Product Summary

V_{RRM} (V)	I_O (A)	$V_{F\ (MAX)}$ (V) @ +25°C	$I_{R\ (MAX)}$ (µA) @ +25°C
100	20	0.82	100

Features and Benefits

- 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)**

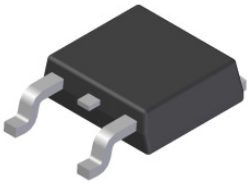
Description and Applications

The SDT20B100D1 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:

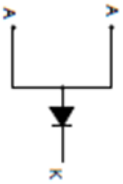
- DC-DC Converters
- AC-DC Adaptors

Mechanical Data

- Case: TO252 (DPAK) (Type TH)
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Polarity: See Below
- Weight:0.317 grams (Approximate)



TO-252 (DPAK) (Type TH)
Top View



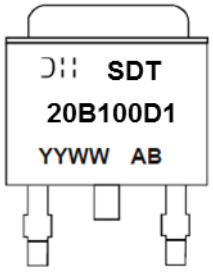
Package Pin Out
Configuration

Ordering Information (Note 4)

Part Number	Case	Packaging
SDT20B100D1-13	TO252 (DPAK) (Type TH)	2,500 Pieces/Reel

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 https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



= Manufacturer's Marking
SDT20B100D1 = 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 (@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	I_O	20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	100	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	$R_{\theta JC}$	2.5	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +175	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	— — — — — —	0.51 0.45 0.61 0.56 0.75 0.68	0.57 0.50 0.66 0.62 0.82 0.75	V	I_F = 5A, T_J = +25°C I_F = 5A, T_J = +125°C I_F = 10A, T_J = +25°C I_F = 10A, T_J = +125°C I_F = 20A, T_J = +25°C I_F = 20A, T_J = +125°C
Leakage Current (Note 6)	I_R	— —	6 3	100 16	μA mA	V_R = 100V, T_J = +25°C V_R = 100V, T_J = +125°C

Notes: 5. 2inch x 2inch Al board + 50mm x 50mm x 23mm Al heatsink.
6. Short duration pulse test used to minimize self-heating effect.

