

## Product Summary (Per Leg)

$V_{RRM}$ (V)	$I_O$ (A)	$V_F$ Max (V) @ +25°C	$I_R$ Max (μA) @ +25°C
120	10	0.88	80

## Description and Applications

The Trench Schottky rectifier provides very low  $V_F$  and extremely excellent reverse leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode or blocking diode in:

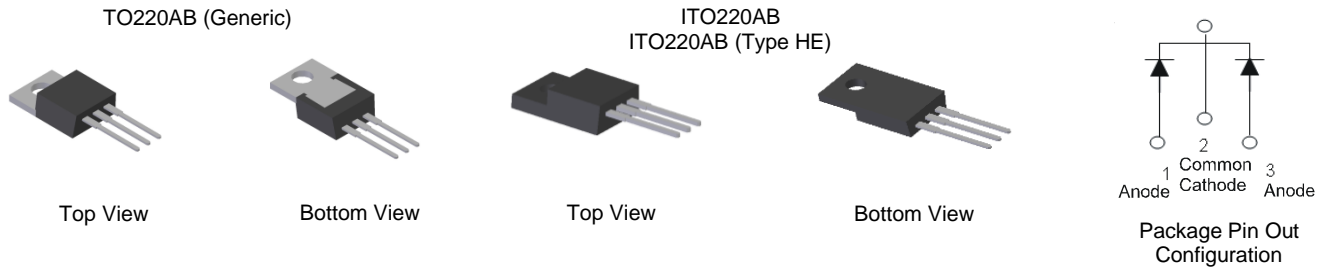
- DC-DC converters
- AC-DC adaptors

## Features

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative.**  
<https://www.diodes.com/quality/product-definitions/>

## Mechanical Data

- Package: TO220AB, ITO220AB
- Package Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 @3
- Weight: TO220AB (Generic) - 1.85 grams (Approximate)  
 ITO220AB - 1.90 grams (Approximate)  
 ITO220AB (Type HE) - 1.90 grams (Approximate)



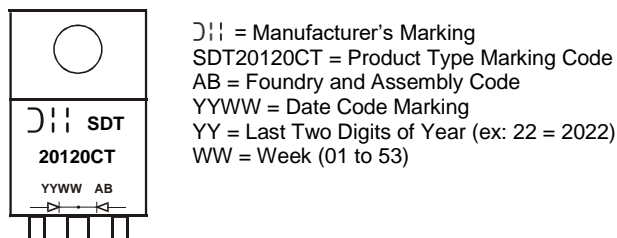
## Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
SDT20120CT	TO220AB (Generic)	50 Pieces	Tube
SDT20120CTFP	ITO220AB	50 Pieces	Tube
SDT20120CTFP	ITO220AB (Type HE)	50 Pieces	Tube

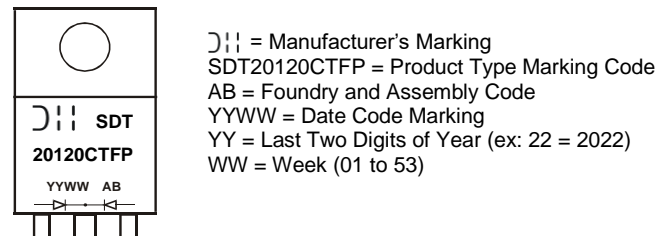
- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information

TO220AB (Generic)



ITO220AB, ITO220AB (Type HE)



## Maximum Ratings (Per Leg) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	120	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current per Device (Per Leg) (Total)	I <sub>O</sub>	10 20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	120	A

## Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance (Note 5)	R <sub>θJC</sub>	2	°C/W
Package = TO220AB (Generic)		4	
Package = ITO220AB		4	
Package = ITO220AB (Type HE)			
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

## Electrical Characteristics (Per Leg) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	0.63	—	V	I <sub>F</sub> = 5A, T <sub>J</sub> = +25°C
		—	0.82	0.88		I <sub>F</sub> = 10A, T <sub>J</sub> = +25°C
		—	0.65	0.71		I <sub>F</sub> = 10A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	3	80	μA	V <sub>R</sub> = 120V, T <sub>J</sub> = +25°C
		—	2	20	mA	V <sub>R</sub> = 120V, T <sub>J</sub> = +125°C

Notes: 5. With 50mm x 50mm x 23mm Al heatsink.  
6. Short duration pulse test used to minimize self-heating effect.

