

**Product Summary** (@  $T_A = +25^\circ\text{C}$ )

$V_{RRM}$ (V)	$I_O$ (A)	$V_{F(MAX)}$ (mV)	$I_{R(MAX)}$ ( $\mu\text{A}$ )
45	3	480	280


**Applications**

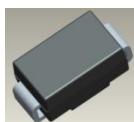
- SMPS
- AC-DC
- DC-DC Converter
- Freewheeling Diodes
- Reverse Polarity Protection
- Blocking Diodes

**Features and Benefits**

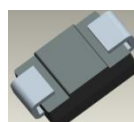
- Low Leakage Current
- Soft, Fast Switching Capability
- $+150^\circ\text{C}$  Operating Junction Temperature
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**Mechanical Data**

- Case: SMA
- Case Material: Molded Plastic, "Green" Molding Compound.  
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish.)  
Solderable per MIL-STD-202, Method 208 
- Polarity Indicator: Cathode Band
- Weight: 0.064 grams (Approximate)



Top View

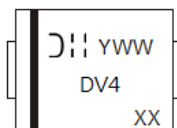


Bottom View

**Ordering Information** (Note 4)

Part Number	Compliance	Case	Packaging
SDT3A45SA-13	Commercial	SMA	5,000/Tape & 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** (Note 5)


DV4 = Product Type Marking Code  
 DV4 = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 7 for 2017)  
 WW = Week Code 01 to 52  
 XX = Foundry and Assembly Site

Note: 5. Device has a cathode band (as shown above) and may also have a cathode notch.

## 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>	45	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	3	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	50	A

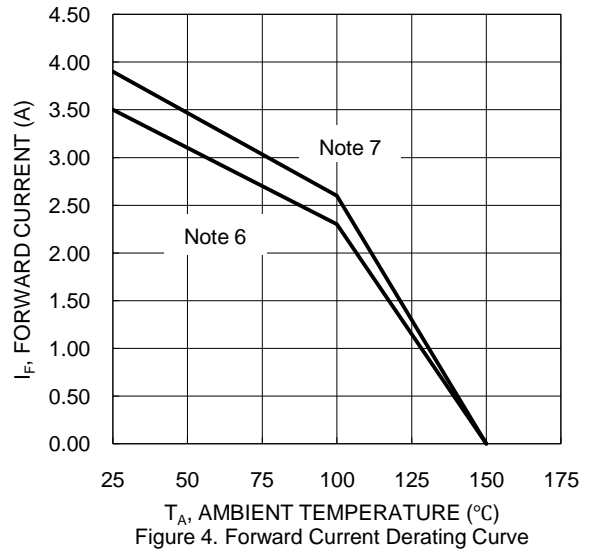
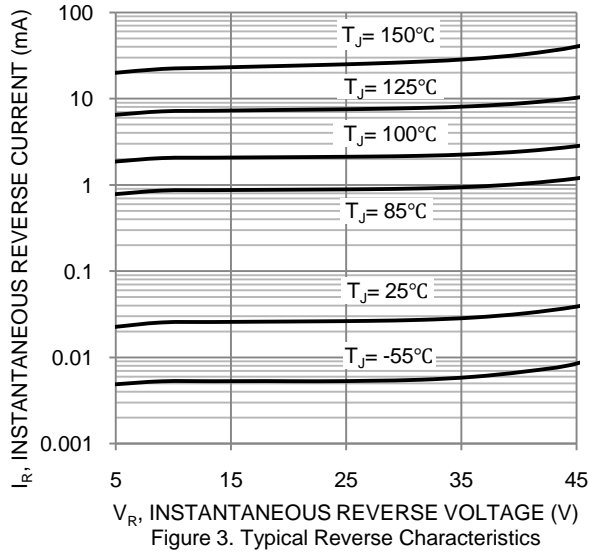
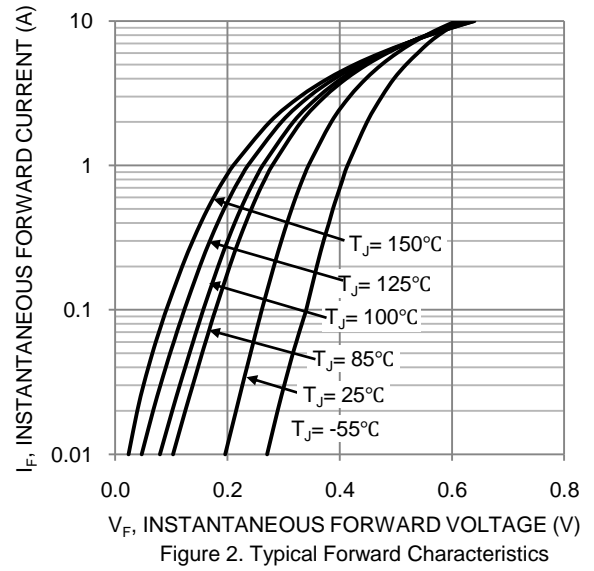
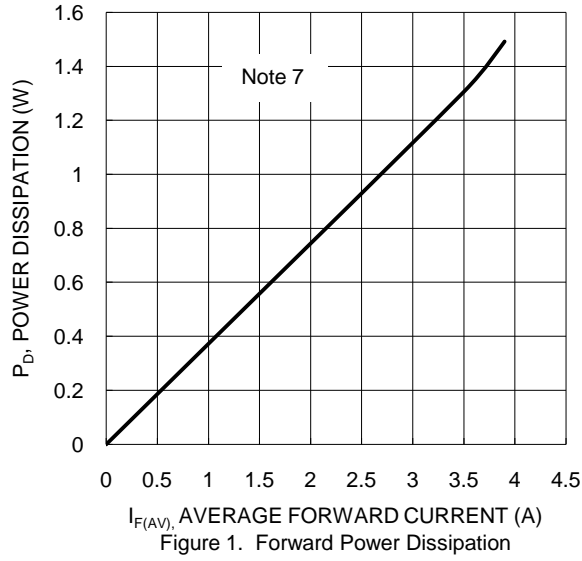
## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Ambient (Note 6)	R <sub>θJA</sub>	100	°C/W
Thermal Resistance Junction to Ambient (Note 7)	R <sub>θJA</sub>	83	
Thermal Resistance Junction to Case (Note 6)	R <sub>θJC</sub>	62	
Thermal Resistance Junction to Case (Note 7)	R <sub>θJC</sub>	38	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

