

## SMAF Surface Mount Fast Recovery Rectifier

### Features

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

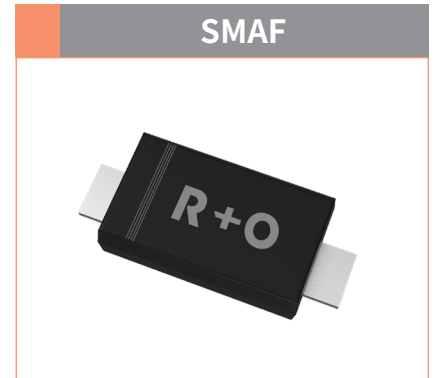
**Reverse Voltage**  
50-600 V  
**Forward Current**  
1 Ampere

### Applications

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive, 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



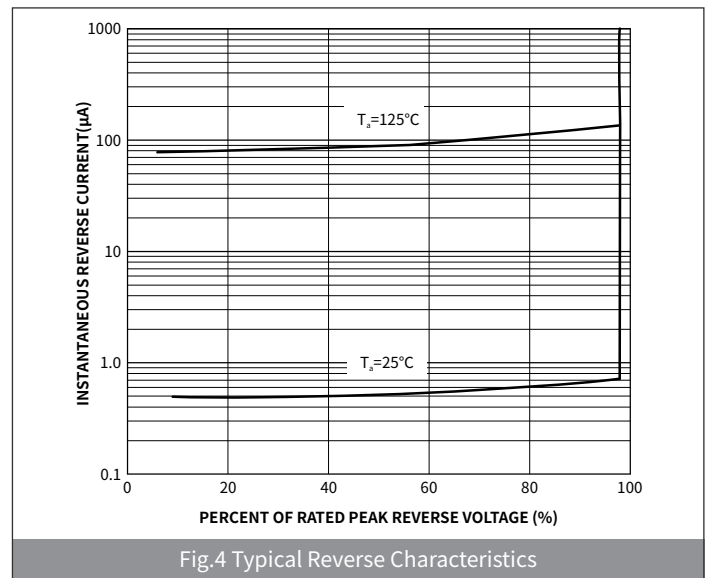
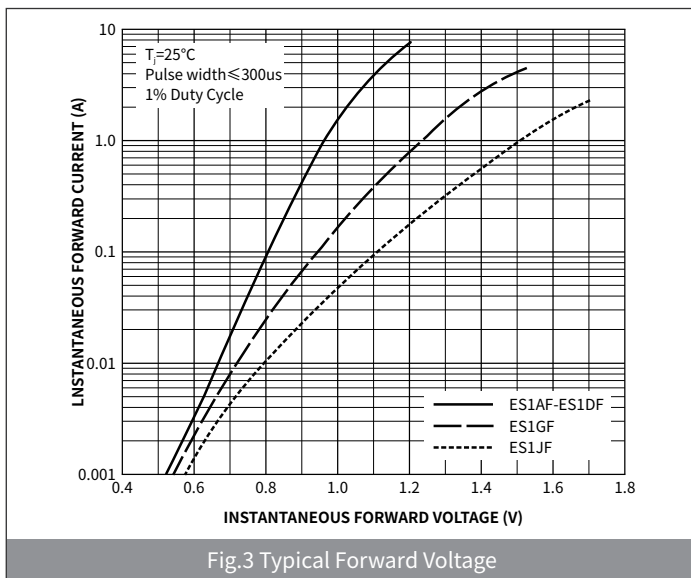
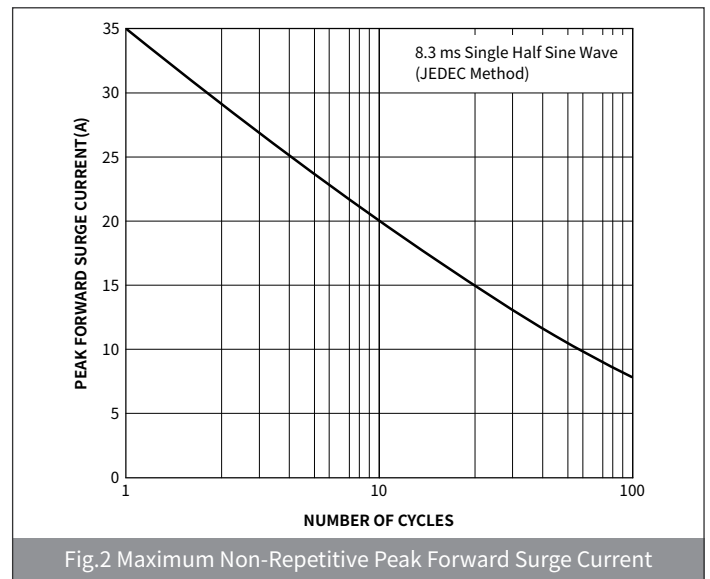
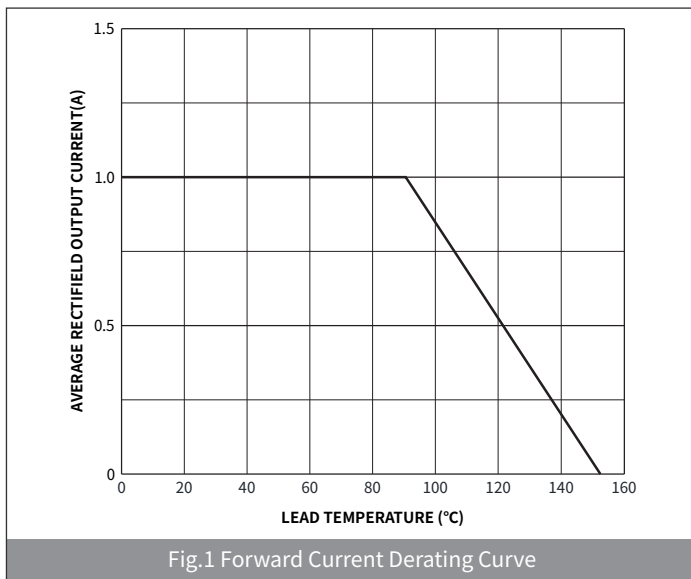
### Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	ES1AF	ES1BF	ES1DF	ES1GF	ES1JF
Device marking code			ES1AF	ES1BF	ES1DF	ES1GF	ES1JF
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	V	50	100	200	400	600
Maximum RMS Voltage	$V_{RMS}$	V	35	70	140	280	420
Maximum DC blocking Voltage	$V_{DC}$	V	50	100	200	400	600
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	35				
Storage temperature	$T_{stg}$	°C	-55 ~+150				
Junction temperature	$T_j$	°C	-55 ~+150				
Typical Thermal Resistance	$R_{\theta JA}$	°C /W	75				

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

PARAMETER	TEST CONDITIONS	SYMBOL	UNIT	ES1AF	ES1BF	ES1DF	ES1GF	ES1JF
Maximum instantaneous forward voltage	$I_F=1.0A$	$V_F$	V	0.95			1.3	1.7
Maximum reverse recovery time	$I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$	$T_{rr}$	ns	35				
Maximum DC reverse current at rated DC blocking voltage	$V_R=V_{DC}, T_A=25^\circ C$	$I_{R1}$	$\mu A$	5.0				
	$V_R=V_{DC}, T_A=125^\circ C$	$I_{R2}$		150				
Typical junction capacitance	4.0V DC, 1MHz	$C_J$	pF	10				

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



# ES1AF THRU ES1JF

SURFACE MOUNT FAST RECOVERY RECTIFIER

## ● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SMAF	R1	0.034	3000	18000	180000	7"

## ● 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

## ● 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