

# SBM54AL AFC

## Surface Mount Extreme Low $V_f$ Schottky Barrier Rectifier

**Voltage**

**45 V**

**Current**

**5 A**

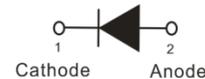
### Features

- Extreme low forward voltage drop
- Low power loss, high efficiency
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : SMAF-C plastic
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0012 ounces, 0.034 grams

SMAF-C



### Maximum Ratings and Thermal Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	45	V
Maximum RMS Voltage	$V_{RMS}$	32	V
Maximum DC Blocking Voltage	$V_R$	45	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	5	A
Peak Forward Surge Current : 8.3 ms Single Half Sine-Wave Superimposed On Rated Load	$I_{FSM}$	80	A
Typical Junction Capacitance Measured at 1 MHz And Applied $V_R = 4V$	$C_J$	220	pF
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	150	$^\circ\text{C/W}$
(Note 2)	$R_{\theta JL}$	20	
Operating Junction Temperature Range	$T_J$	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

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## Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

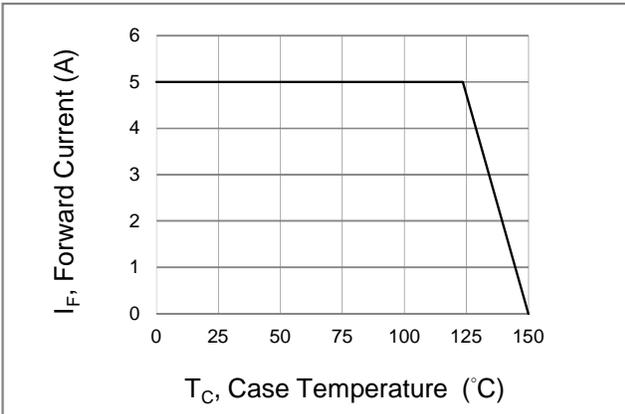
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage	$V_F$	$I_F = 1\text{ A}, T_J = 25^\circ\text{C}$	-	0.34	-	V
		$I_F = 2\text{ A}, T_J = 25^\circ\text{C}$	-	0.38	-	
		$I_F = 5\text{ A}, T_J = 25^\circ\text{C}$	-	0.48	0.54	
		$I_F = 1\text{ A}, T_J = 125^\circ\text{C}$	-	0.26	-	
		$I_F = 2\text{ A}, T_J = 125^\circ\text{C}$	-	0.33	-	
		$I_F = 5\text{ A}, T_J = 125^\circ\text{C}$	-	0.5	-	
Reverse Current <sup>(Note 3)</sup>	$I_R$	$V_R = 36\text{ V}, T_J = 25^\circ\text{C}$	-	20	-	uA
		$V_R = 45\text{ V}, T_J = 25^\circ\text{C}$	-	-	210	mA
		$V_R = 45\text{ V}, T_J = 100^\circ\text{C}$	-	-	10	
		$V_R = 45\text{ V}, T_J = 125^\circ\text{C}$	-	7	-	

NOTES :

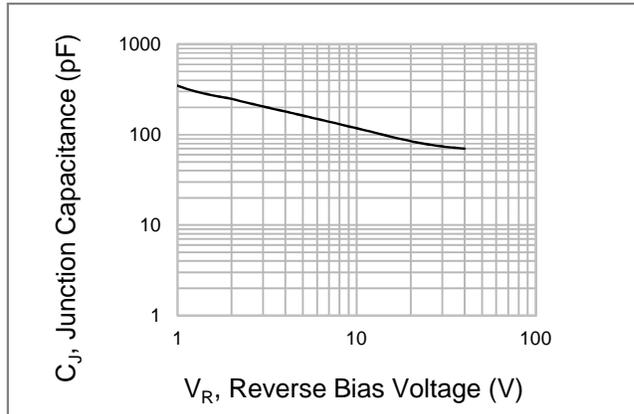
1. Mounted on a FR4 PCB, single-sided copper, standard footprint.
2. Mounted on a FR4 PCB, single-sided copper, with 10cm\*10cm copper pad area.
3. Short duration pulse test used to minimize self-heating effect.