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

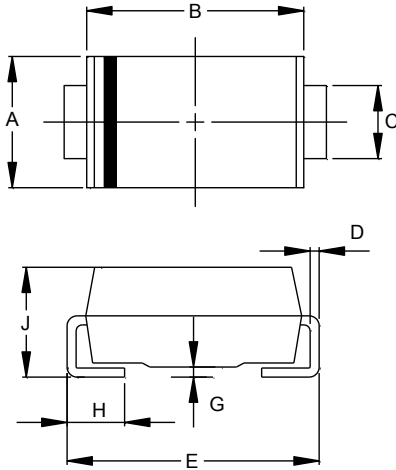
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	—	0.48	V	I <sub>F</sub> = 3.0A, T <sub>J</sub> = +25°C
				0.40		I <sub>F</sub> = 3.0A, T <sub>J</sub> = +125°C
Leakage Current (Note 8)	I <sub>R</sub>	—	8	280	μA	V <sub>R</sub> = 45V, T <sub>J</sub> = +25°C
				—	mA	V <sub>R</sub> = 45V, T <sub>J</sub> = +100°C
				80	mA	V <sub>R</sub> = 45V, T <sub>J</sub> = +125°C

Notes: 6. FR-4 substrate, 1"×1", 2oz, single-sided, PC boards with 0.1"×0.15" copper pad.  
7. FR-4 substrate, 0.4"×0.5", 2oz, single-sided, PC boards with 0.2"×0.25" copper pad.  
8. Short duration pulse test used to minimize self-heating effect.



## Package Outline Dimensions

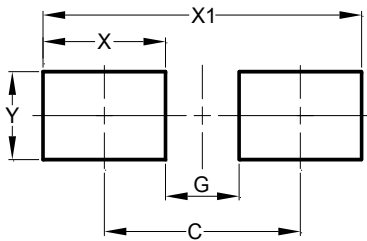
Please see <http://www.diodes.com/package-outlines.html> for the latest version.



SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	1.96	2.40
All Dimensions in mm		

## Suggested Pad Layout

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



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

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