	Tape Width	Quantity
PD040120E2H	PD040120E2H	TO-247_3L	-	-	30
PD040120E2H_G	PD040120E2H_G	TO-247_3L	-	-	30

* PD040120E2H_G : RoHS Compliant

Typical Characteristics (Per Leg)



Typical Characteristics (Per Leg)



$$V_{TH}(T_j) = -0.001 \times (T_j) + 0.930 \text{ [V]}$$

$$R_{DIFF}(T_j) = A \times T_j^2 + B \times T_j + C \text{ [} \]$$

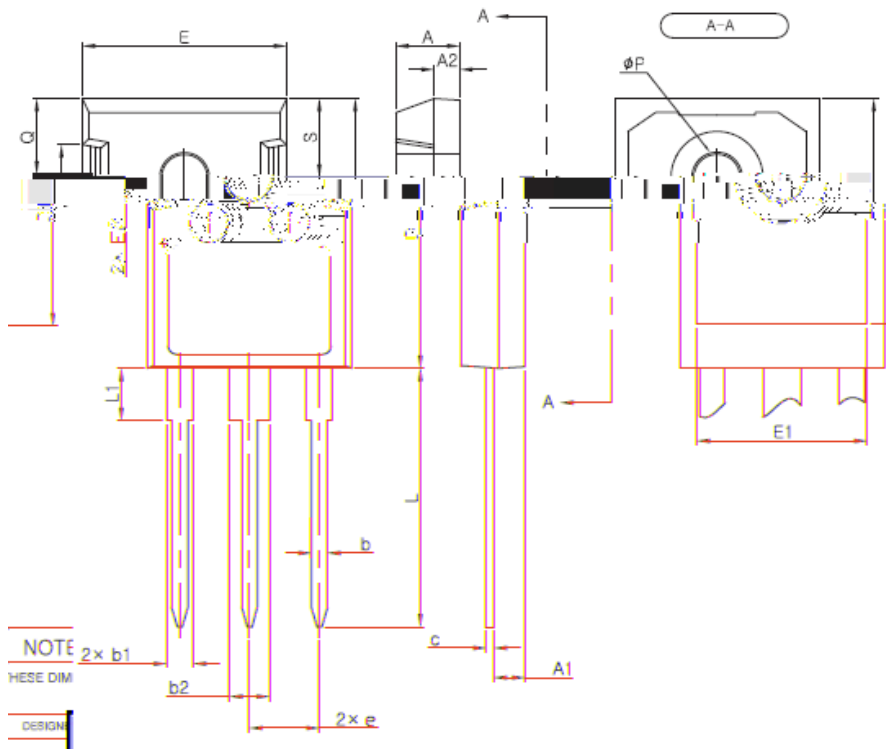
$$A = 9.99 \times 10^{-7}$$

$$B = 9.02 \times 10^{-5}$$

$$C = 2.59 \times 10^{-2}$$

$$[T_j \text{ [}^\circ\text{C]}; -55 \text{ }^\circ\text{C} \leq T_j \leq 175 \text{ }^\circ\text{C}; IF \leq 20 \text{ A}]$$

Package Information

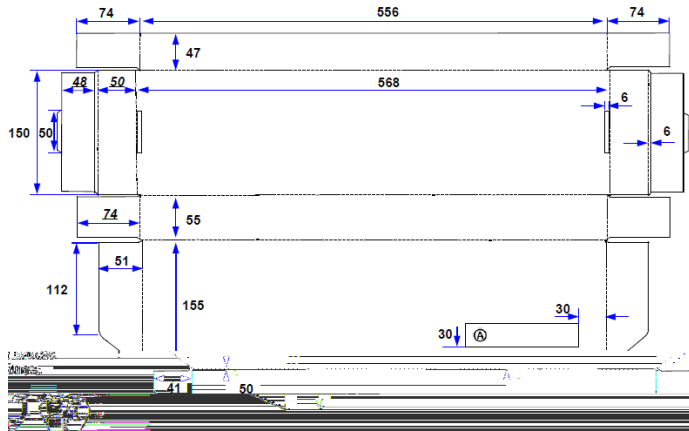


SYMBOL	MIN	NOM	MAX
A	4.80	5.00	5.20
A1	2.29	2.41	2.54
A2	1.90	2.00	2.10
b	1.10	1.20	1.30
b1	1.91	2.10	2.20
b2	2.92	3.10	3.20
c	0.50	0.60	0.70
D	20.80	21.07	21.34
D1	17.43	17.63	17.83
E	15.75	15.94	16.13
E1	13.06	13.26	13.46

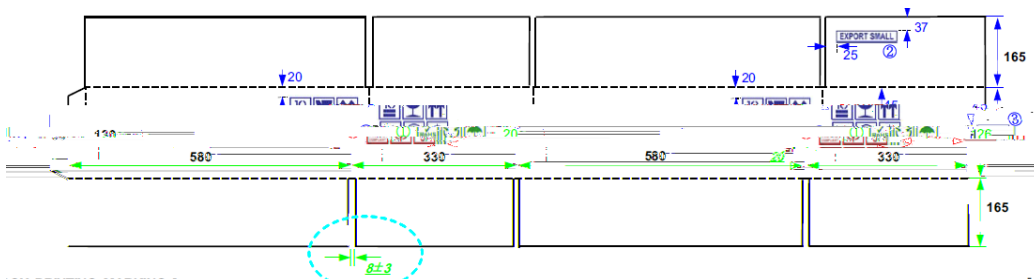


Packing Information

Inner Box



Outer Box



[BOX PRINTING MARKING]

[E

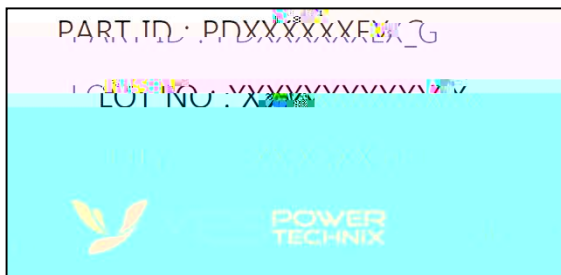
① B175 (SUK175) MARKING POSITION (註)

② EXPORT SMALL MARKING SIZE (112*20) COLOR (DARK BLUE)

③ ROHS COMPLIANT

[NOTE]
 1. MATERIAL : KLB175*K180*K1 B175*K180*K1 (SUK175*K200*K200*K2)
 2. NAIL QTY : 3 PCS

DESIGNED BY: _____ APPROVED BY: _____ UNIT: _____ mm MARKING SIZE: _____



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.
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