



**THE DATASHEET OF  
SDT5A100SAF-13**



## Product Summary

Device	V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F(MAX)</sub> (V) @ +25°C	I <sub>R(MAX)</sub> (μA) @ +25°C
SDT5A100SAF	100	5	0.66	50

## Description and Applications

The SDT5A100SAF provides very low V<sub>F</sub> 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

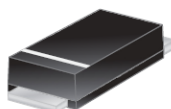
## Features and Benefits

- 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: SMAF
- 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
- Polarity: Cathode Band
- Weight: 0.064 grams (Approximate)

SMAF



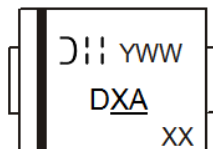
Top View

## Ordering Information (Note 4)

Part Number	Case	Packaging
SDT5A100SAF-13	SMAF	10,000/Tape & Reel

- 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



DXA = Product Type Marking Code  
 DII = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 9 for 2019)  
 WW = Week Code (01 to 53)  
 XX = Foundry and Assembly Site

**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>	5	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	80	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	60	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	R <sub>θJA</sub>	35	°C/W
Typical Thermal Resistance Junction to Case (Note 5)	R <sub>θJC</sub>	28	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°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>	—	0.60	0.66	V	I <sub>F</sub> = 5A, T <sub>J</sub> = +25°C
Leakage Current (Note 7)	I <sub>R</sub>	—	5	50	μA	V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C
		—	—	15	mA	V <sub>R</sub> = 100V, T <sub>J</sub> = +125°C

Notes: 5. Device mounted on FR-4 substrate, 1"x1", 2oz, single-sided, PC boards with 0.56"x0.73" copper pad.  
6. With 50mmx50mmx23mm Al heatsink.  
7. Short duration pulse test used to minimize self-heating effect.

