SDT30100CT/SDT30100CTFP

30A

TRENCH SCHOTTKY RECTIFIER

Product Summary (Per Leg)

V_{RRM} (V)	I_O (A)	V_F Max (V) @ +25°C	I_R Max (µA) @ +25°C
100	15	0.75	100

Features

- Low Forward Voltage Drop
- Low Power Loss
- Excellent High Temperature Stability
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Description and Applications

The Trench Schottky 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:

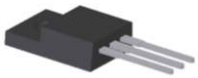
- DC-DC Converters
- AC-DC Adaptors

Mechanical Data

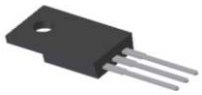
- Case: TO220AB, ITO220AB, ITO220AB (Type HE)
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Weight: TO220AB -1.85 grams (Approximate)
  ITO220AB - 1.69 grams (Approximate)
  ITO220AB (Type HE) - 1.69 grams (Approximate)

TO220AB
Top View

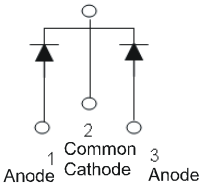
TO220AB
Bottom View



ITO220AB,
ITO220AB (Type HE)
Top View



ITO220AB,
ITO220AB (Type HE)
Bottom View



Package Pin Out
Configuration

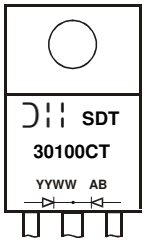
Ordering Information (Note 4)

Part Number	Case	Packaging
SDT30100CT	TO220AB	50 Pieces/Tube
SDT30100CTFP	ITO220AB, ITO220AB (Type HE)	50 Pieces/Tube
SDT30100CTFP-S	ITO220AB	50 Pieces/Tube
SDT30100CTFP-H	ITO220AB (Type HE)	50 Pieces/Tube

Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
2. See http://www.diodes.com/quality/lead_free.html 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 http://www.diodes.com/products/packages.html.

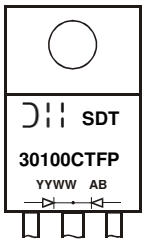
Marking Information

TO220AB



= Manufacturer's Marking
SDT30100CT = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 17 = 2017)
WW = Week (01 to 53)

ITO220AB, ITO220AB (Type HE)



= Manufacturer's Marking
SDT30100CTFP = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 17 = 2017)
WW = Week (01 to 53)

Maximum Ratings (Per Leg) (@T_A = +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 Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_{RM}	100	V
Average Rectified Output Current per Device	(Per Leg) (Total)	I_O	15 30	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load		I_{FSM}	200	A

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance (Note 5) Package = TO220AB Package = ITO220AB, ITO220AB (Type HE)	$R_{\theta JC}$	 2 4	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (Per Leg) (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	— — —	0.51 0.70 0.65	— 0.75 0.70	V	I_F = 5A, T_J = +25°C I_F = 15A, T_J = +25°C I_F = 15A, T_J = +125°C
Leakage Current (Note 6)	I_R	— —	8 5	100 20	μA mA	V_R = 100V, T_J = +25°C V_R = 100V, T_J = +125°C

