SBA520AFC ~ SBA540AFC Series

Surface Mount Extreme Low Vf Schottky Barrier Rectifier

Voltage 20~40 V **Current** 5 A

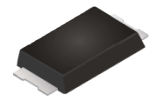
Features

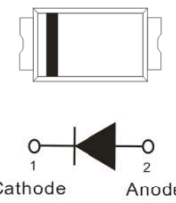
- Extreme low forward voltage drop
- Low power loss, high efficiency
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

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

SMAF-C





Maximum Ratings (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SBA520AFC	SBA530AFC	SBA540AFC	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	20	30	40	V
Maximum RMS Voltage	V_{RMS}	14	21	28	V
Maximum DC Blocking Voltage	V_R	20	30	40	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 Thermal Resistance (Note 2)	$R_{\theta JC}$	15			°C/W
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	150			°C/W
Operating Junction Temperature Range	T_J	-55 to +150			°C
Storage Temperature Range	T_{STG}	-55 to +150			°C

Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION		SBA520AFC		SBA530AFC		SBA540AFC		UNITS
				TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward Voltage	V_F	I_F = 10mA	T_J =25 °C	0.17	-	0.17	-	0.17	-	V
		I_F = 2A		0.34	-	0.35	-	0.36	-	
		I_F = 5A		-	0.45	-	0.46	-	0.49	
		I_F = 10mA	T_J =125 °C	0.04	-	0.04	-	0.05	-	V
		I_F = 2A		0.25	-	0.27	-	0.29	-	
Reverse Current (Note 3)	I_R	V_R = 10V	T_J=25°C	47	-	33	-	25	-	μA
		V_R = 20V		-	300	51	-	32	-	
		V_R = 30V		-	-	-	300	55	-	
		V_R = 40V		-	-	-	-	-	250	
		V_R = 20V	T_J =125 °C	21	-	11	-	8	-	mA
		V_R = 30V		-	-	19	-	12	-	
		V_R = 40V		-	-	-	-	19	-	

