Product Summary (Per Leg)

V_{RRM} (V)	I_O (A)	V_F Max (V) @ +25°C	I_R Max (mA) @ +25°C
45	10	0.54	0.3

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-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

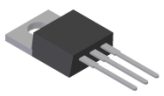
Description and Applications

The SDT20B45VCT 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:

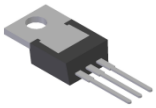
- DC-DC Converters
- AC-DC Adaptors

Mechanical Data

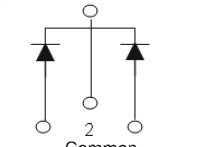
- Case: TO220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Weight: 1.85 grams (Approximate)



TO220AB (Generic)
Top View



TO220AB (Generic)
Bottom View



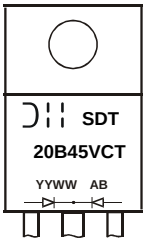
Configuration

Ordering Information (Note 4)

Part Number	Case	Packaging
SDT20B45VCT	TO220AB (Generic)	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



= Manufacturers' Code Marking
SDT20B45VCT = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 20 = 2020)
WW = Week (01 to 53)

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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}	45	V
Average Rectified Output Current Per Device (Per Leg) (Total)	I_O	10 20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	120	A

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance (Note 5) Package = TO220AB (Generic)	$R_{\Theta JC}$	2	°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	— —	0.48 0.45	0.54 —	V	I_F = 10A, T_J = +25°C I_F = 10A, T_J = +125°C
Leakage Current (Note 6)	I_R	— —	0.075 36	0.3 50	mA	V_R = 45V, T_J = +25°C V_R = 45V, T_J = +125°C

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

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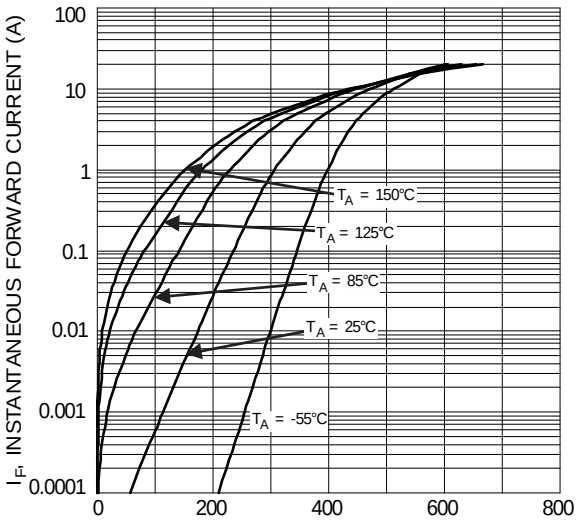


