



## DESCRIPTION

The SM120A~SM1200A are available in SMA Package.

## ORDERING INFORMATION

Package Type	Part Number
SMA	SM120A
	SM140A
	SM160A
	SM180A
	SM1100A
	SM1120A
	SM1150A
	SM1200A
Note	5,000pcs/Reel
AiT provides all RoHS Compliant Products	

## 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 SMA Package

## MECHANICAL DATA

Case: SMA

Terminals: Solderable per MIL-STD-750,  
Method 2026

Approx. Weight: 70mg / 0.0025oz

## PIN DESCRIPTION





## ABSOLUTE MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz resistive or inductive load, for capacitive load, derate by 20 %

Parameter	Symbol	SM 120A	SM 140A	SM 160A	SM 180A	SM 1100A	SM 1120A	SM 1150A	SM 1200A	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	20	40	60	80	100	120	150	200	V
Maximum RMS Voltage	$V_{RMS}$	14	28	42	56	70	84	105	140	V
Maximum DC Blocking Voltage	$V_{DC}$	20	40	60	80	100	120	150	200	V
Maximum Average Forward Rectified Current at $T_C = 85^\circ\text{C}$	$I_{F(AV)}$	1.0								A
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	40				30				A
Max Instantaneous Forward Voltage at 1A	$V_F$	0.55		0.70		0.85		0.90		V
Maximum DC Reverse Current at Rated DC Reverse Voltage	$I_R$	$T_A=25^\circ\text{C}$		0.3		0.2		0.1		mA
		$T_A=100^\circ\text{C}$		10		5		2		
Typical Junction Capacitance <sup>NOTE1</sup>	$C_j$	110		80						pF
Typical Thermal Resistance <sup>NOTE2</sup>	$R_{\theta JA}$	90								°C/W
Operating Junction Temperature Range	$T_J$	-55 to +125								°C
Storage Temperature Range	$T_{stg}$	-55 to +150								°C

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

NOTE2: P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.