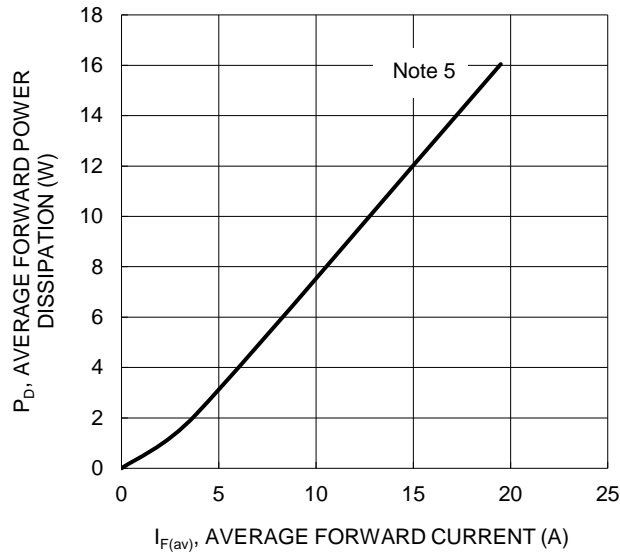


Figure 1. Forward Power Dissipation

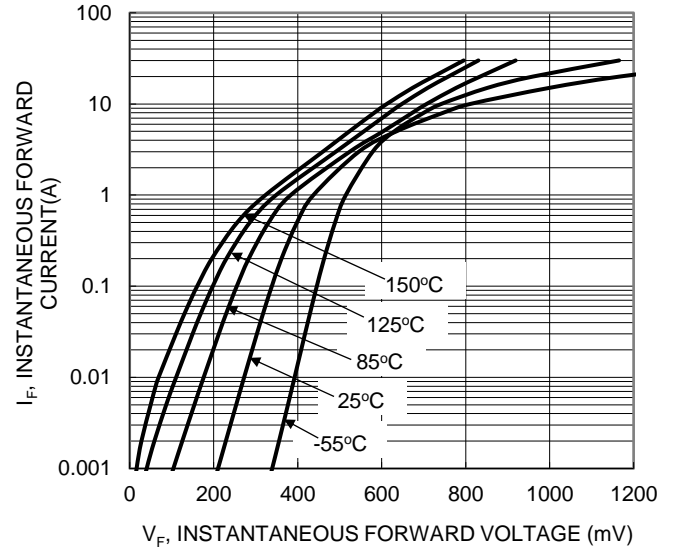


Figure 2. Typical Forward Characteristics

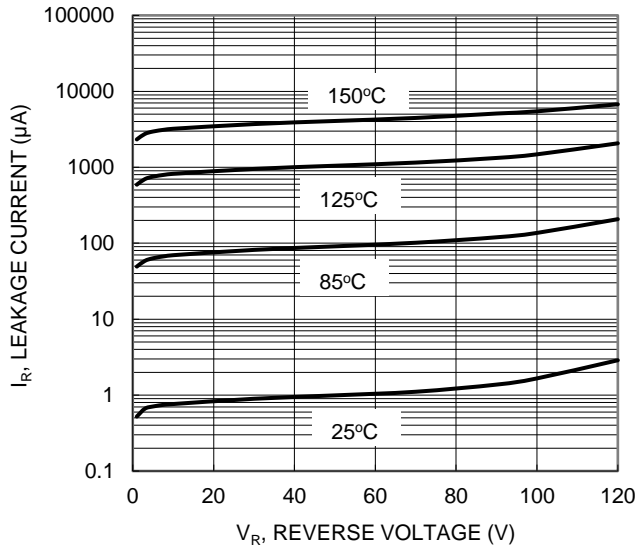


Figure 3. Typical Reverse Characteristics

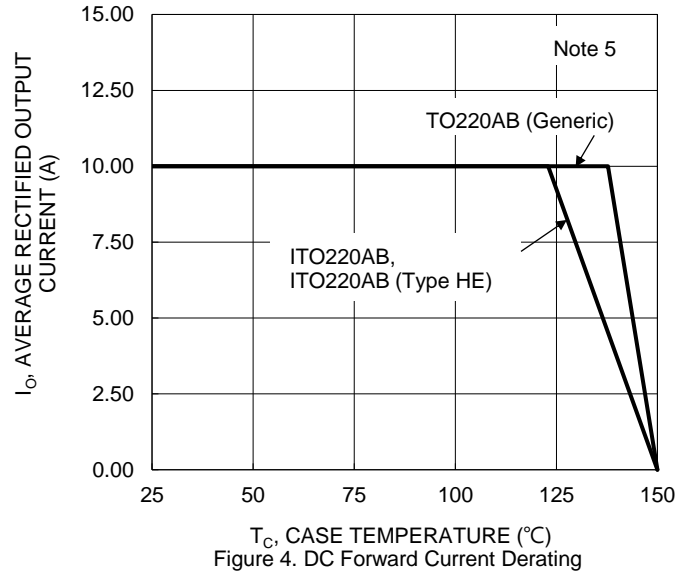


Figure 4. DC Forward Current Derating

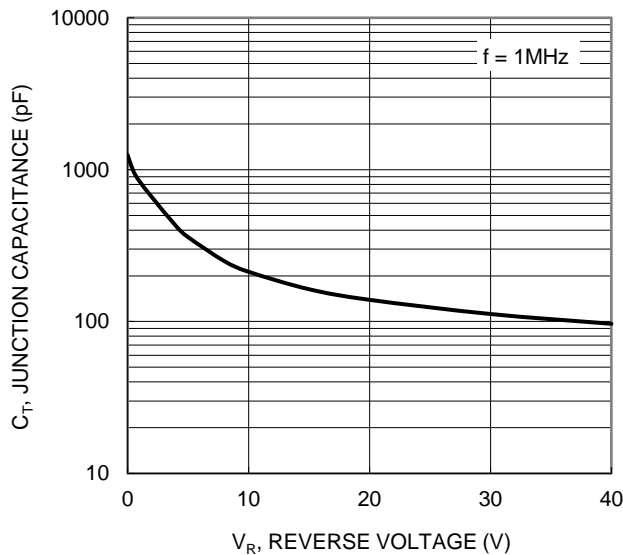


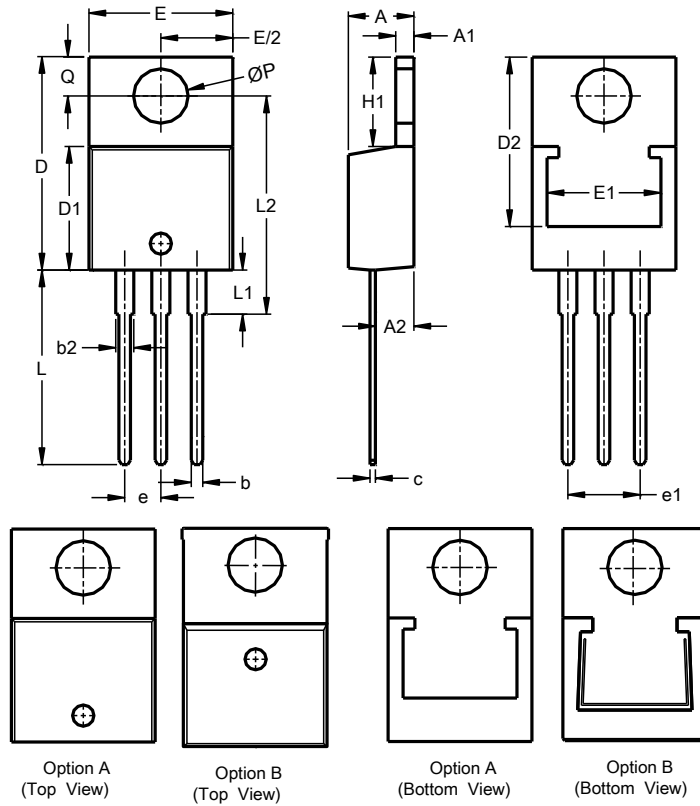
Figure 5. Typical Junction Capacitance

