

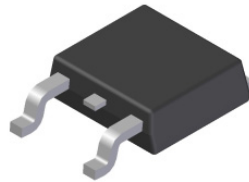
## Product Summary

$V_{RRM}$ (V)	$I_O$ (A)	$V_F$ (MAX) (V) @ +25°C	$I_R$ (MAX) ( $\mu$ A) @ +25°C
100	20	0.82	100

## 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



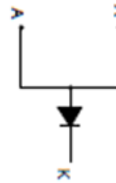
TO-252 (DPAK) (Type TH)  
Top View

## 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)**

## 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)



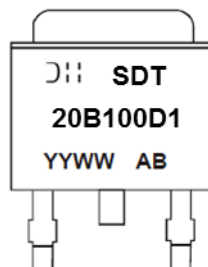
Package Pin Out  
Configuration

## 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](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<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>	100	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	100	A

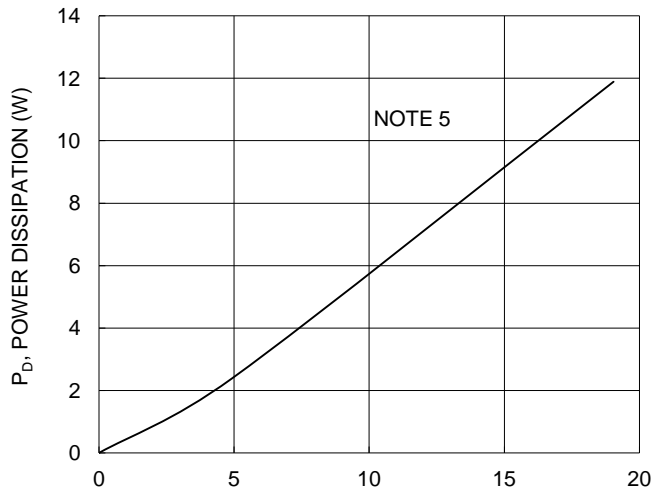
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	R <sub>θJC</sub>	2.5	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +175	°C

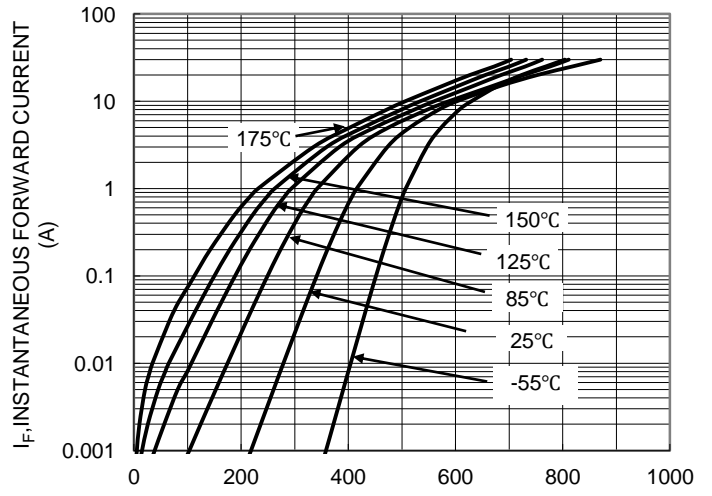
**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	0.51	0.57	V	I <sub>F</sub> = 5A, T <sub>J</sub> = +25°C
		—	0.45	0.50		I <sub>F</sub> = 5A, T <sub>J</sub> = +125°C
		—	0.61	0.66		I <sub>F</sub> = 10A, T <sub>J</sub> = +25°C
		—	0.56	0.62		I <sub>F</sub> = 10A, T <sub>J</sub> = +125°C
		—	0.75	0.82		I <sub>F</sub> = 20A, T <sub>J</sub> = +25°C
		—	0.68	0.75		I <sub>F</sub> = 20A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	6	100	μA	V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C
		—	3	16	mA	V <sub>R</sub> = 100V, T <sub>J</sub> = +125°C

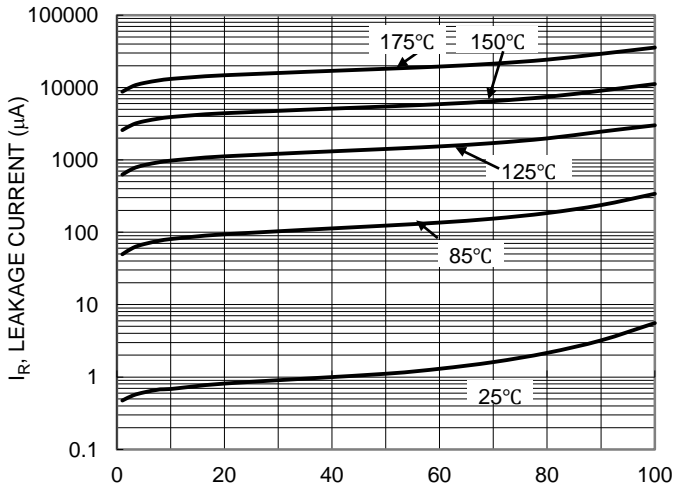
Notes: 5. 2inch x 2inch Al board + 50mm x 50mm x 23mm Al heatsink.  
6. Short duration pulse test used to minimize self-heating effect.