## TYPICAL PERFORMANCE CHARACTERISTICS

Figure. 1 Forward Current Derating Curve

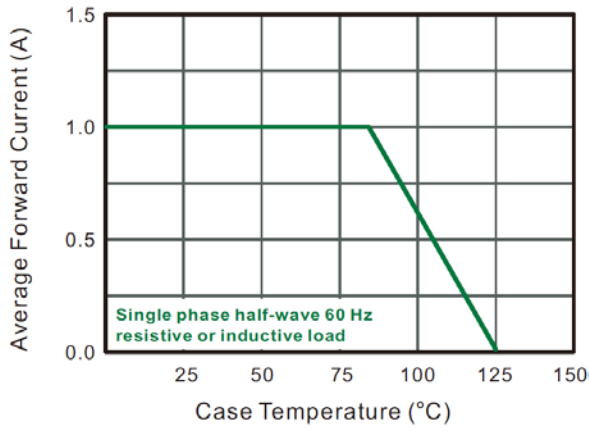


Figure. 2 Typical Reverse Characteristics

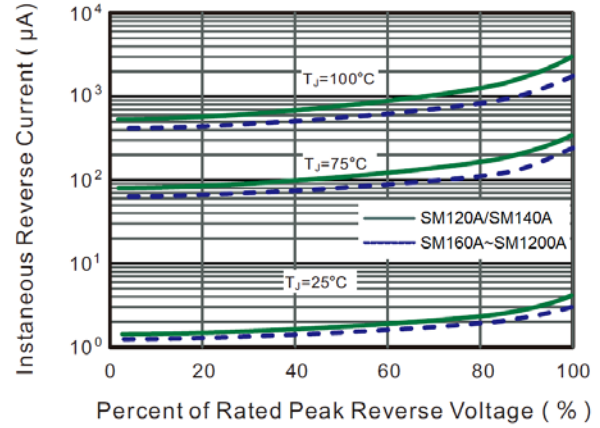


Figure. 3 Typical Forward Characteristic

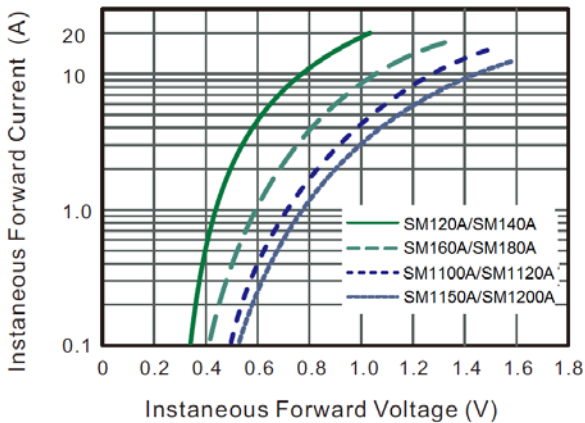


Figure. 4 Typical Junction Capacitance

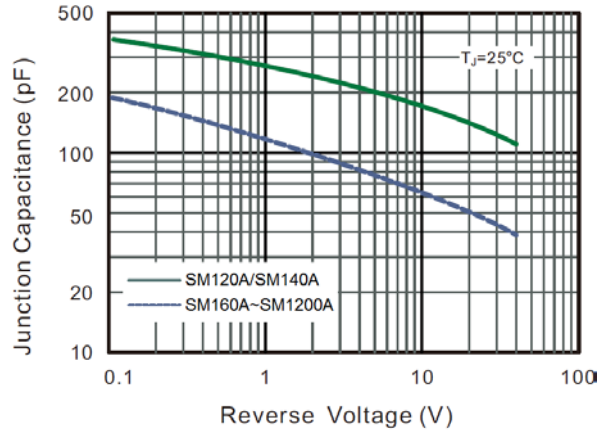


Figure. 5 Maximum Non-Repetitive Peak Forward Surge Current

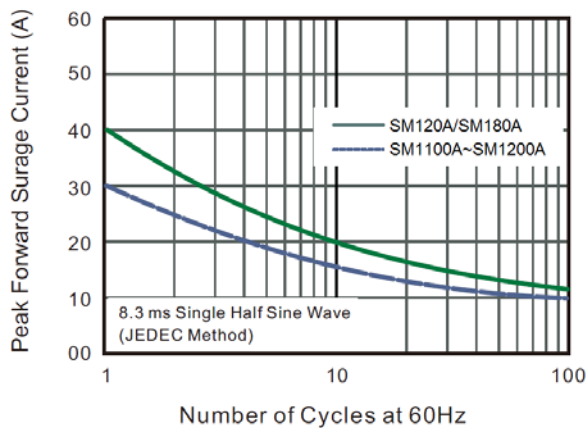
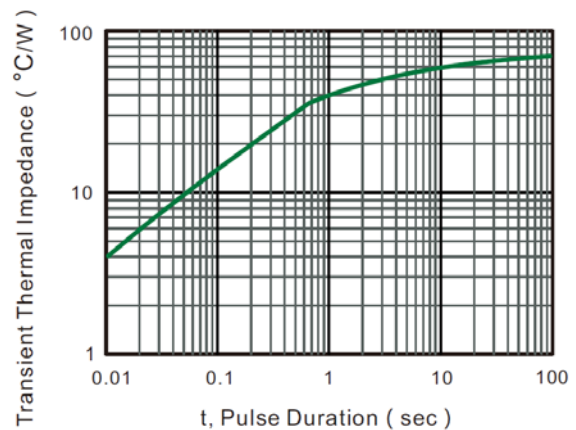


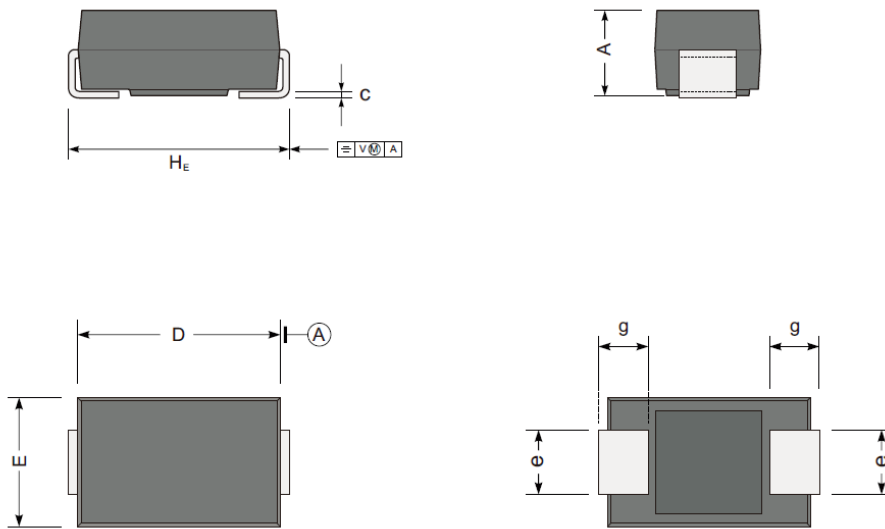
Figure. 6 Typical Transient Thermal Impedance



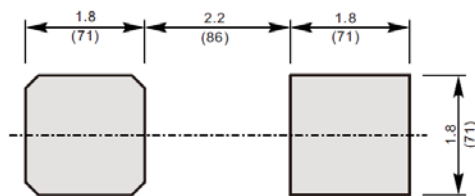


**PACKAGE INFORMATION**

Dimension in SMA Package (Unit: mm)



The recommended mounting pad size



Unit :  $\frac{\text{mm}}{\text{(mil)}}$

UNIT		A	c	D	E	e	g	H <sub>E</sub>
mm	max	2.2	0.31	4.7	2.9	1.7	1.5	5.4
	Min	1.9	0.12	4.2	2.3	1.2	0.8	4.7



## IMPORTANT NOTICE

AiT Components (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 Components' 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 severe 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 Components 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.