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### (1) Package Type: TO220AB (Generic)

#### TO220AB (Generic)



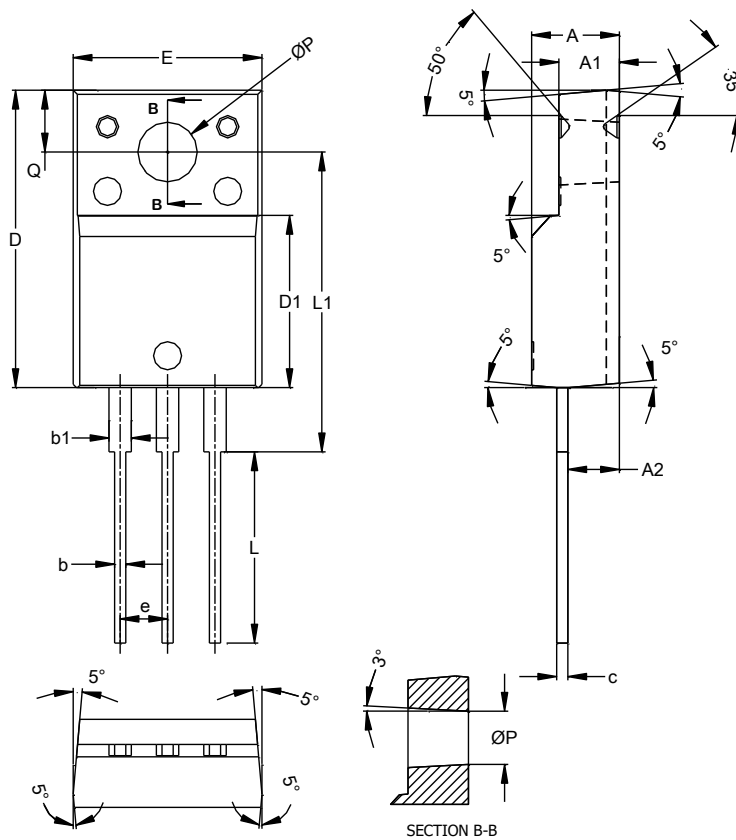
TO220AB (Generic)			
Dim	Min	Max	Typ
A	3.56	4.82	-
A1	0.51	1.39	-
A2	2.04	2.92	-
b	0.39	1.01	0.81
b2	1.15	1.77	1.24
c	0.356	0.61	-
D	14.22	16.51	-
D1	8.39	9.01	-
D2	11.45	12.87	-
e	-	-	2.54
e1	-	-	5.08
E	9.66	10.66	-
E1	6.86	8.89	-
H1	5.85	6.85	-
L	12.70	14.73	-
L1	-	4.42	-
L2	15.80	17.51	16.00
P	3.54	4.08	-
Q	2.54	3.42	-
All Dimensions in mm			