Note : 1. Mounted on a FR4 PCB, single-sided copper, standard footprint

2. Mounted on a FR4 PCB, single-sided copper, with 100cm² copper pad area

3. Short duration pulse test used to minimize self-heating effect

SBA520AFC ~ SBA540AFC Series

TYPICAL CHARACTERISTIC CURVES

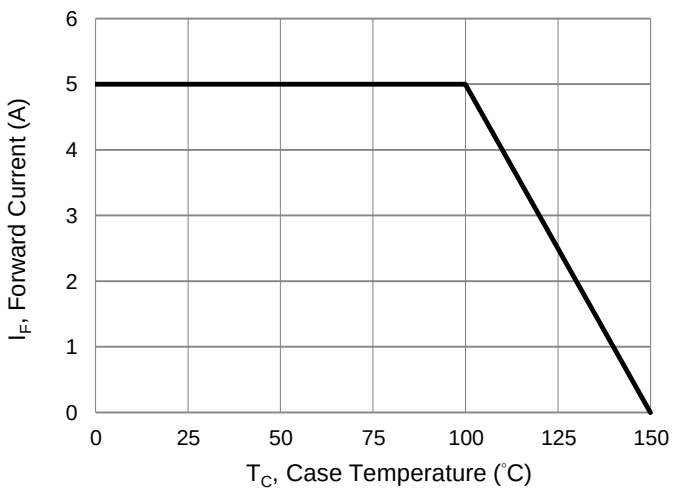


Fig.1 Forward Current Derating Curve

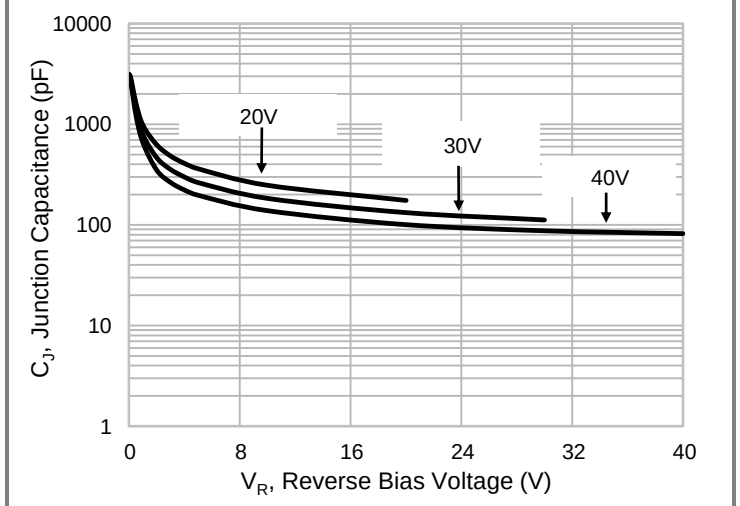


Fig. 2 Typical Junction Capacitance

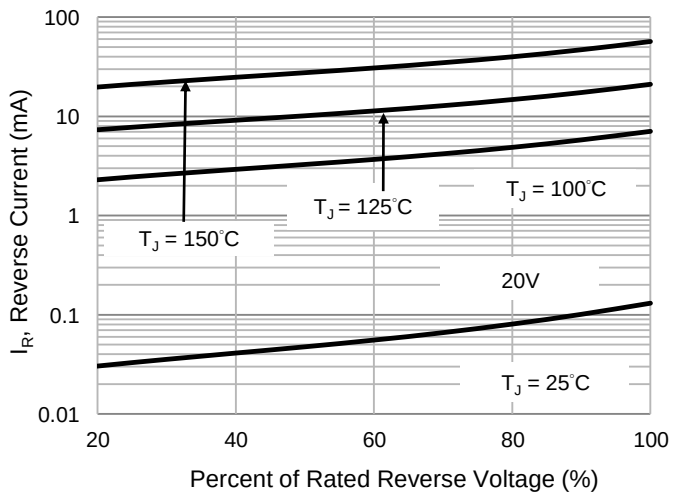


Fig.3 Typical Reverse Characteristics

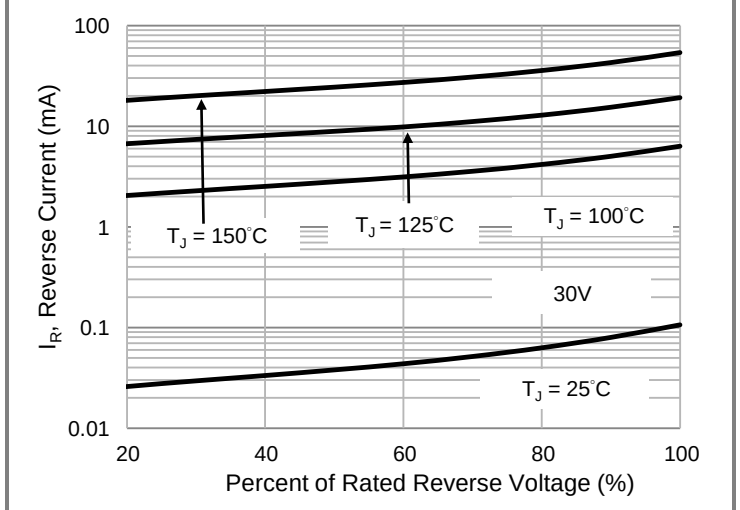