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

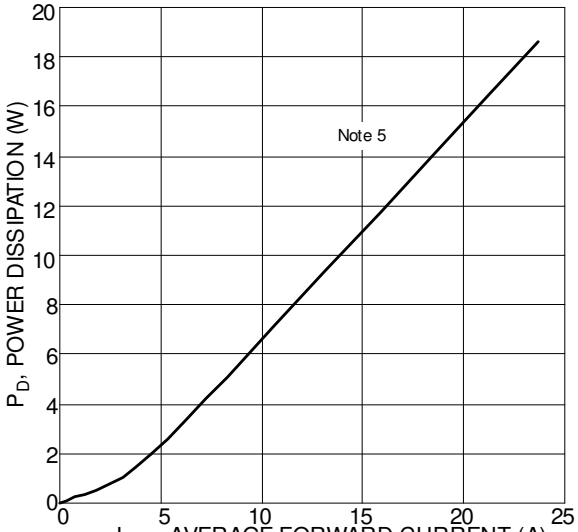


Figure 1 Forward Power Dissipation

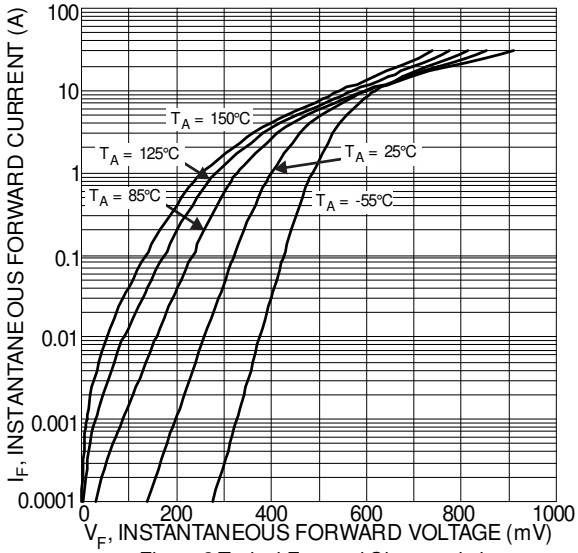


Figure 2 Typical Forward Characteristics

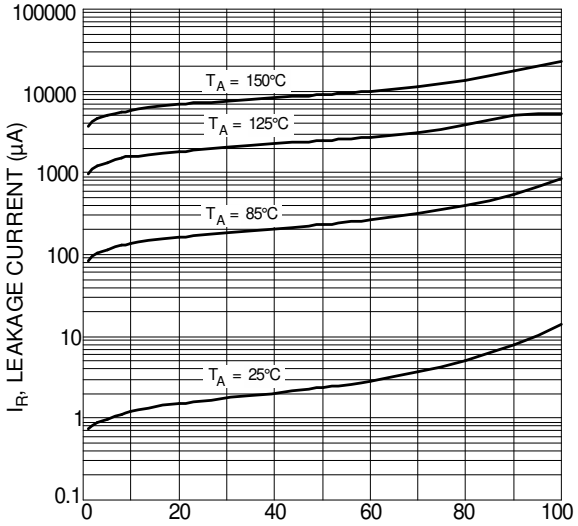


Figure 3 Typical Reverse Characteristics

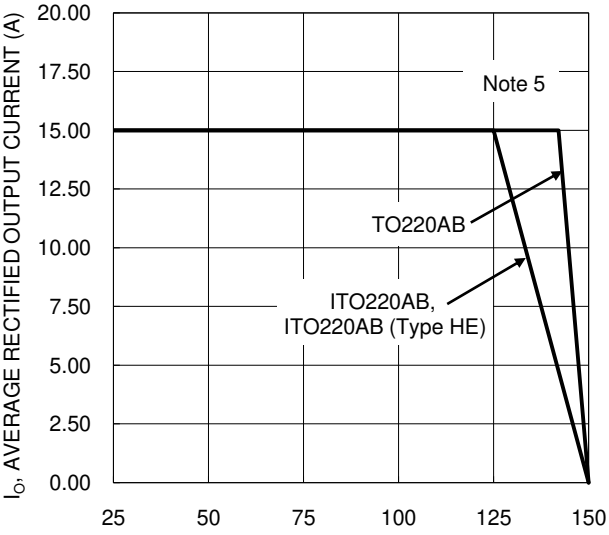


Figure 4. DC Forward Current Derating

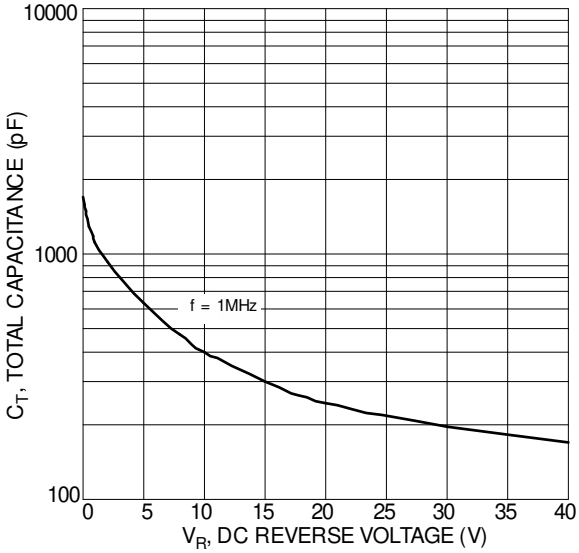
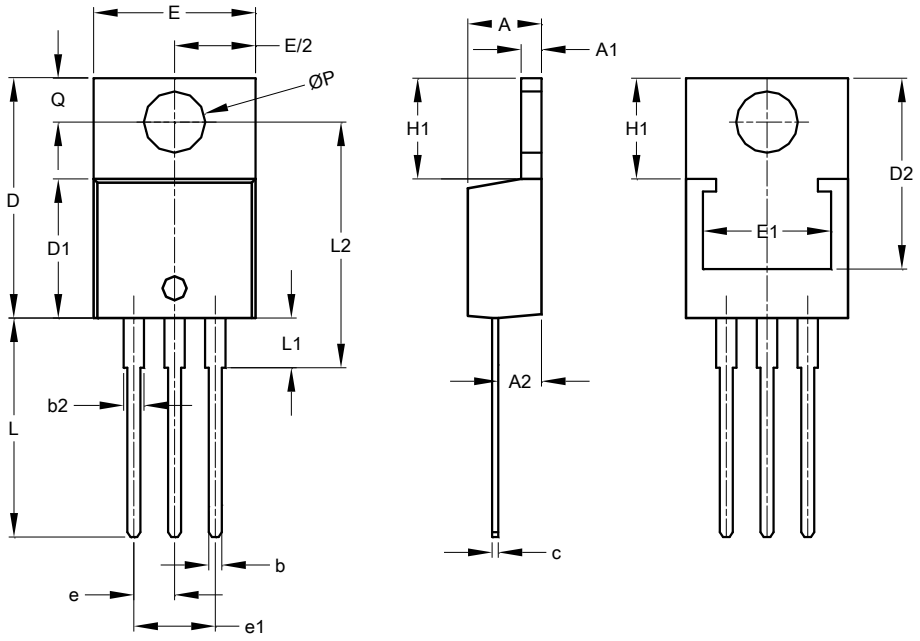


