

### SM520AF~SM5200AF

SCHOTTKY BARRIER RECTIFIER REVERSE VOLTAGE 20V TO 200V FORWARD CURRENT 5.0A

### **DESCRIPTION**

The SM520AF~SM5200AF are available in SMAF Package.

### **FEATURES**

- Metal silicon junction, majority carrier conduction
- For surface mounted applications
- Low power loss, high efficiency
- High forward surge current capability
- For use in low voltage, high frequency inverters,
  free wheeling, and polarity protection applications
- Available in SMAF Package

### ORDERING INFORMATION

Package Type	Part Number					
SMAF	SM520AF					
	SM540AF					
	SM560AF					
	SM580AF					
	SM5100AF					
	SM5120AF					
	SM5150AF					
	SM5200AF					
Note	SPQ: 3,000pcs/Reel					
AiT provides all RoHS Compliant Products						

### **MECHANICAL DATA**

Case: SMAF

Terminals: Solderable per MIL-STD-750,

Method 2026

Approx. Weight: 27mg 0.00086oz

## PIN DESCRIPTION

Cathode Anode 2

REV1.0 - MAY 2019 RELEASED - -1

# SM520AF~SM5200AF

SCHOTTKY BARRIER RECTIFIER REVERSE VOLTAGE 20V TO 200V FORWARD CURRENT 5.0A

## ABSOLUTE MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at  $25^{\circ}$ C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz resistive or inductive load, for capacitive load, derate by 20 %

Parameter Parameter		Symbol	SM 520AF	SM 540AF	SM 560AF	SM 580AF	SM 5100AF	SM 5120AF	SM 5150AF	SM 5200AF	Unit
Maximum Repetitive Peak		$V_{RRM}$	20	40	60	80	100	120	150	200	V
Reverse Voltage	Reverse Voltage										
Maximum RMS Volta	V <sub>RMS</sub>	14	28	42	56	70	84	105	140	V	
Maximum DC Blocki	Maximum DC Blocking Voltage			40	60	80	100	120	150	200	V
Maximum Average F	orward	I <sub>F(AV)</sub>									
Rectified Current	Rectified Current		5.0								Α
Peak Forward Surge	Current										
8.3ms Single Half Si	8.3ms Single Half Sine-wave		150								Δ.
Superimposed on Rated Load		I <sub>FSM</sub>								Α	
(JEDEC Method)	(JEDEC Method)										
Max Instantaneous Forward		.,	0.45	0.45			70				\ \/
Voltage at 5A		V <sub>F</sub> 0.45 0.55 0.70 0.85						V			
Maximum DC											
Reverse Current	T <sub>A</sub> =25°C	,	1.0 50							mA	
at Rated DC	T <sub>A</sub> =100°C	IR									
Reverse Voltage											
Typical Junction Capacitance <sup>NOTE1</sup> Cj			800 500							pF	
Typical Thermal Res	RθJA	55						°C/W			
Operating Junction Temperature		_	-55 ~ +125							°C	
Range		TJ								°C	
Storage Temperature	T <sub>STG</sub>	-55 ~ +150							°C		

NOTE1: Measured at 1MHz and applied reverse voltage of 4 V D.C.

NOTE2: P.C.B. mounted with 0.2 X 0.2" (5 X 5 mm) copper pad areas.

REV1.0 - MAY 2019 RELEASED - -2 -

### TYPICAL PERFORMANCE CHARACTERISTICS

Figure. 1 Forward Current Derating Curve

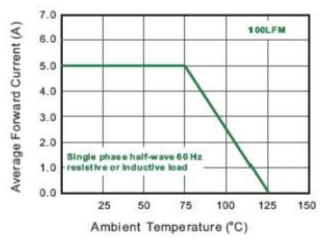


Figure. 3 Typical Forward Characteristic

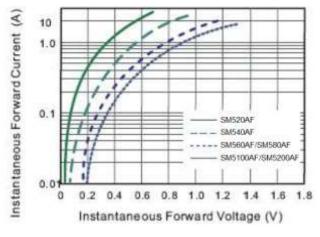


Figure. 5 Maximum Non-repetitive Peak Forward Surge Current

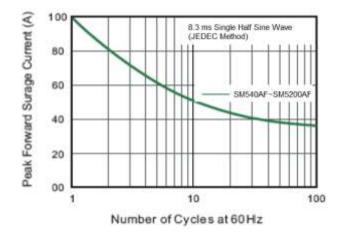


Figure. 2 Typical Reverse Characteristics

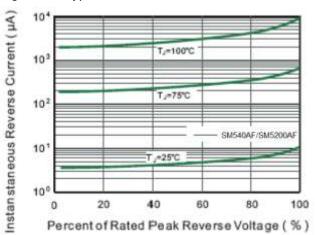


Figure. 4 Typical Junction Capacitance

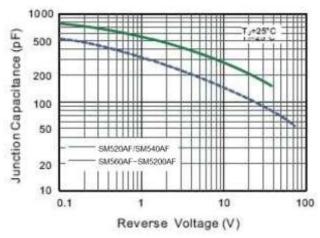
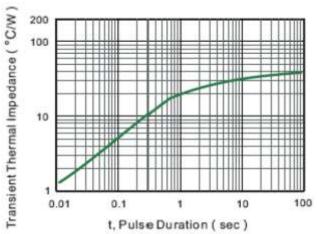


Figure. 6 Typical Transient Thermal Impedance

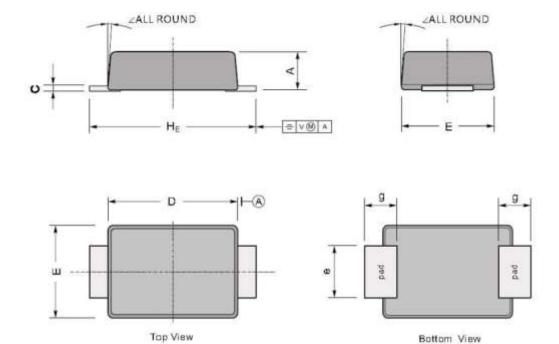


REV1.0 - MAY 2019 RELEASED - - 3 -

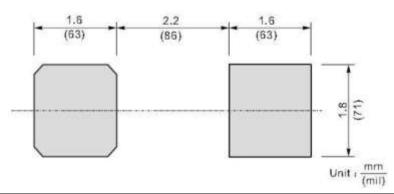
## **PACKAGE INFORMATION**

Dimension in SMAF Package (Unit: mm)

Plastic surface mounted package; 2 leads



The recommended mounting pad size



UNIT		Α	C	D	Е	е	g	HE	∠
mm	Max	1.1	0.20	3.7	2.7	1.6	1.2	4.9	
	Min	0.9	0.12	3.3	2.4	1.3	0.8	4.4	70
mil	Max	43	7.9	146	106	63	47	193	7°
	Min	35	4.7	130	94	51	31	173	

REV1.0 - MAY 2019 RELEASED - - 4 -



#### SM520AF~SM5200AF

SCHOTTKY BARRIER RECTIFIER REVERSE VOLTAGE 20V TO 200V FORWARD CURRENT 5.0A

### **IMPORTANT NOTICE**

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc.'s integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or server property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.

REV1.0 - MAY 2019 RELEASED - - 5 -