Fig.4 Typical Reverse Characteristics

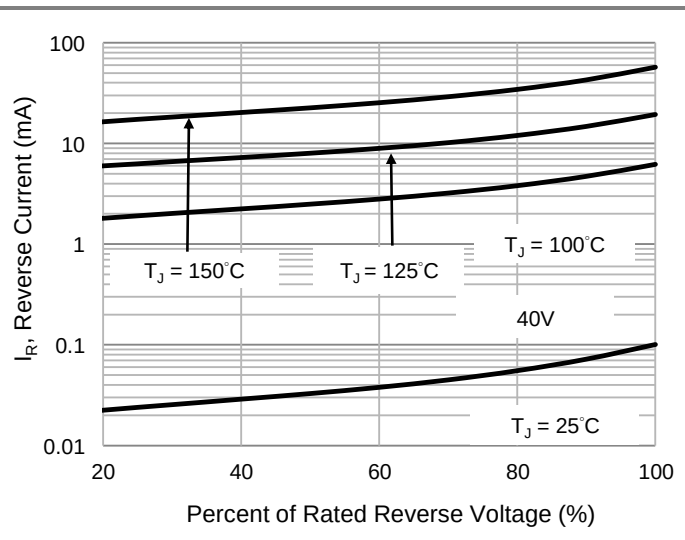


Fig.5 Typical Reverse Characteristics

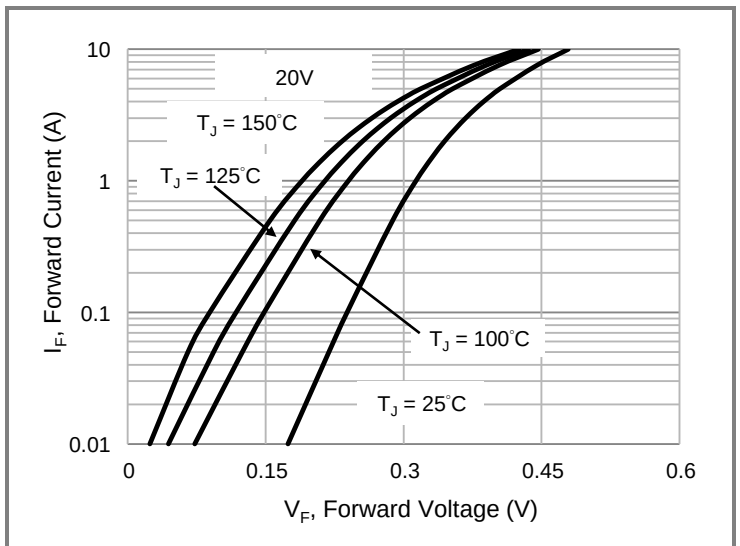


Fig.6 Typical Forward Characteristics

SBA520AFC ~ SBA540AFC Series

TYPICAL CHARACTERISTIC CURVES

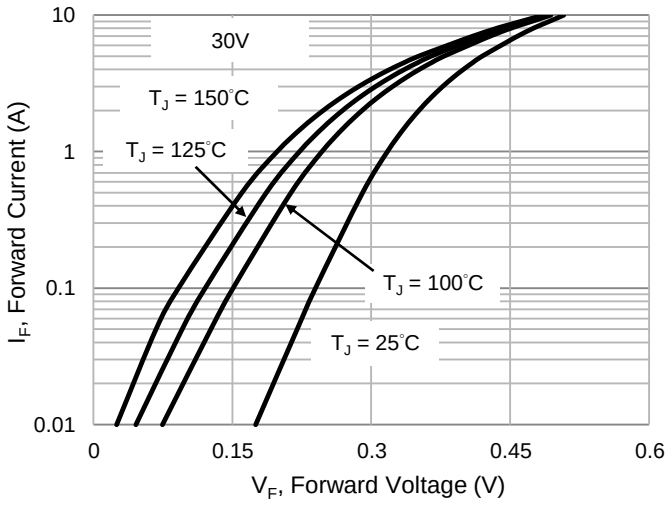


Fig.7 Typical Forward Characteristics

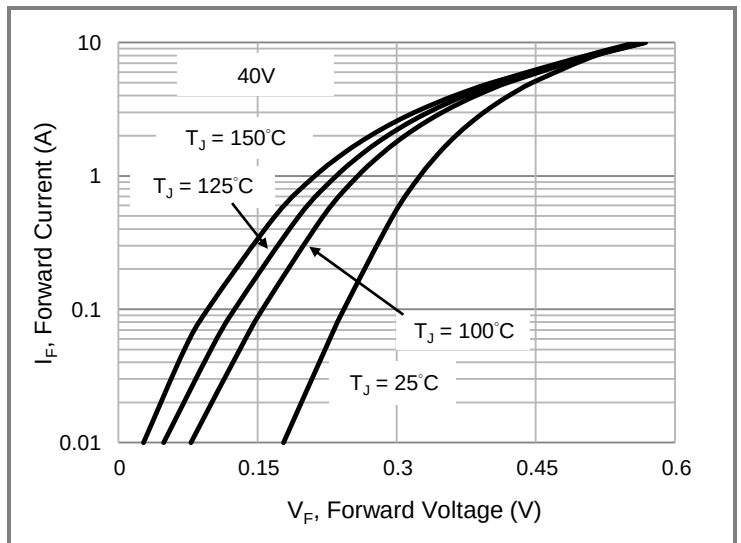


Fig.8 Typical Forward Characteristics

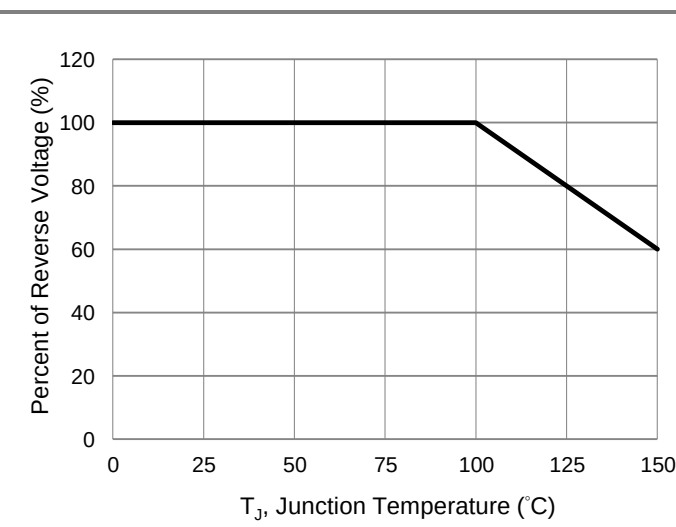


Fig.9 Operating Temperature Derating Curve

SBA520AFC ~ SBA540AFC Series