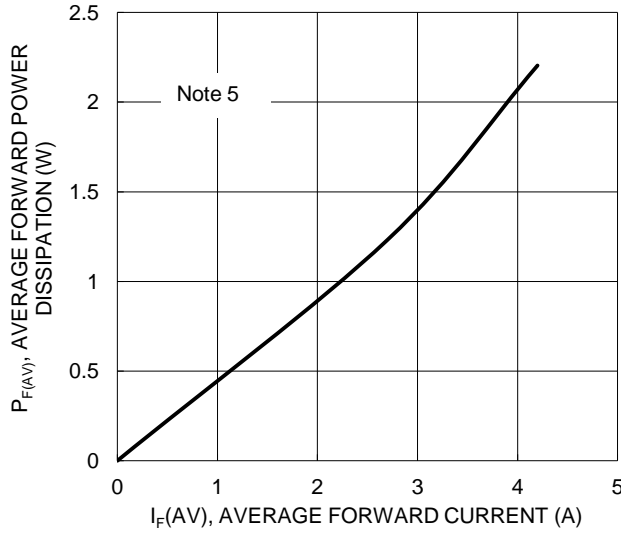


Figure 1 Forward Power Dissipation

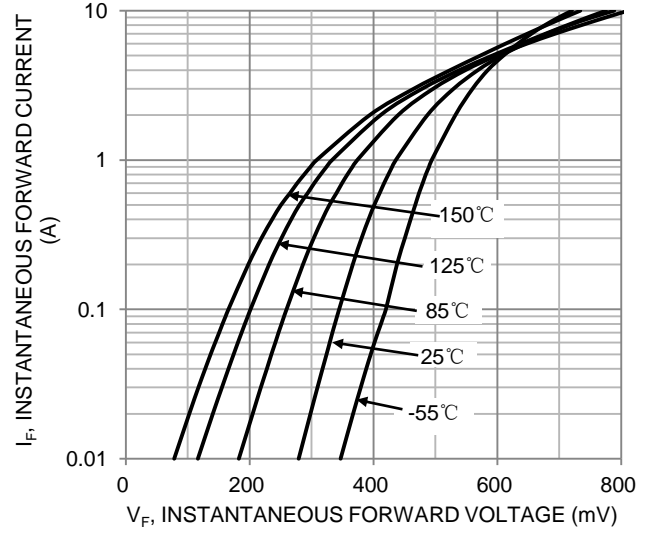


Figure 2 Typical Forward Characteristics

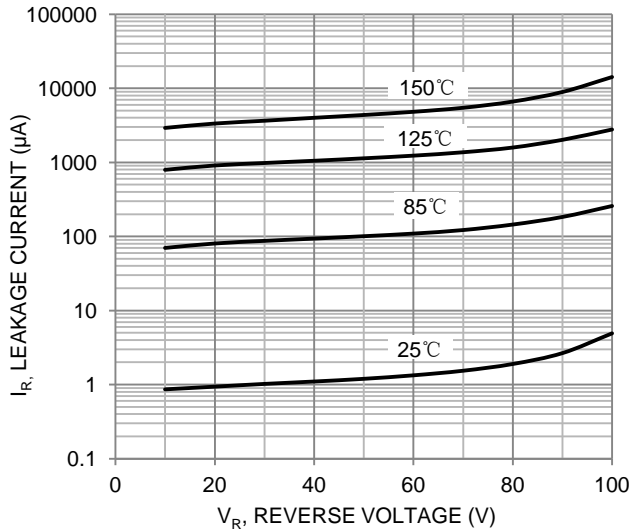


Figure 3 Typical Reverse Characteristics

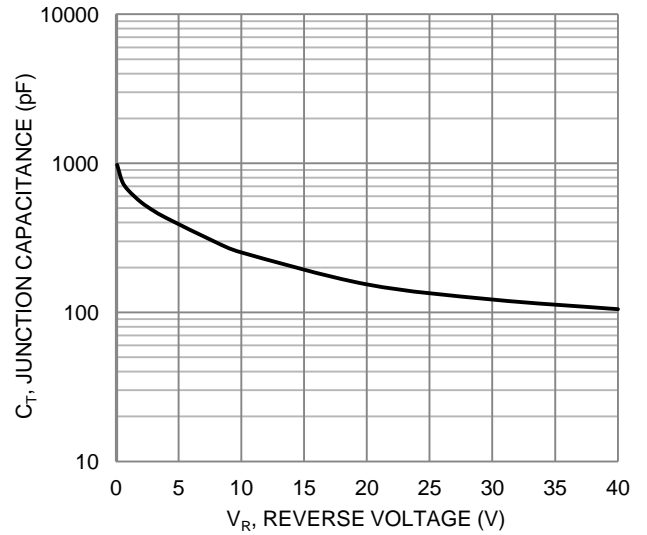


Figure 4 Typical Junction Capacitance vs. Reverse Voltage

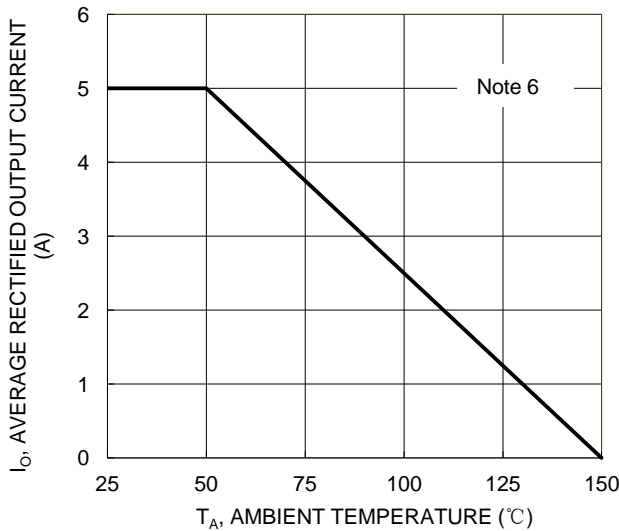
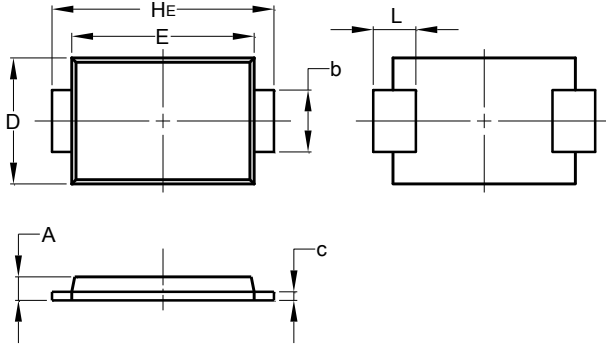


Figure 5 DC Forward Current Derating

**Package Outline Dimensions**

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

**SMAF**

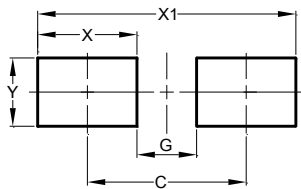


SMAF		
Dim	Min	Max
A	0.90	1.10
b	1.25	1.65
c	0.10	0.40
D	2.25	2.95
E	3.95	4.60
HE	4.80	5.60
L	0.50	1.50
All Dimensions in mm		

**Suggested Pad Layout**

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

**SMAF**



Dimensions	Value (in mm)
C	4.00
G	1.50
X	2.50
X1	6.50
Y	1.70

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