

## Silicon Carbide Schottky Barrier Diode

$V_{RRM}$	1200 V	$I_F$	2 x 20 A
$V_{F(Typ.)}$	1.5 V	$Q_C$	90 nC

### Features

- Temperature Independent Switching Behavior
- High Surge Current Capability
- Low Conduction Loss
- Zero Reverse Recovery
- High junction temperature 175 °C
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

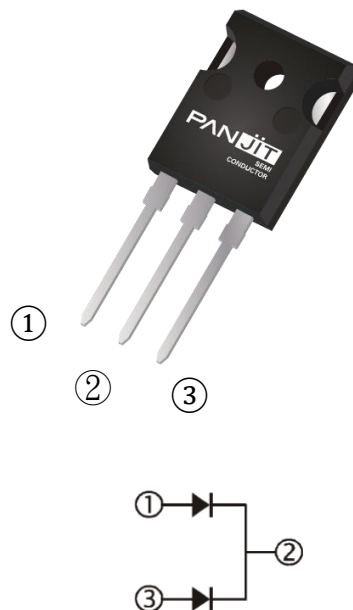
### Mechanical Data

- Case: TO-247AD-3LD molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.2198 ounces, 6.231 grams

### Application

- PFC, UPS, PV Inverter, EV Charging Station, Welder

### TO-247AD-3LD



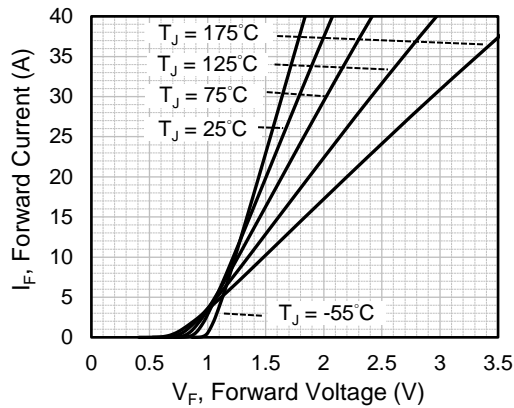
### Maximum Ratings and Thermal Characteristics ( $T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

PARAMETER		SYMBOL	LIMIT	UNITS
Repetitive Peak Reverse Voltage		$V_{RRM}$	1200	V
DC Blocking Voltage		$V_{DC}$	1200	V
Continuous Forward Current (Per Leg/Device)	$T_C = 150\text{ }^{\circ}\text{C}$	$I_F$	20 / 40	A
Repetitive Peak Surge Current <i>Half Sine Wave, D=0.1</i> (Per Leg)	$T_C = 25\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$	$I_{FRM}$	124	A
	$T_C = 125\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$		108	
Peak Forward Surge Current <i>Half Sine Wave</i> (Per Leg)	$T_C = 25\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$	$I_{FSM}$	156	A
	$T_C = 125\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$		144	
Peak Forward Surge Current $t_p = 10\mu\text{s}$ , Pulse (Per Leg)			960	A
Maximum Power Dissipation (Per Leg)		$P_{total}$	294.1	W
Operating Junction Temperature Range		$T_J$	-55~175	$^{\circ}\text{C}$
Storage Temperature Range		$T_{STG}$	-55~175	$^{\circ}\text{C}$

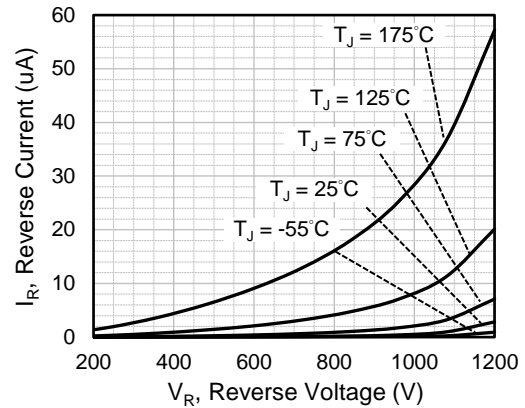
## Electrical Characteristics (Per Leg) ( $T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage Drop	$V_F$	$I_F = 20\text{ A}, T_J = 25\text{ }^{\circ}\text{C}$	-	1.5	1.7	V
		$I_F = 20\text{ A}, T_J = 175\text{ }^{\circ}\text{C}$	-	2.2	-	
Reverse Leakage Current	$I_R$	$V_R = 1200\text{ V}, T_J = 25\text{ }^{\circ}\text{C}$	-	2.8	180	$\mu\text{A}$
		$V_R = 1200\text{ V}, T_J = 175\text{ }^{\circ}\text{C}$	-	0.06	-	mA
Total Capacitive Charge	$Q_C$	$I_F = 20\text{ A}, V_R = 800\text{ V}$	-	90	-	nC
Total Capacitance	C	$V_R = 1\text{ V}, f = 1\text{ MHz}$	-	1020	-	pF
		$V_R = 400\text{ V}, f = 1\text{ MHz}$	-	85	-	pF
		$V_R = 800\text{ V}, f = 1\text{ MHz}$	-	62	-	pF
Capacitance Stored Energy	$E_C$	$V_R = 800\text{ V}$	-	25.9	-	$\mu\text{J}$
Thermal Resistance	$R_{\theta JC}$		-	0.51	-	$^{\circ}\text{C/W}$