Figure 1 Typical Forward Characteristics

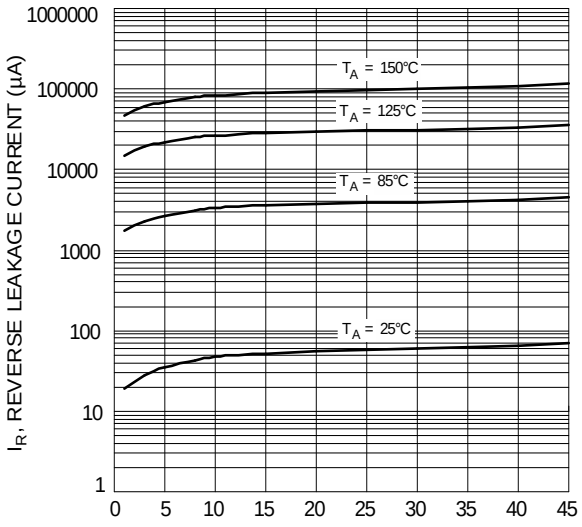


Figure 2 Typical Reverse Characteristics

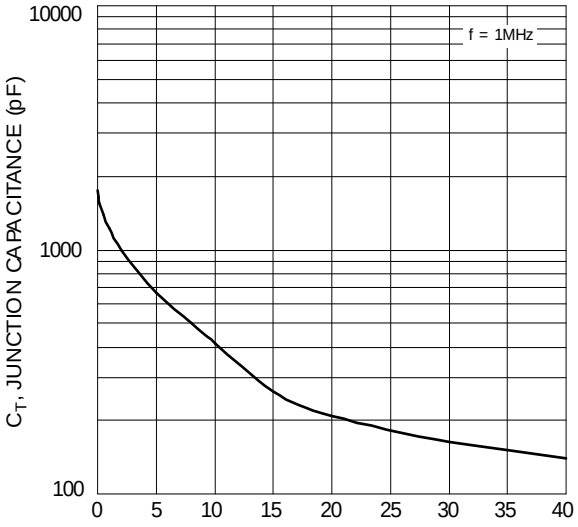


Figure 3 Typical Junction Capacitance

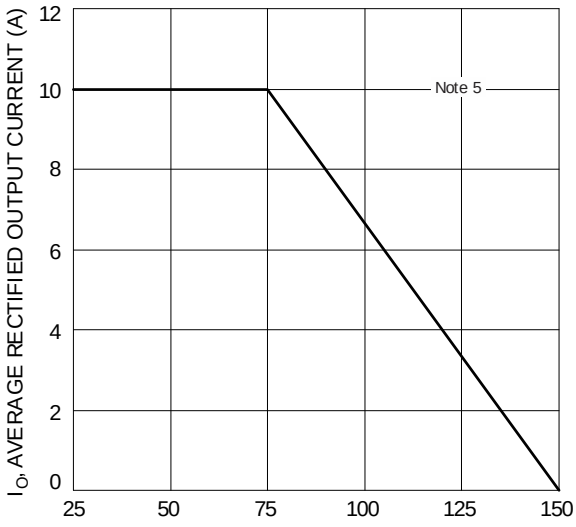


Figure 4 DC Forward Current Derating Curve

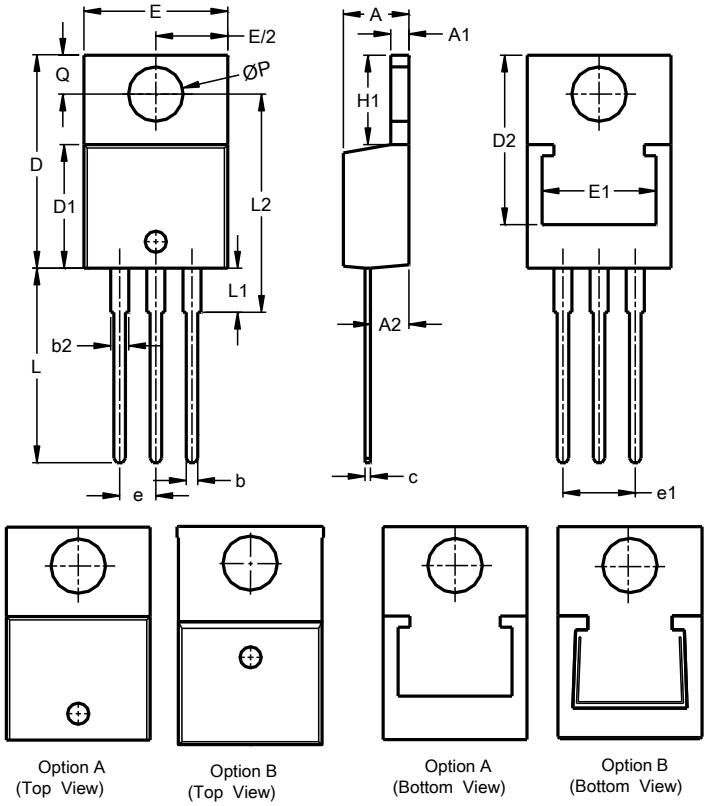
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Package Outline Dimensions

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

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			

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