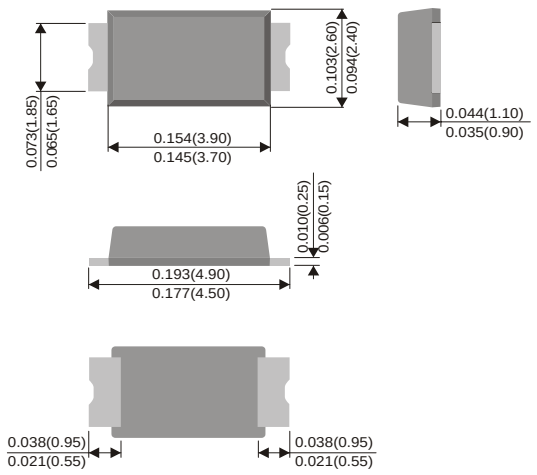
Part No. Packing Code Version

Part No. Packing Code	Package Type	Packing Type	Marking	Version
SBA520AFC_R1_00001	SMAF-C	3K pcs / 7” reel	SBA520	Halogen free
SBA530AFC_R1_00001	SMAF-C	3K pcs / 7” reel	SBA530	Halogen free
SBA540AFC_R1_00001	SMAF-C	3K pcs / 7” reel	SBA540	Halogen free

Packaging Information & Mounting Pad Layout

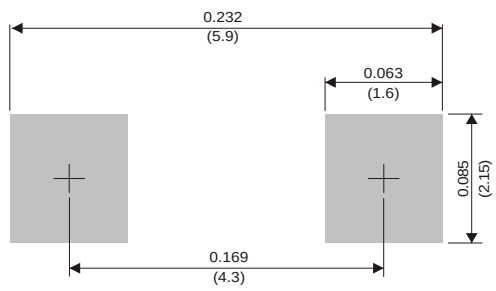
SMAF-C Dimension

Unit: inch(mm)



SMAF-C Pad Layout

Unit: inch(mm)



SBA520AFC ~ SBA540AFC Series

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