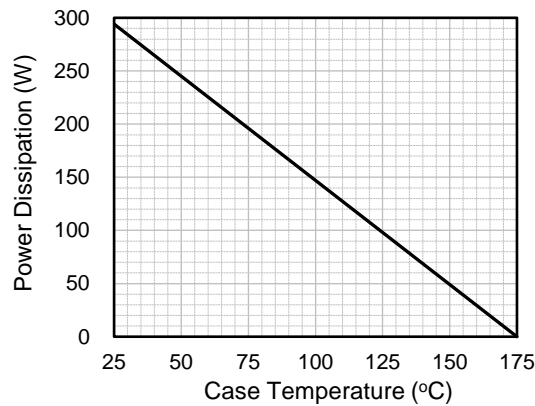
**TYPICAL CHARACTERISTIC CURVES ( Per Leg )**



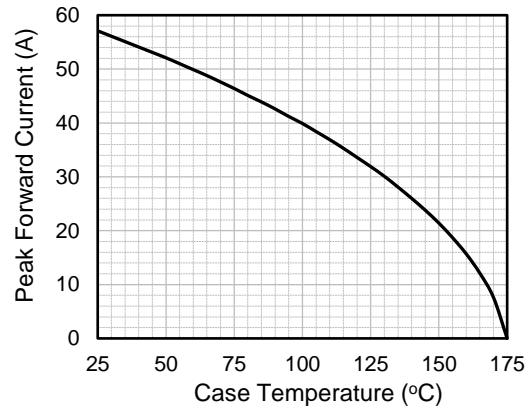
**Fig.1 Forward Characteristics**



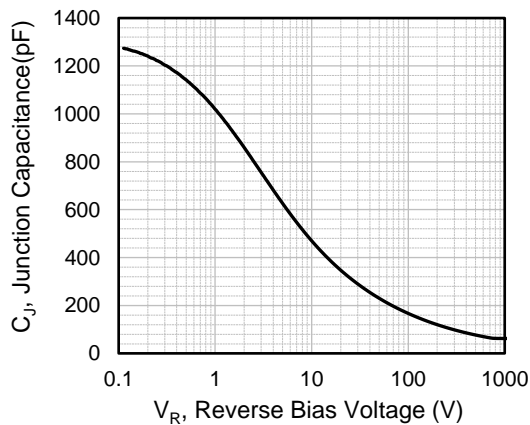
**Fig.2 Reverse Characteristics**



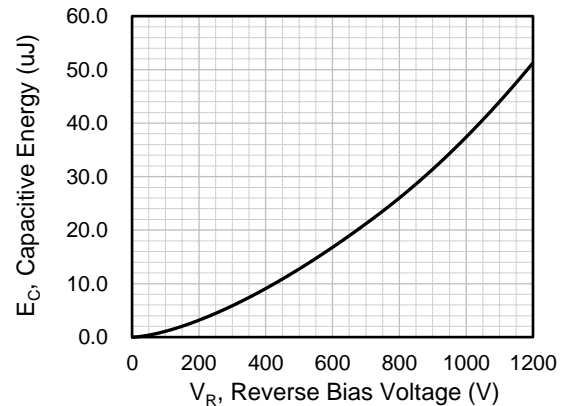
**Fig.3 Power Derating Curve**



**Fig.4 Current Derating Curve**



**Fig.5 Typical Junction Capacitance**

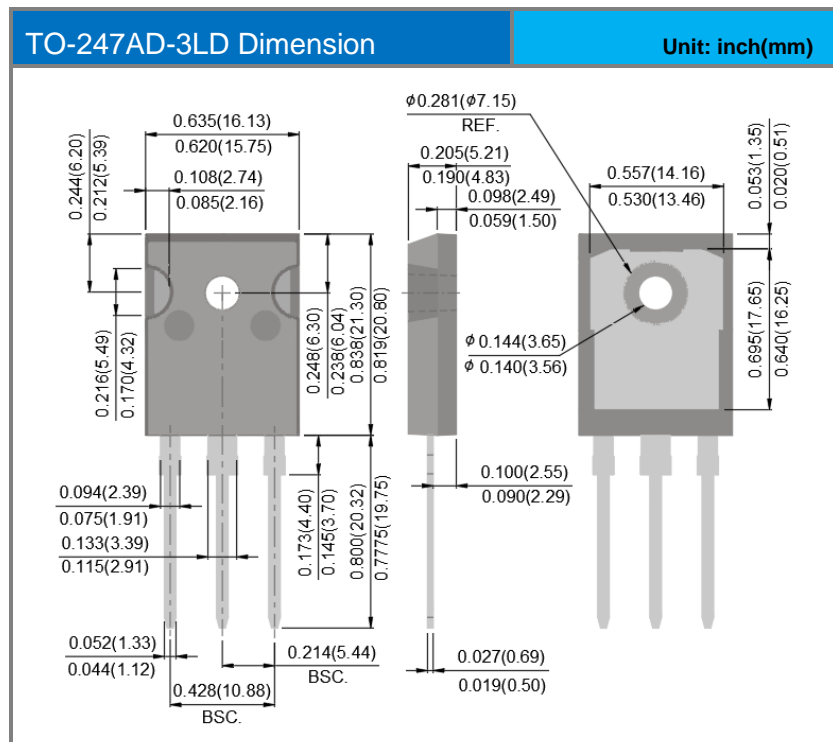


**Fig.6 Capacitance Stored Energy**

## Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PCDH40120CCG1	TO-247AD-3LD	30pcs / Tube	CDH40120CCG1

## Packaging Information



## Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Panjit:

[PCDH40120CCG1\\_T0\\_00601](#)