

SMAF Surface Mount High Efficient Rectifier

Features

- Low profile package
- Ideal for automated placement
- Glass passivated pallet chip junction
- Fast reverse recovery time
- Fast switching for high efficiency
- High forward surge capability

Applications

For use in fast switching rectification of power supplies,inverters, converters, and free wheeling diodes forconsumer, and telecommunication.

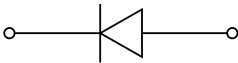
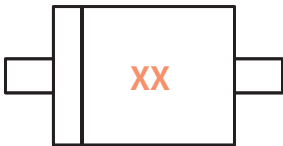
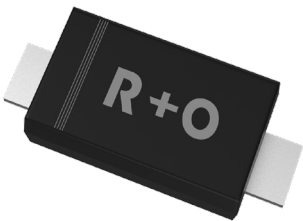
Mechanical Data

- Case: SMAF
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026
- Polarity: Cathode line denotes the cathode end

Function Diagram

Reverse Voltage
50-1000 V
Forward Current
1 Ampere

SMAF



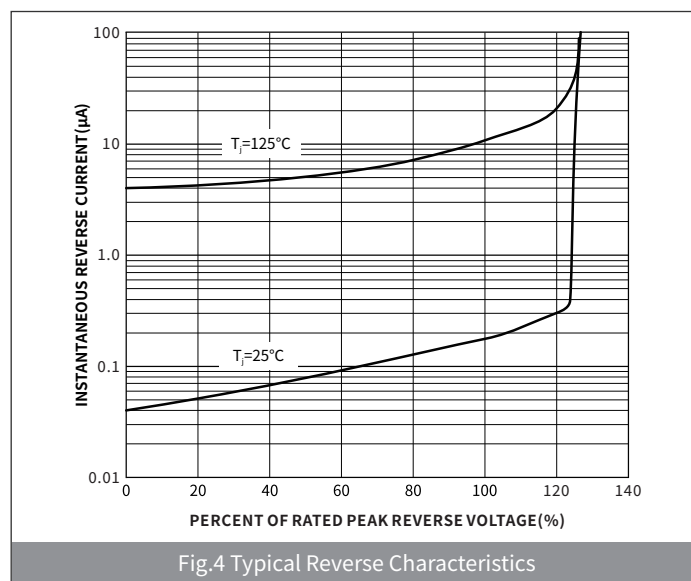
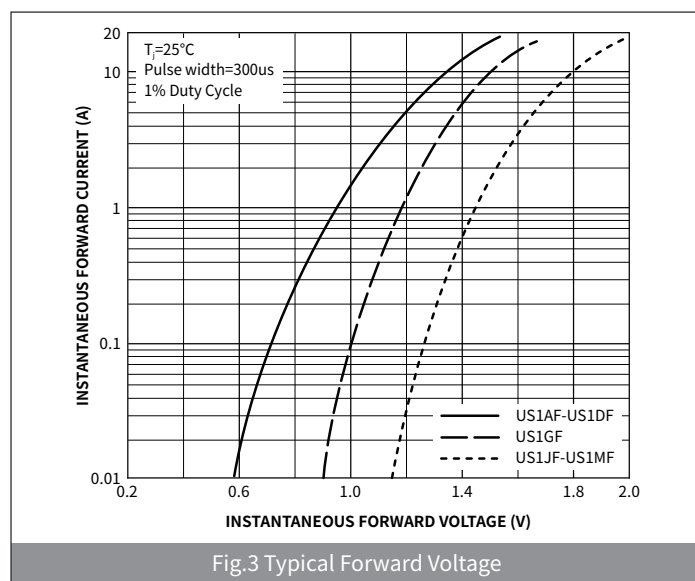
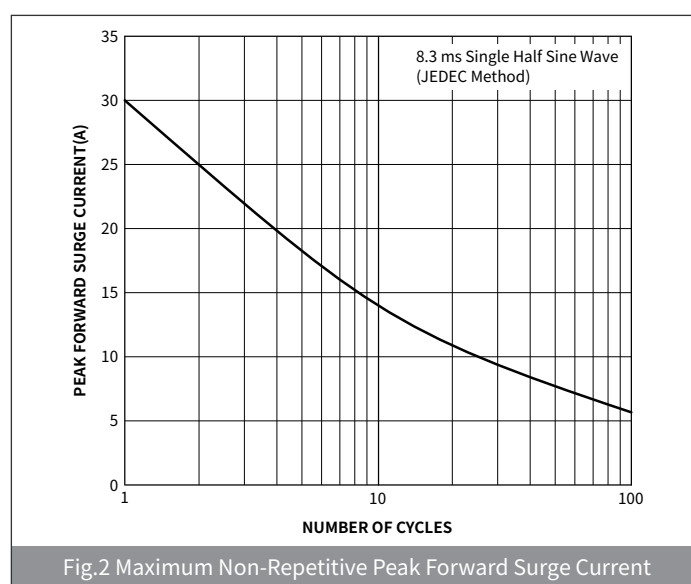
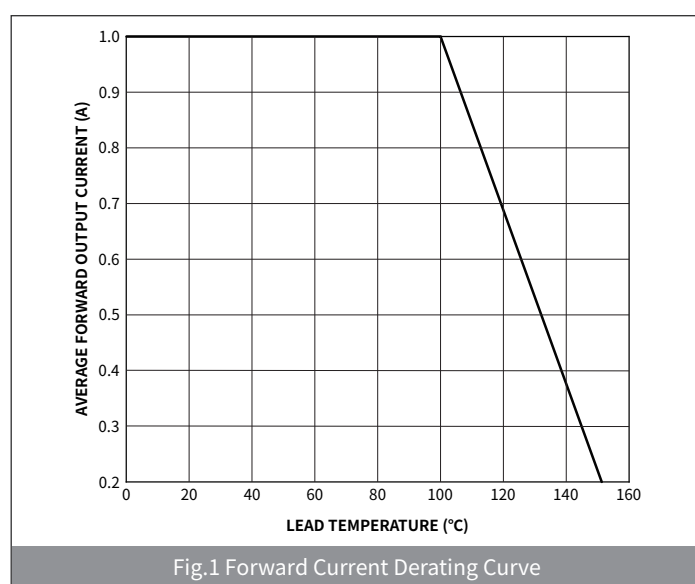
Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	US1AF	US1BF	US1DF	US1GF	US1JF	US1KF	US1MF
Device marking code			US1AF	US1BF	US1DF	US1GF	US1JF	US1KF	US1MF
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	V	50	100	200	400	600	800	1000
Maximum RMS Voltage	V _{RMS}	V	35	70	140	280	420	560	700
Maximum DC blocking Voltage	V _{DC}	V	50	100	200	400	600	800	1000
Maximum Average Forward Rectified Current @ 60Hz sinewave, Resistance load,TL (Fig.1)	I _{F(AV)}	A	1.0						
Non-repetitive Peak Forward Surge Current @ t=8.3ms Half-sine wave	I _{FSM}	A	30						
Storage temperature	T _{stg}	°C	-55 ~ +150						
Junction temperature	T _j	°C	-55 ~ +150						
Typical Thermal Resistance	R _{θJ-A}	°C /W	70						
	R _{θJ-L}	°C /W	27						

● Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	UNIT	US1AF	US1BF	US1DF	US1GF	US1JF	US1KF	US1MF
Maximum instantaneous forward voltage	I _F =1.0A	V _F	V	1.0			1.4	1.7		
Maximum reverse recovery time	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	T _{rr}	ns	50				75		
Maximum DC reverse currentat rated DC blocking voltage	V _R =V _{DC} , T _A =25°C	I _{R1}	μA	5.0						
	V _R =V _{DC} , T _A =125°C	I _{R2}		500						
Typical junction capacitance	4.0V DC, 1MHz	C _J	pF	20						

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



US1AF THRU US1MF

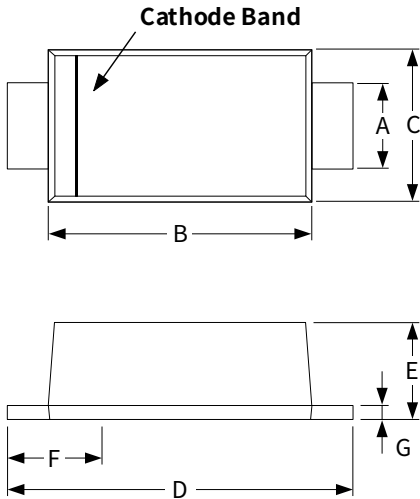
SURFACE MOUNT HIGH EFFICIENT RECTIFIER

● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SMAF	R1	0.034	3000	12000	120000	7"
SMAF	R2	0.034	7500	15000	120000	11"
SMAF	R3	0.034	7500	/	120000	13"

● Package Outline Dimensions (SMAF)

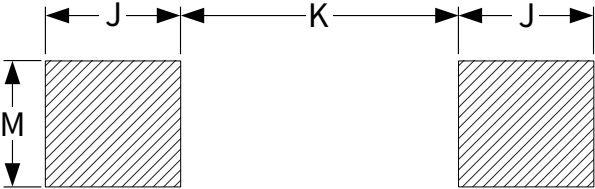
Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.30	1.60	0.051	0.063
B	3.30	3.70	0.129	0.145
C	2.40	2.70	0.094	0.105
D	4.40	4.90	0.172	0.191
E	0.90	1.20	0.035	0.047
F	0.80	1.20	0.031	0.047
G	0.12	0.20	0.005	0.008



The diagram illustrates the physical dimensions of the SMAF package. It includes a top view showing the cathode band, anode, and dimensions A, B, and C. A side view shows dimensions D, E, F, and G. Dimension A is the cathode band width, B is the anode width, C is the package height, D is the total length, E is the standoff height, F is the anode pad width, and G is the package thickness.

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
M	1.80	-	0.070	-
J	1.60	-	0.063	-
K	-	2.2	-	0.086



The diagram shows the suggested pad layout for the SMAF package. It includes dimensions J, K, and M. J is the distance from the package edge to the pad center, K is the pad width, and M is the pad height.