

SMAF Plastic-Encapsulate Diodes

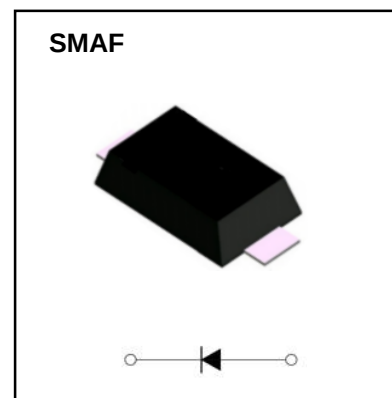
Fast Recovery Rectifier

Features

- I_O 1A
- VRRM 50V-1000V
- Low forward voltage drop
- High surge current capability
- Glass passivated chip junction

Mechical Data

- Case: SMAF molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated, solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end



Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Test Conditions	RS -F						
				1A	1B	1D	1G	1J	1K	1M
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
Average Forward Current	$I_{F(AV)}$	A	60HZ Half-sine wave, Resistance load, $T_L = 100^\circ\text{C}$	1.0						
Surge(Non-repetitive)Forward Current	I_{FSM}	A	60Hz Half-sine wave , 1 cycle , $T_a = 25^\circ\text{C}$	30						
Junction Temperature	T_J	$^\circ\text{C}$		-55~+150						
Storage Temperature	T_{STG}	$^\circ\text{C}$		-55 ~ +150						

Electrical Characteristics ($T_a = 25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Test Condition		RS-F						
					1A	1B	1D	1G	1J	1K	1M
Forward voltage	V _F	V	I _F =1.0A		1.3						
Maximum reverse recovery time	T _{rr}	ns	I _F =0.5A,I _R =1.0A,I _{rr} =0.25A		150			250		500	
Peak Reverse Current	I _{RRM1}	μA	V _{RM} =V _{RRM}	T _a =25℃	5						
	T _a =125℃			50							
Thermal Resistance(Typical)	R _{θJ-A}	℃/W	Between junction and ambient		78						
	R _{θJ-L}		Between junction and terminal		20						
	R _{θJ-C}		Between junction and case		18						
Juction Capacitance (Typical)	C _J	pF	Measured at 1.0MHz and applied reverse voltage of 4.0 volts.		6						

Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

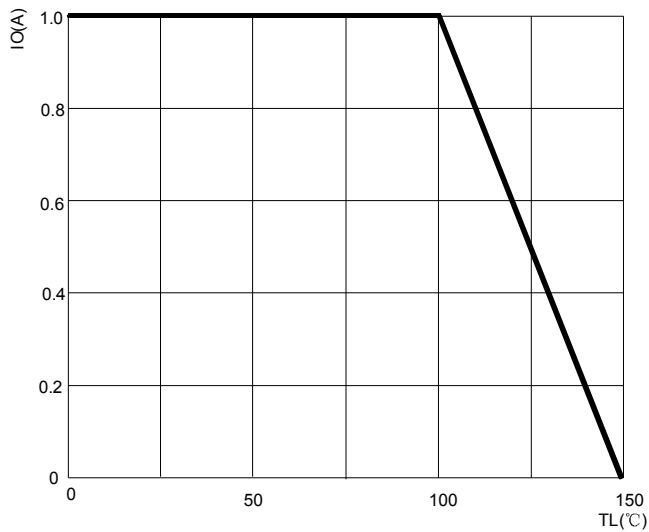


FIG.2: MAXIMUM NON-REPETITIVE FORWARD URGE CURRENT

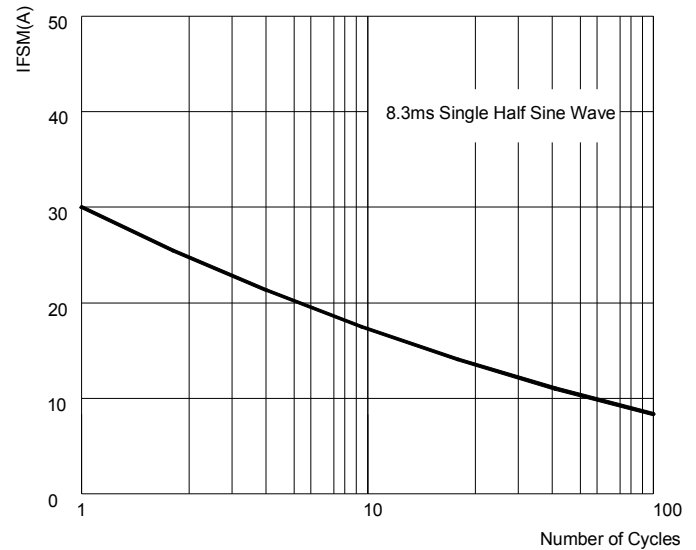


FIG.3: TYPICAL FORWARD CHARACTERISTICS

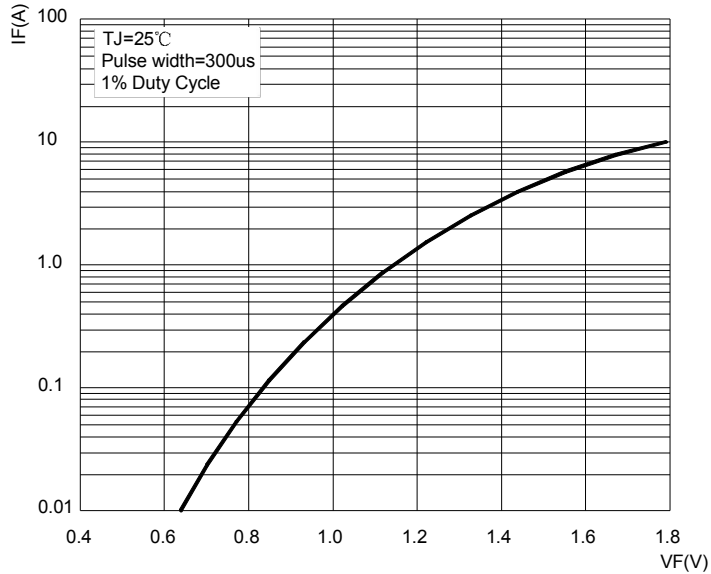


FIG.4: TYPICAL REVERSE CHARACTERISTICS