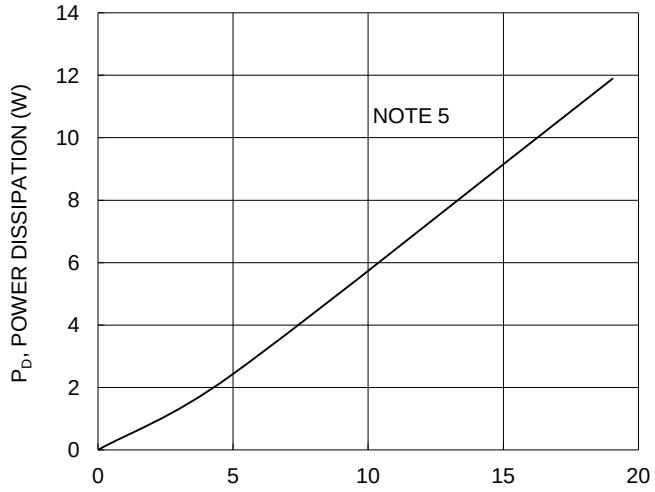


Figure 1 Forward Power Dissipation

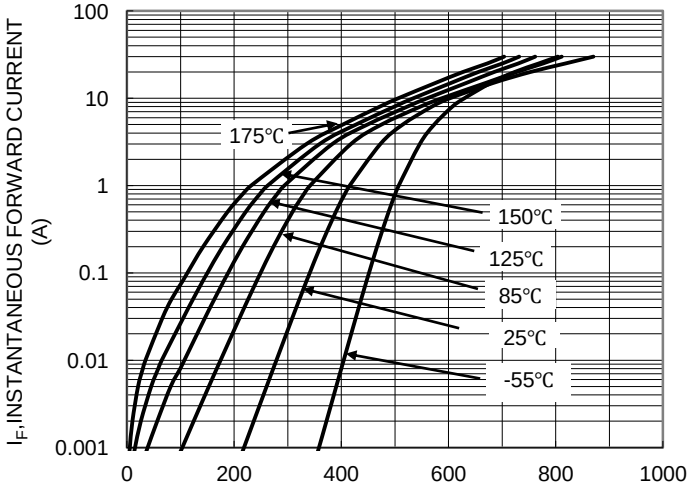


Figure 2 Typical Forward Characteristics

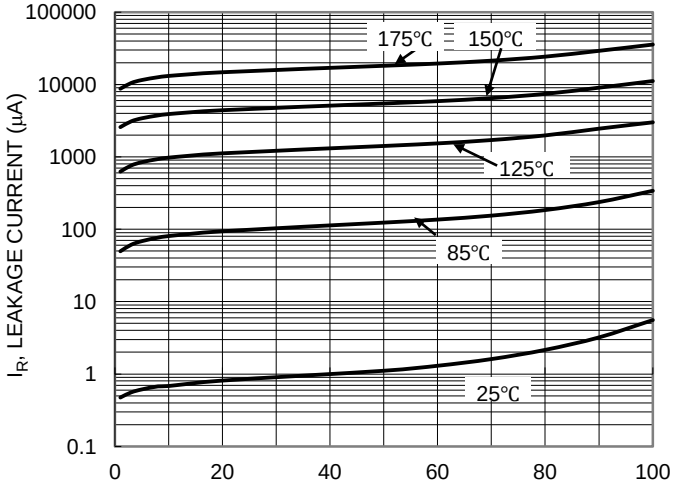


Figure 3 Typical Reverse Characteristics

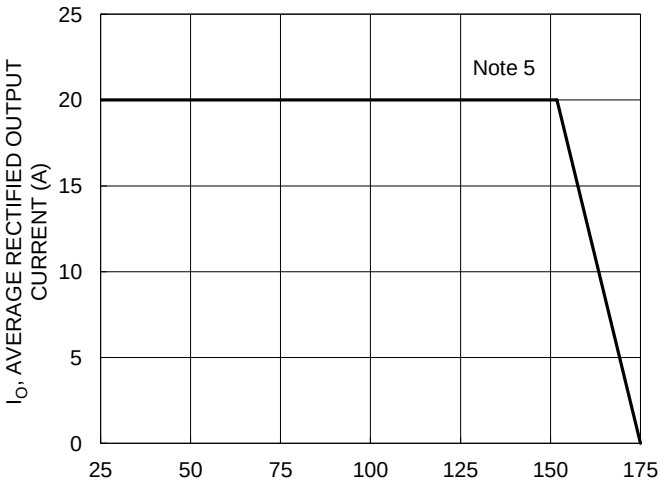


Figure 4 DC Forward Current Derating

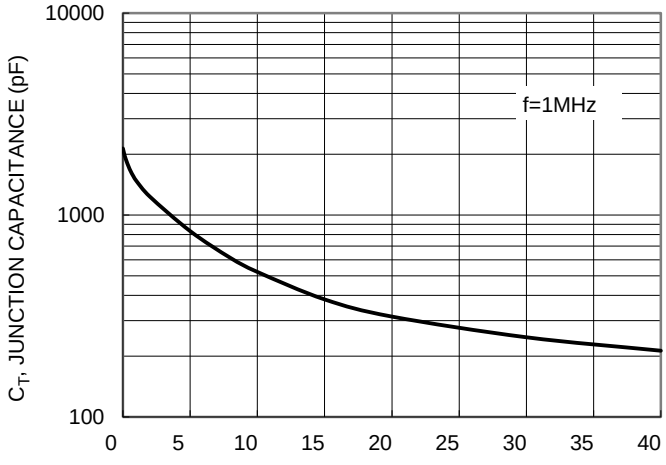
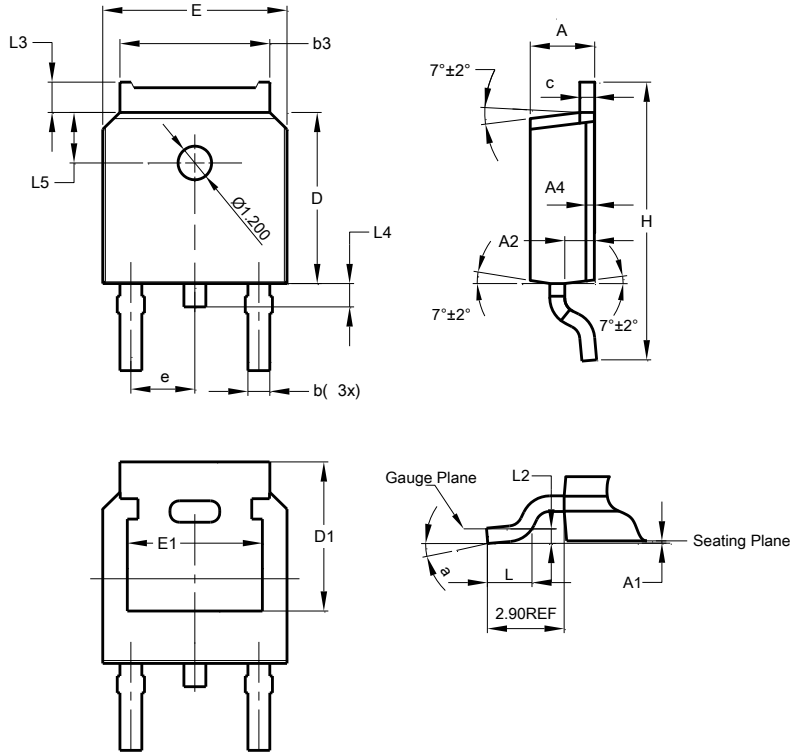


Figure 5 Typical Junction Capacitance

Package Outline Dimensions

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

TO252 (DPAK) (Type TH)

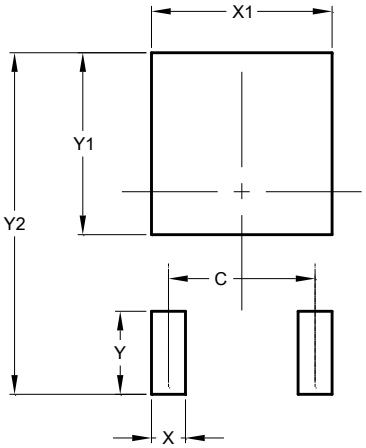


TO252 (DPAK) (Type TH)			
Dim	**Min**	**Max**	**Typ**
A	2.20	2.38	2.30
A1	0.00	0.10	-
A2	0.97	1.17	1.07
A4	0.10 REF		
b	0.72	0.85	0.78
b3	5.23	5.45	5.33
c	0.47	0.58	0.53
D	6.00	6.20	6.10
D1	5.30 REF		
e	2.286 BSC		
E	6.50	6.70	6.60
E1	4.70	4.92	4.83
H	9.90	10.10	10.30
L	1.40	1.70	1.60
L2	0.51 BSC		
L3	0.90	1.25	-
L4	0.60	1.00	0.80
L5	1.70	1.90	1.80
a	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout

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

TO252 (DPAK) (Type TH)



Dimensions	Value (in mm)
C	4.572
X	1.060
X1	5.632
Y	2.600
Y1	5.700
Y2	10.700

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