# SBM54ALAF3

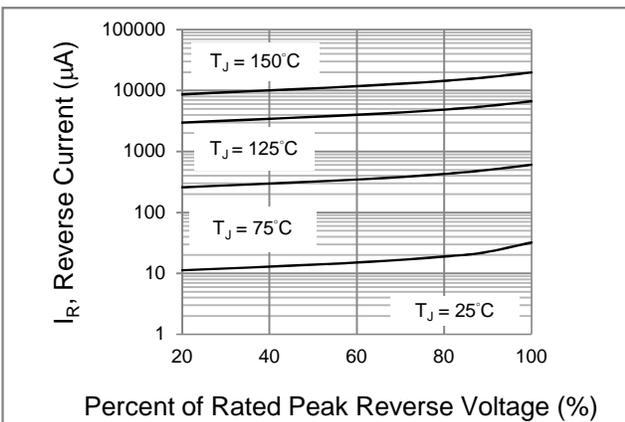
## TYPICAL CHARACTERISTIC CURVES



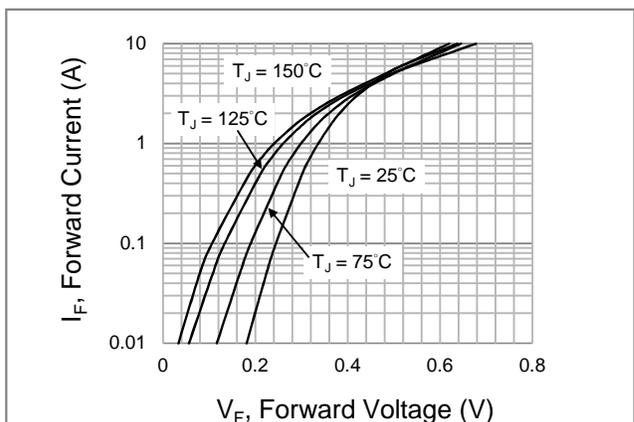
**Fig.1 Forward Current Derating Curve**



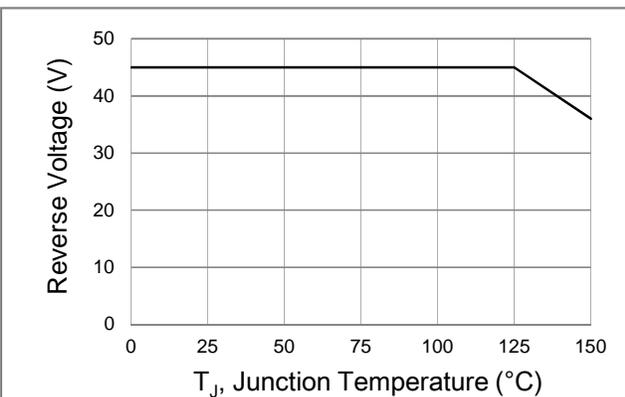
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



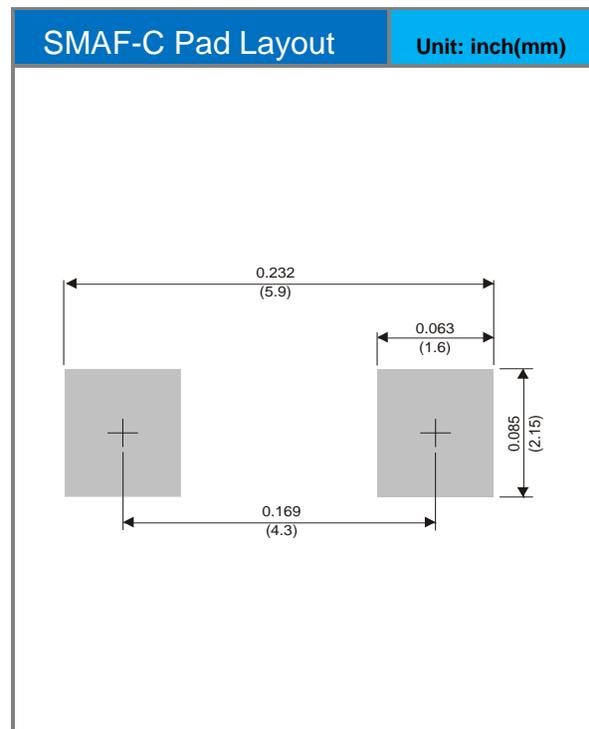
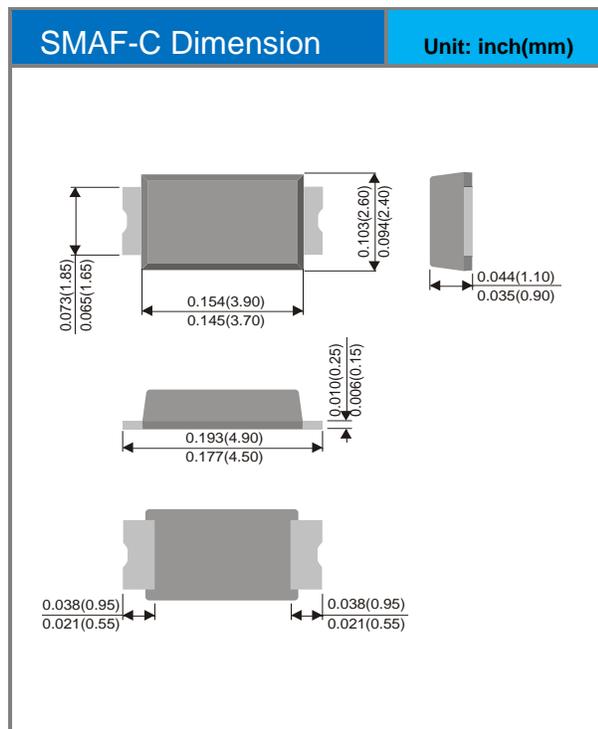
**Fig.5 Operating Temperature Derating Curve**

# SBM54AL AFC

## Product and Packing Information

Part No.	Package Type	Packing Type	Marking
SBM54AL AFC	SMAF-C	3K pcs / 7" reel	SBM54AL

## Packaging Information & Mounting Pad Layout



## **SBM54AL AFC**

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