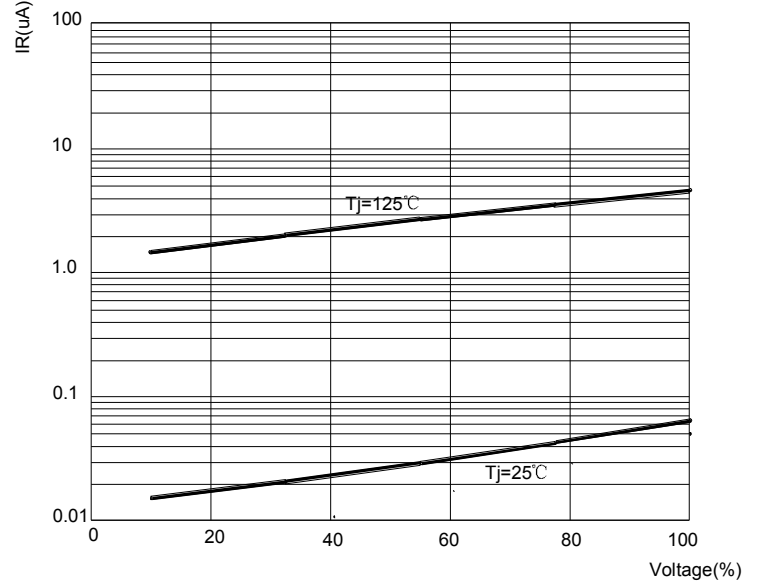
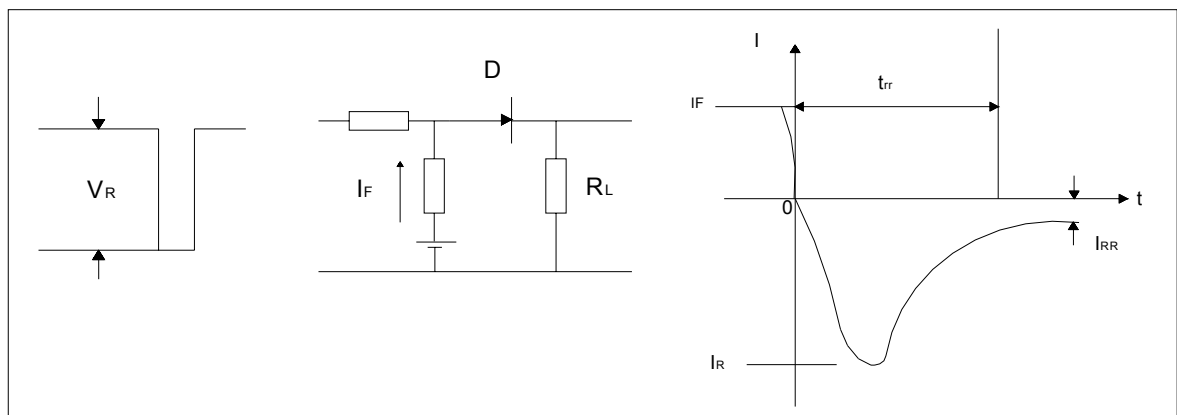
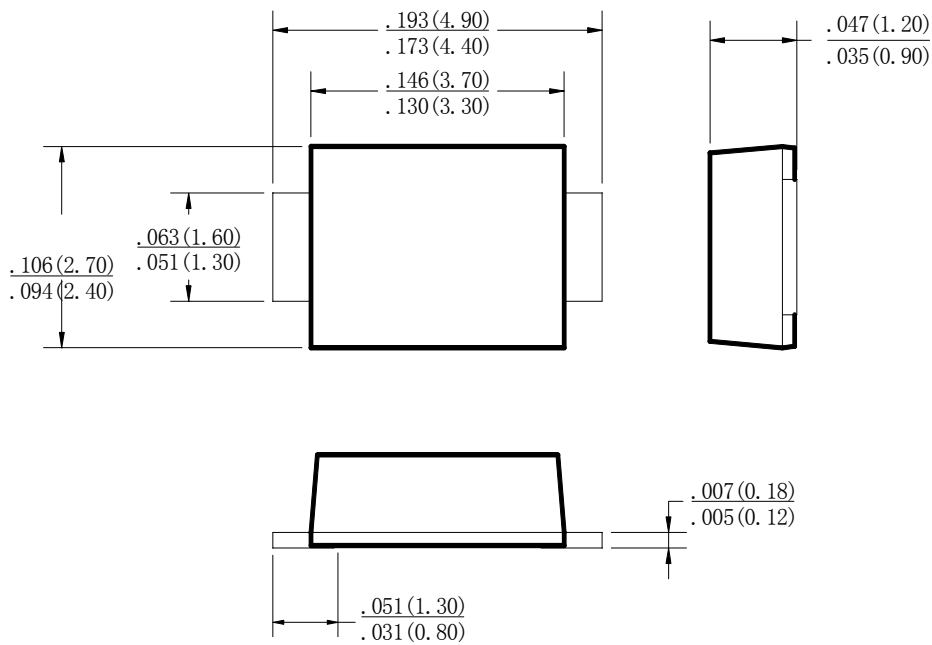


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

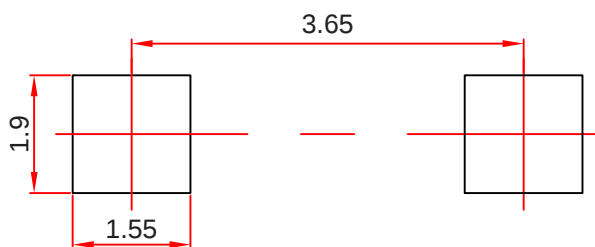


SMAF Package Outline Dimensions



Dimensions in inches and (millimeters)

