HIGH DIODE

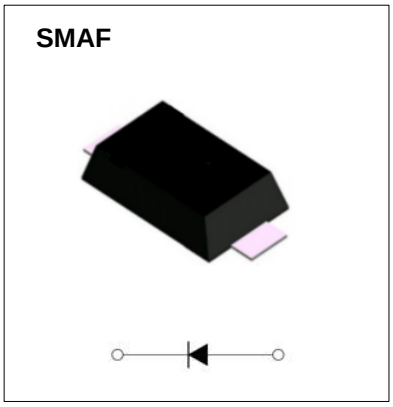
US1AF THRU US1MF

RoHS COMPLIANT

HALOGEN FREE

SMAF Plastic-Encapsulate Diodes

High Efficient 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	Conditions	US							
				1A	1B	1D	1F	1G	1J	1K	1M
Repetitive Peak Reverse Voltage	V_{RRM}	V		50	100	200	300	400	600	800	1000
Maximum RMS Voltage	V_{RMS}	V		35	70	140	210	280	420	560	700
Maximum DC blocking Voltage	V_{DC}	V		50	100	200	300	400	600	800	1000
Average Forward Current	$I_{F(AV)}$	A	60Hz Half-sine wave, Resistance load, TL=105℃	1.0							
Surge(Non-repetitive)Forward Current	I_{FSM}	A	60Hz Half-sine wave,1 cycle, Ta=25℃	30							
Junction Temperature	T_J	℃		-55 ~ +150							
Storage Temperature	T_{STG}	℃		-55 ~ +150							

Electrical Characteristics (T_a=25℃ Unless otherwise specified)

Item	Symbol	Unit	Test Condition		US							
					1A	1B	1D	1F	1G	1J	1K	1M
Peak Forward Voltage	V_{FM}	V	I_{FM}=1.0A		1.0			1.3		1.7		
Peak Reverse Current	I_{RRM1}	μA	$V_{RM}=V_{RRM}$	T_a=25℃	5							
	I_{RRM2}			T_a=125℃	50							
Reverse Recovery time	t_{rr}	ns	I_F=0.5A I_R=1A I_{RR}=0.25A		50					75		
Thermal Resistance(Typical)	$R_{\theta J-A}$	℃/W	Between junction and ambient		78							
	$R_{\theta J-L}$		Between junction and terminal		20							
	$R_{\theta J-C}$		Between junction and case		18							
Juction Capacitance (Typical)	CJ	pF	Measured at 1.0MHz and applied reverse voltage of 4.0 volts.		15			10		7		

Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

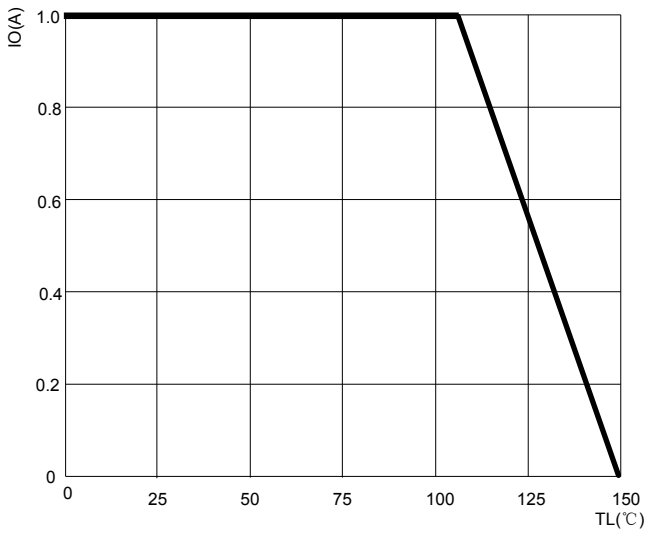


FIG.2: MAXIMUM NON-REPETITIVE FORWARD URGE CURRENT

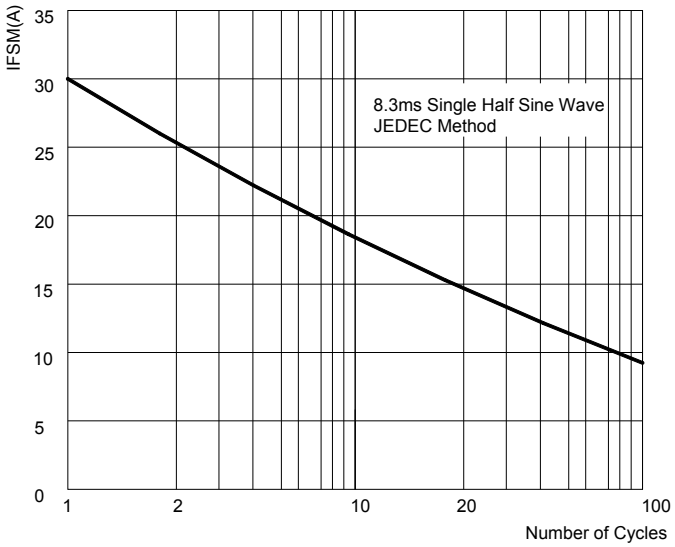


FIG.3: TYPICAL FORWARD CHARACTERISTICS

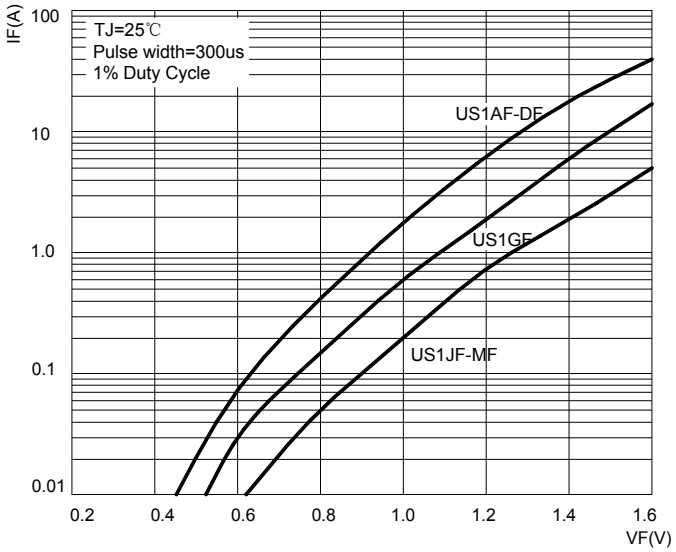


FIG.4：TYPICAL REVERSE CHARACTERISTICS

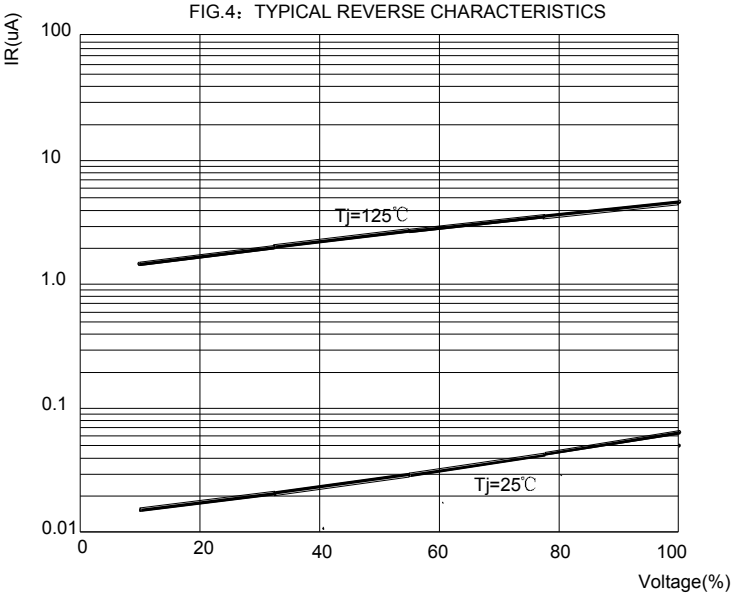
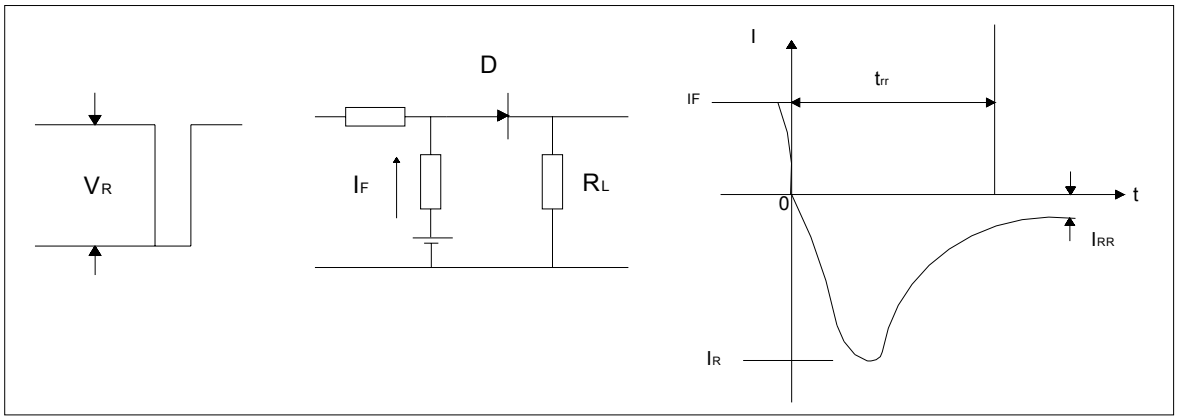
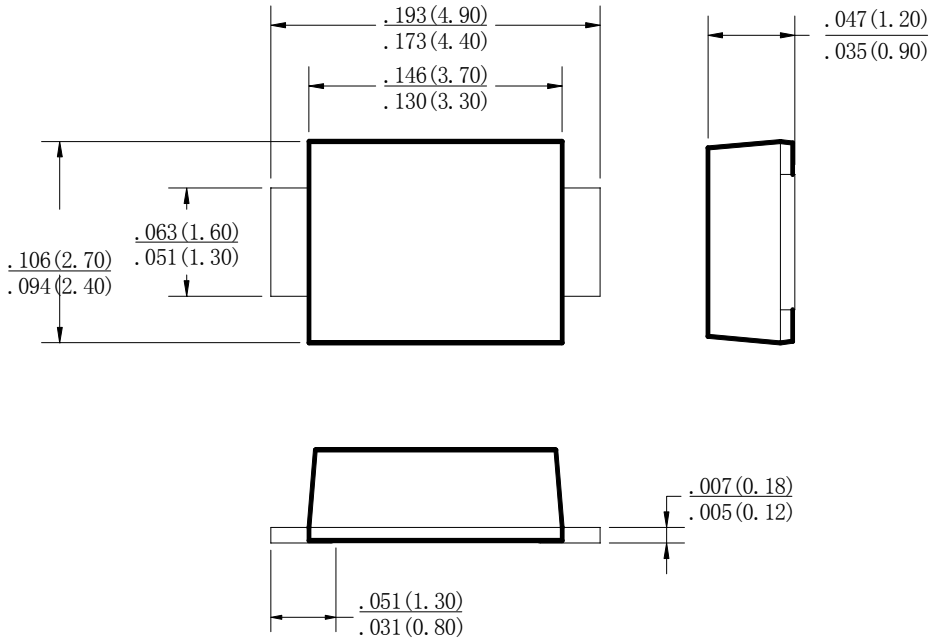