Figure 5 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

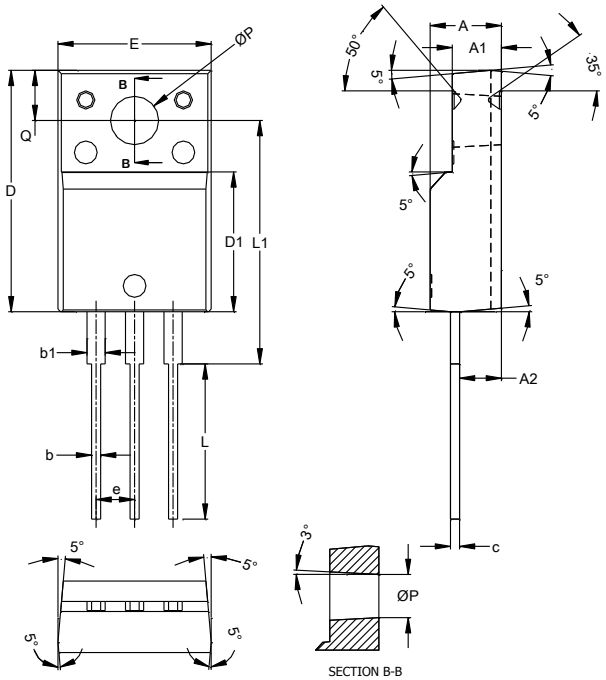
Please see http://www.diodes.com/package-outlines.html for the latest version.

(1) Package Type: TO220AB



TO220AB			
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			

(2) Package Type: ITO220AB

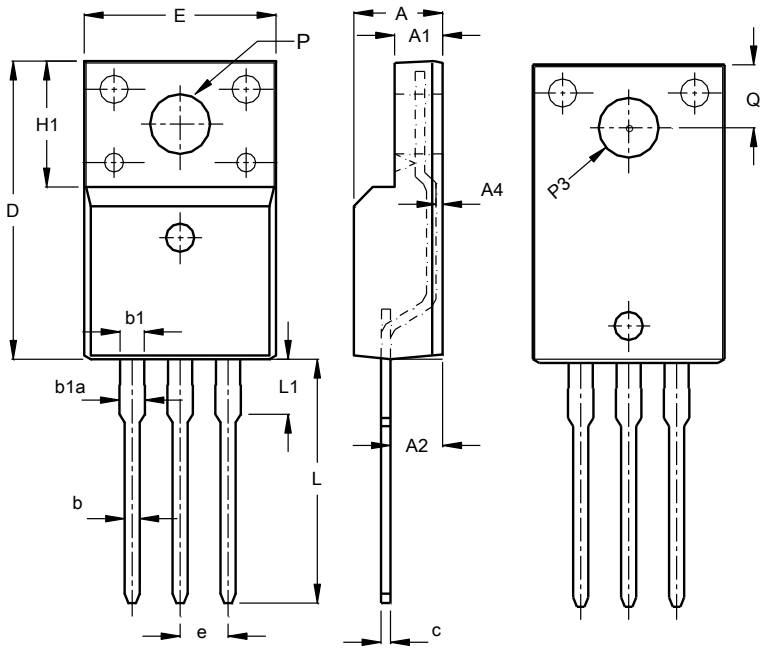


ITO220AB			
Dim	Min	Max	Typ
A	4.50	4.90	4.70
A1	3.04	3.44	3.24
A2	2.56	2.96	2.76
b	0.50	0.75	0.60
b1	1.10	1.35	1.20
c	0.50	0.70	0.60
D	15.67	16.07	15.87
D1	8.99	9.39	9.19
E	9.91	10.31	10.11
e	--	--	2.54
L	9.45	10.05	9.75
L1	15.80	16.20	16.00
P	2.98	3.38	3.18
Q	3.10	3.50	3.30
All Dimensions in mm			

Package Outline Dimensions (Cont.)

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

(3) Package Type: 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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