### Package Outline Dimensions (continued)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

(2) Package Type: ITO220AB

**ITO220AB**



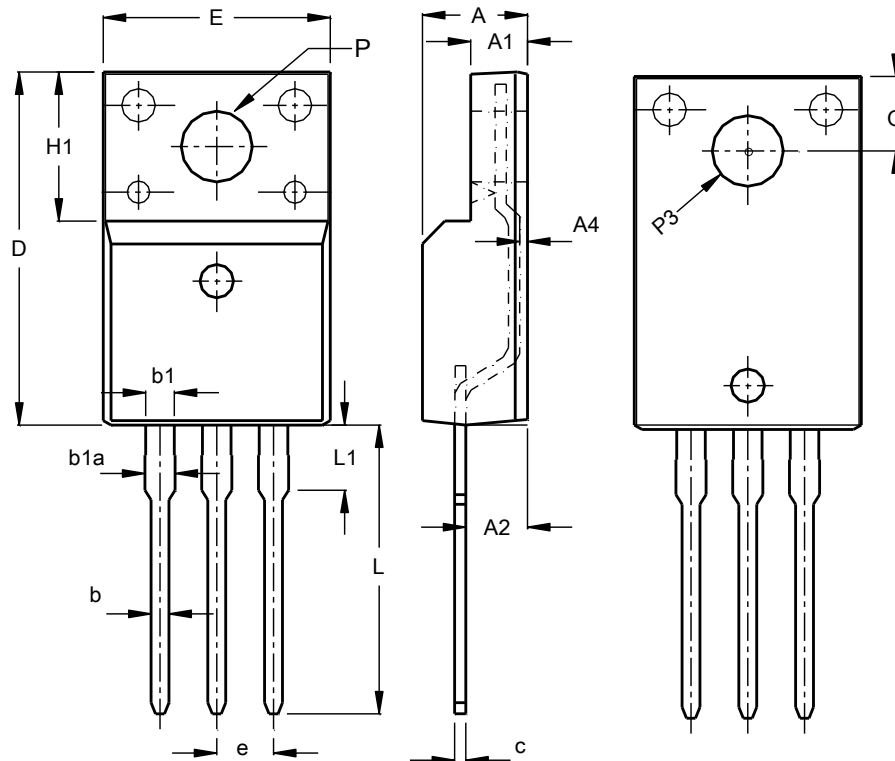
ITO220AB			
Dim	Min	Max	Typ
A	4.50	4.90	4.70
A1	3.04	3.44	3.24
A2	2.56	2.96	2.76
b	0.50	0.75	0.60
b1	1.10	1.35	1.20
c	0.50	0.70	0.60
D	15.67	16.07	15.87
D1	8.99	9.39	9.19
E	9.91	10.31	10.11
e	--	--	2.54
L	9.45	10.05	9.75
L1	15.80	16.20	16.00
P	2.98	3.38	3.18
Q	3.10	3.50	3.30
All Dimensions in mm			

## Package Outline Dimensions (continued)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### (3) Package Type: ITO220AB (Type HE)

ITO220AB (Type HE)



ITO220AB (Type HE)			
Dim	Min	Max	Typ
A	4.50	4.90	4.70
A1	2.34	2.74	2.54
A2	2.56	2.96	2.76
A4	0.30	0.60	0.45
b	0.70	0.95	0.80
b1	1.18	1.43	1.28
b1a	1.25	1.55	1.35
c	0.45	0.60	0.50
D	15.57	16.17	15.87
e	2.54 BSC		
E	9.96	10.36	10.16
H1	6.70 REF		
L	12.68	13.28	12.98
L1	3.03	3.43	3.23
Q	3.15	3.45	3.30
ØP	3.03	3.38	3.18
ØP3	3.15	3.65	3.45
All Dimensions in mm			

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