NEW PRODUCT

SDT3A45SAF

3A
TRENCH SCHOTTKY BARRIER RECTIFIER
SMAF

Product Summary (@ T_A = +25°C)

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

Features and Benefits

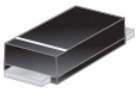
- Low Leakage Current
- Soft, Fast Switching Capability
- +150°C Operating Junction Temperature
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

Applications

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

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: Lead Free Plating (Matte Tin Finish.) Solderable per MIL-STD-202, Method 208 e3
- Polarity Indicator: Cathode Band
- Weight: 0.036 grams (Approximate)



SMAF

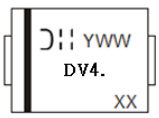
Device Symbol

Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
SDT3A45SAF-13	Commercial	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 (Note 5)



DV4. = Product Type Marking Code
YWW = Date Code Marking
Y = Last Digit of Year (ex: 9 for 2019)
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.

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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}	45	V
Average Rectified Output Current	I_O	3	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	30	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Ambient (Note 6) Thermal Resistance Junction to Ambient (Note 7) Thermal Resistance Junction to Case (Note 6) Thermal Resistance Junction to Case (Note 7)	$R_{\theta JA}$ $R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JC}$	100 83 66 38	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	— — —	— 0.37 —	0.48 — 0.40	V	I_F = 3.0A, T_J = +25°C I_F = 3.0A, T_J = +100°C I_F = 3.0A, T_J = +125°C
Leakage Current (Note 8)	I_R	— — —	— 4 —	280 — 80	µA mA mA	V_R = 45V, T_J = +25°C V_R = 45V, T_J = +100°C V_R = 45V, T_J = +125°C

Notes: 6. FR-4 substrate, 1"*1", 2oz, single-sided, PC boards with 0.06"*0.09" 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.

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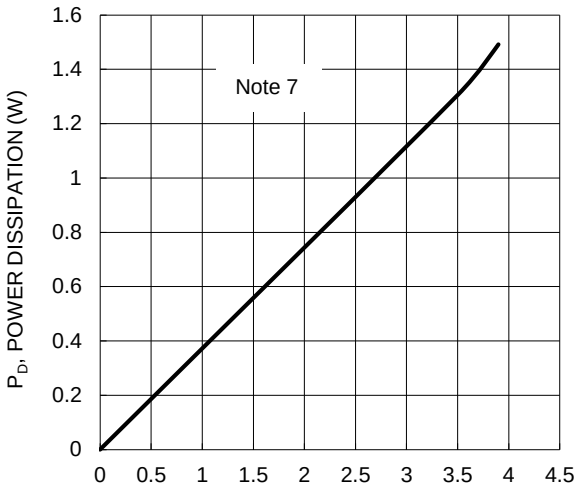

Figure 1. Forward Power Dissipation

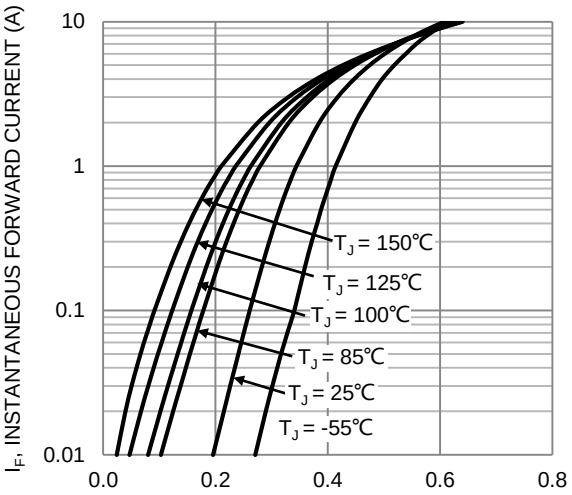

Figure 2. Typical Forward Characteristics

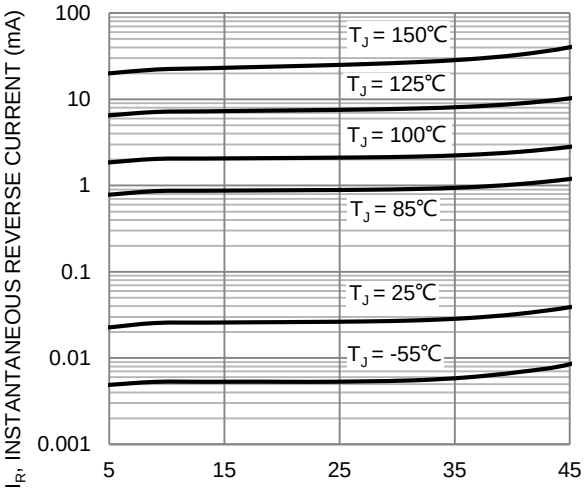

Figure 3. Typical Reverse Characteristics

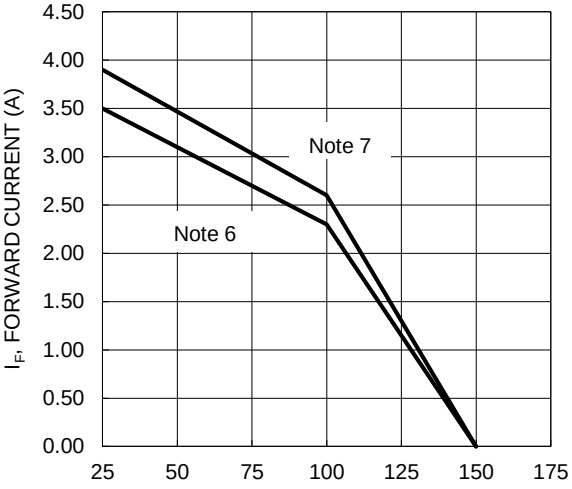

Figure 4. Forward Current Derating Curve

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Package Outline Dimensions

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

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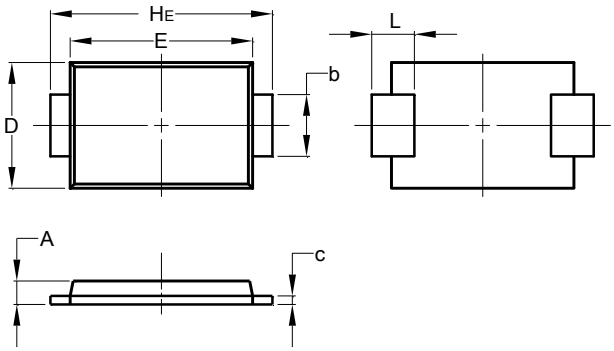

SMAF		
Dim	**Min**	**Max**
A	0.90	1.10
b	1.25	1.65
c	0.10	0.40
D	2.25	2.95
E	3.95	4.60
H_E	4.80	5.60
L	0.50	1.50
All Dimensions in mm		

Suggested Pad Layout

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

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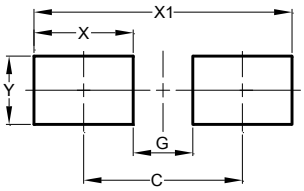

Dimensions	Value (in mm)
C	4.00
G	1.50
X	2.50
X1	6.50
Y	1.70

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