SMAF Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

Ordering Information

Part Number	Package	Shipping Quantity
RS1AF-RS1MF	SMAF	3000/tape&Reel

Marking Diagram



X: From A To M

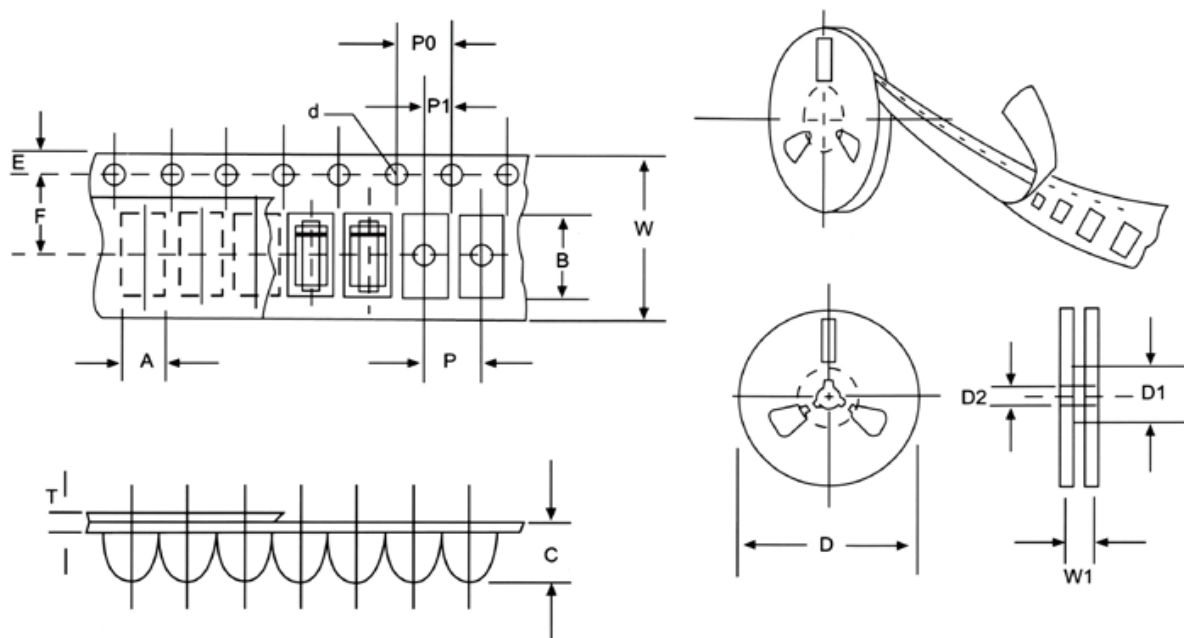


FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

ITEM	SYMBOL	SMAF mm(inch)
Carrier width	A	2.83+0.1(0.112+0.004)
Carrier length	B	4.90+0.1(0.193+0.004)
Carrier depth	C	1.45+0.1(0.057+0.004)
Sprocket hole	d	1.55+0.05(0.061+0.002)
Reel outside diameter	D	178+2.0(7.0+0.079)
Reel inner diameter	D1	54±1.0(2.13±0.039)
Feed hole diameter	D2	13+0.5(0.512+0.020)
Sprocket hole position	E	1.75+0.1(0.069+0.004)
Punch hole position	F	5.5+0.05(0.217+0.002)
Punch hole pitch	P	4.0+0.1(0.157+0.004)
Sprocket hole pitch	P0	4.0+0.1(0.157+0.004)
Embossment center	P1	2.0+0.1(0.079+0.004)
Totall tape thickness	T	0.23-0.29(0.009-0.011)
Tape width	W	12.0+0.1(0.472+0.004)
Reel width	W1	16.8+2.0(0.661+0.079)

NOTE: Devices are packde in accordance with EIA standard RS-481-A and specification given above.