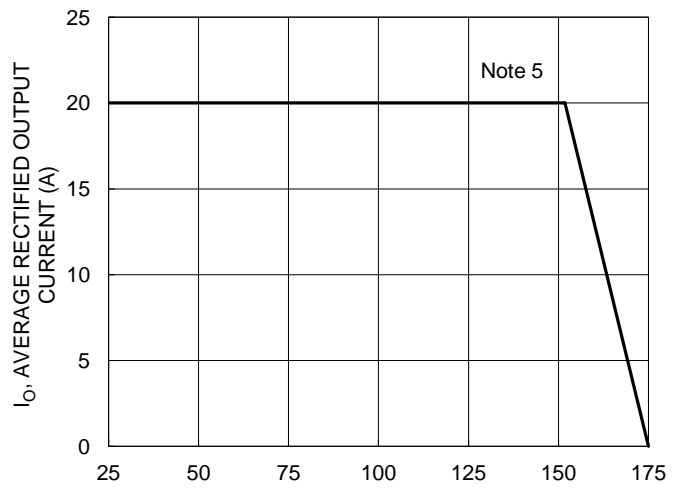
$I_{F(AV)}$ , AVERAGE FORWARD CURRENT (A)  
Figure 1 Forward Power Dissipation



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (mV)  
Figure 2 Typical Forward Characteristics



$V_R$ , REVERSE VOLTAGE (V)  
Figure 3 Typical Reverse Characteristics



$T_C$ , CASE TEMPERATURE (°C)  
Figure 4 DC Forward Current Derating

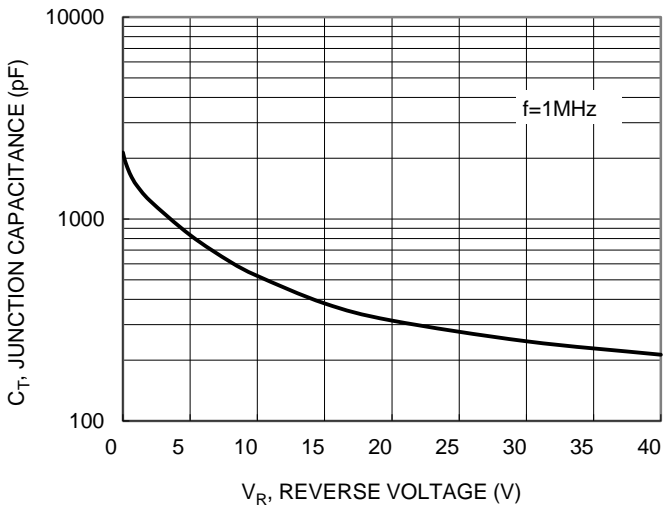
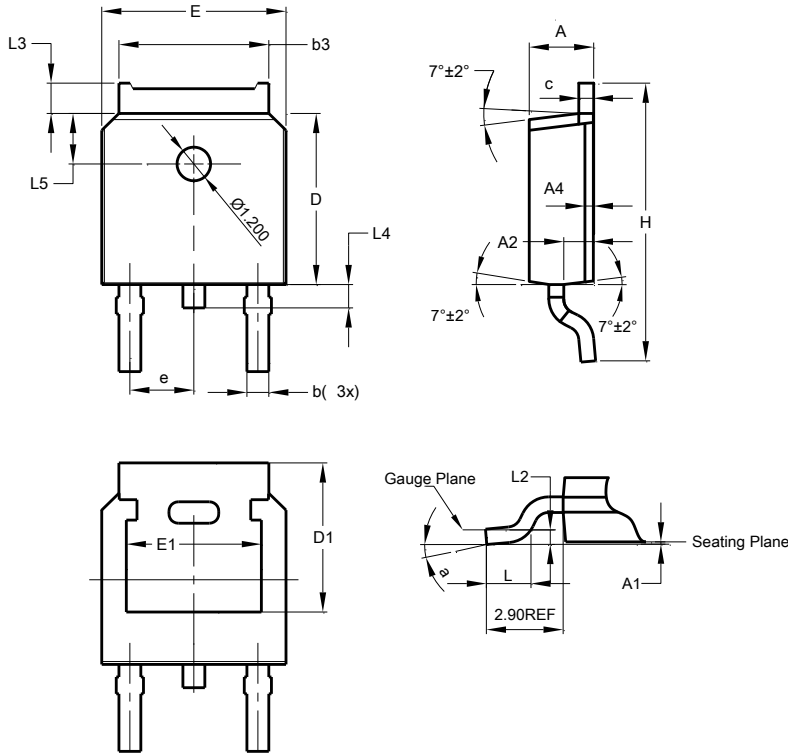


Figure 5 Typical Junction Capacitance

**Package Outline Dimensions**

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

**TO252 (DPAK) (Type TH)**

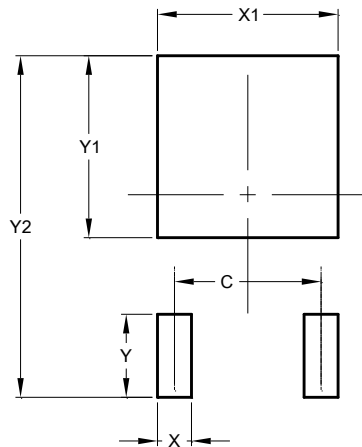


TO252 (DPAK) (Type TH)			
Dim	Min	Max	Typ
A	2.20	2.38	2.30
A1	0.00	0.10	-
A2	0.97	1.17	1.07
A4	0.10 REF		
b	0.72	0.85	0.78
b3	5.23	5.45	5.33
c	0.47	0.58	0.53
D	6.00	6.20	6.10
D1	5.30 REF		
e	2.286 BSC		
E	6.50	6.70	6.60
E1	4.70	4.92	4.83
H	9.90	10.10	10.30
L	1.40	1.70	1.60
L2	0.51 BSC		
L3	0.90	1.25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

**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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