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

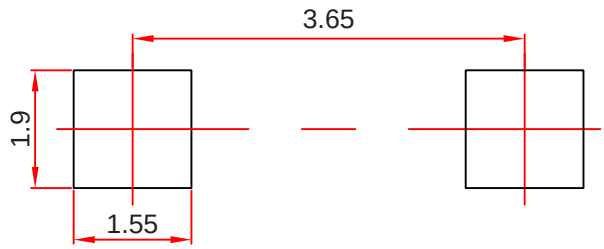


SMAF Package Outline Dimensions



Dimensions in inches and (millimeters)

SMAF Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

Ordering Information

Part Number	Package	Shipping Quantity
US1AF-US1MF	SMAF	3000/tape&Reel

Marking Diagram

X:From A To M

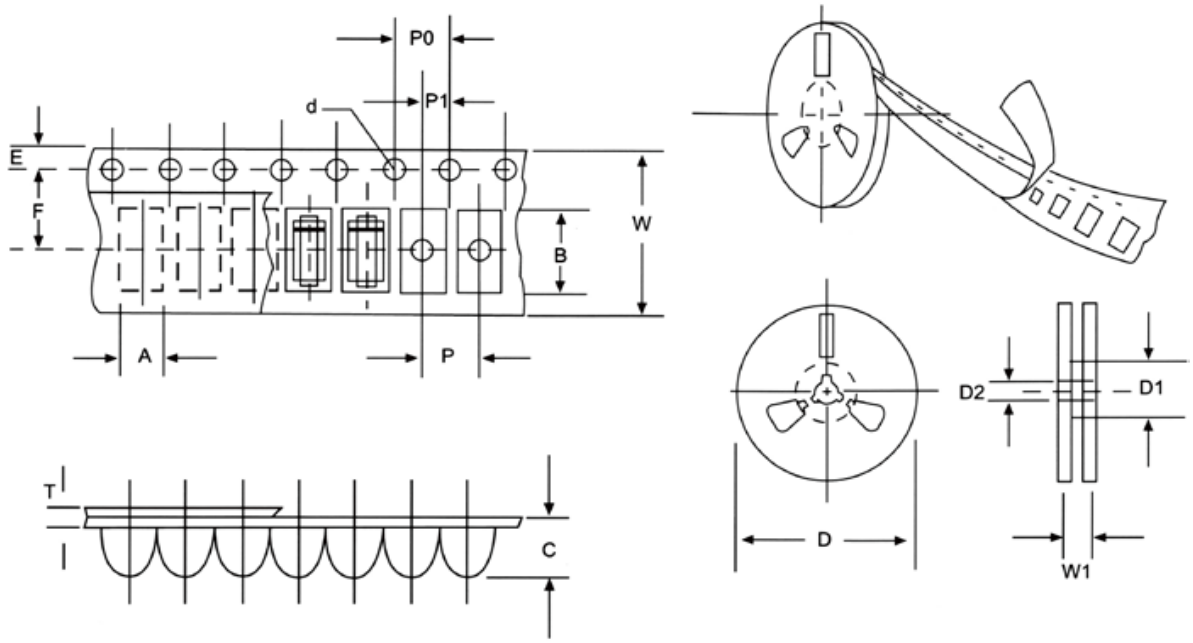


FIG:CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

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)
Stroket 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.