SMAF Plastic-Encapsulate Diodes

Super Fast Recovery Rectifier Diode

Features

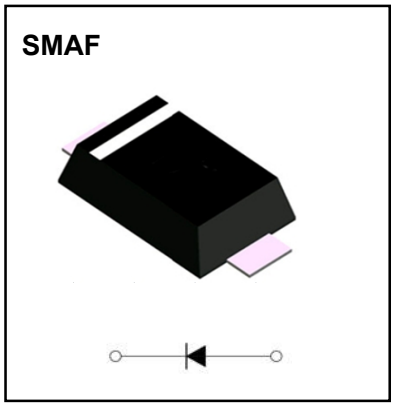
- I_O 3A
- VRRM 50V-600V
- High surge current capability
- Glass passivated chip
- Polarity: Color band denotes cathode

Applications

- Rectifier

Marking

- ES3AF-ES3JF ： ES3A-ES3J



Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Test Conditions	ES3							
				AF	BF	CF	DF	EF	GF	HF	JF
Repetitive Peak Reverse Voltage	V_{RRM}	V		50	100	150	200	300	400	500	600
Maximum RMS Voltage	V_{RMS}	V		35	70	105	140	210	280	350	420
Average Forward Current	$I_{F(AV)}$	A	60HZ Half-sine wave, Resistance load, T_L=120℃	3.0							
Surge(Non-repetitive)Forward Current	I_{FSM}	A	60Hz Half-sine wave ,1 cycle , Ta =25℃	100							
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		ES3							
					AF	BF	CF	DF	FF	GF	HF	JF
Peak Forward Voltage	V_F	V	I_F=3.0A		0.95				1.25		1.7	
Maximum reverse recovery time	t_{rr}	ns	I_F=0.5A,I_R=1.0A,I_{rr}=0.25A		35							
Peak Reverse Current	I_{RRM1}	μA	V_{RM}=V_{RRM}	T_a =25℃	10							
	I_{RRM2}			T_a =100℃	100							
Thermal Resistance(Typical)	$R_{\theta J-A}$	℃/W	Between junction and ambient		47[1)]							
	$R_{\theta J-L}$		Between junction and terminal		12[1)]							

Notes:

Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

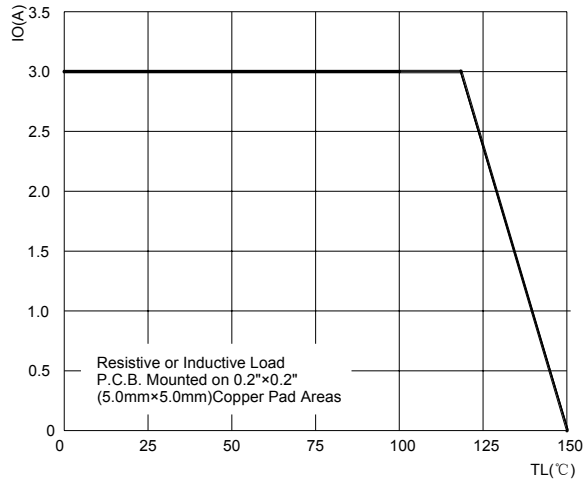


FIG.2: MAXIMUM NON-REPETITIVE FORWARD URGE CURRENT

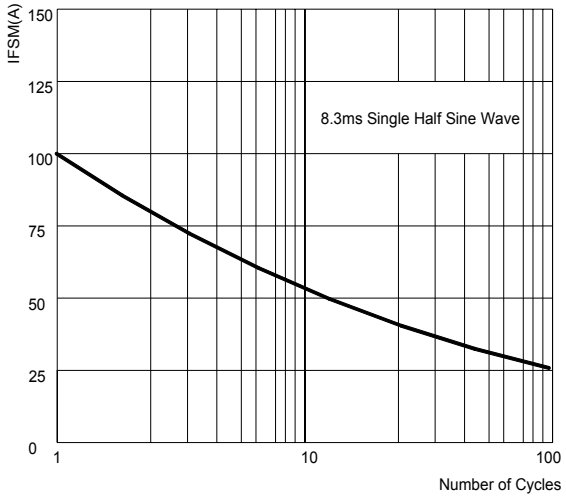


FIG.3: TYPICAL FORWARD CHARACTERISTICS

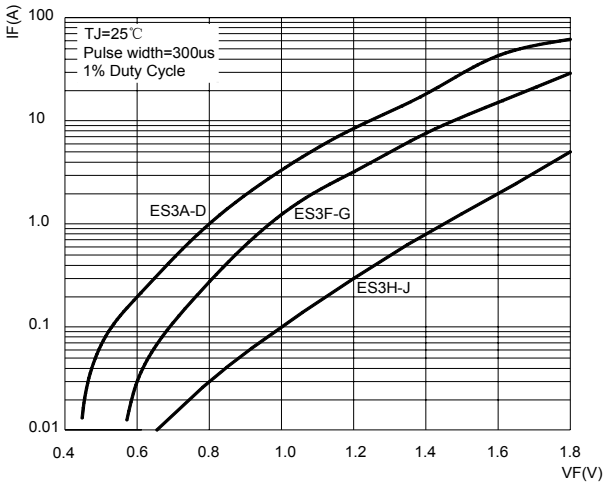


FIG.4：TYPICAL REVERSE CHARACTERISTICS

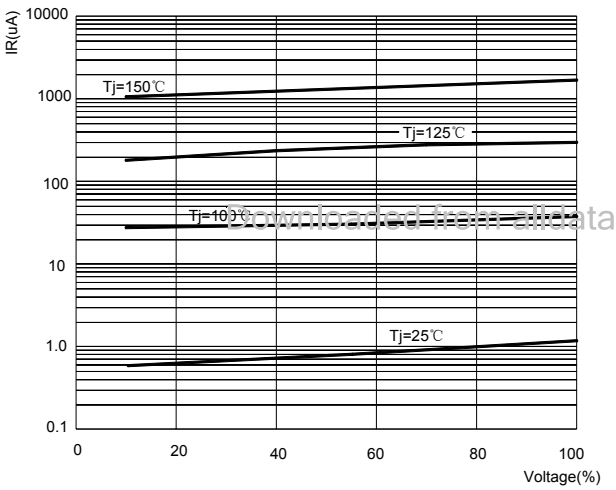
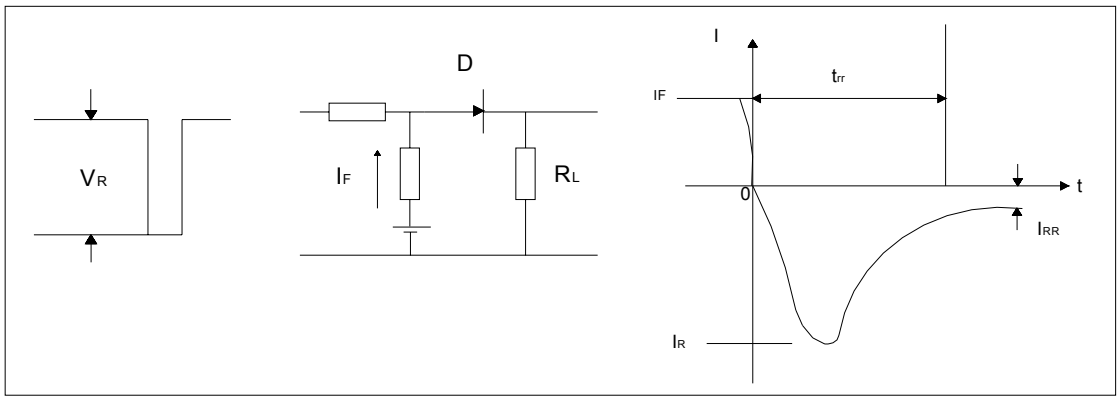
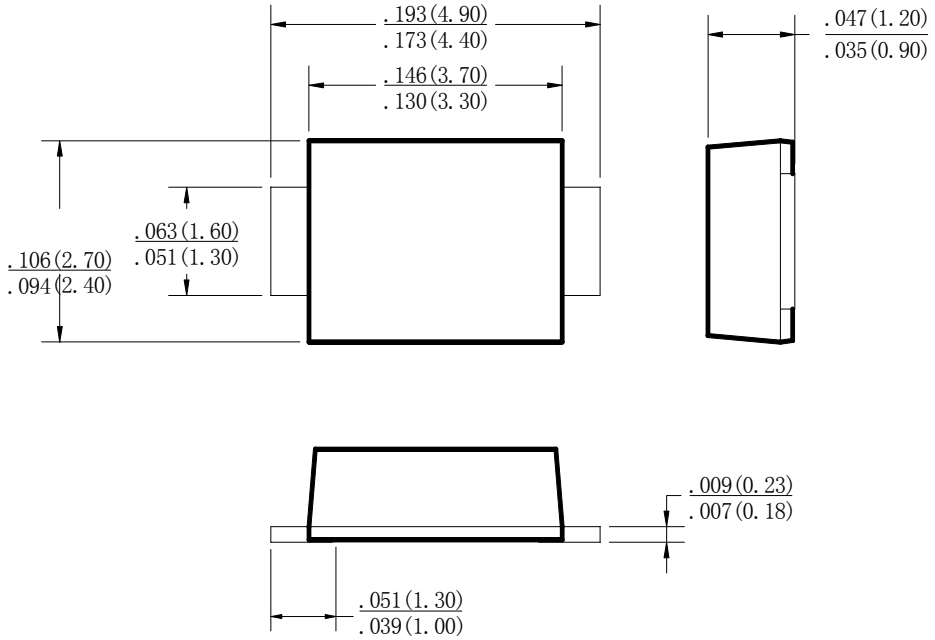


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

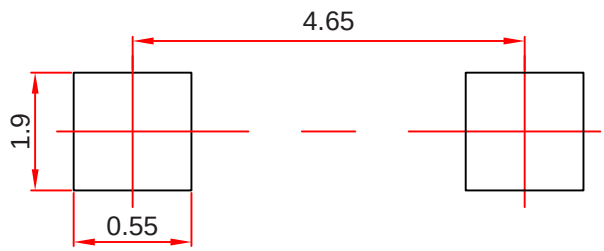


SMAF Package Outline Dimensions



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.

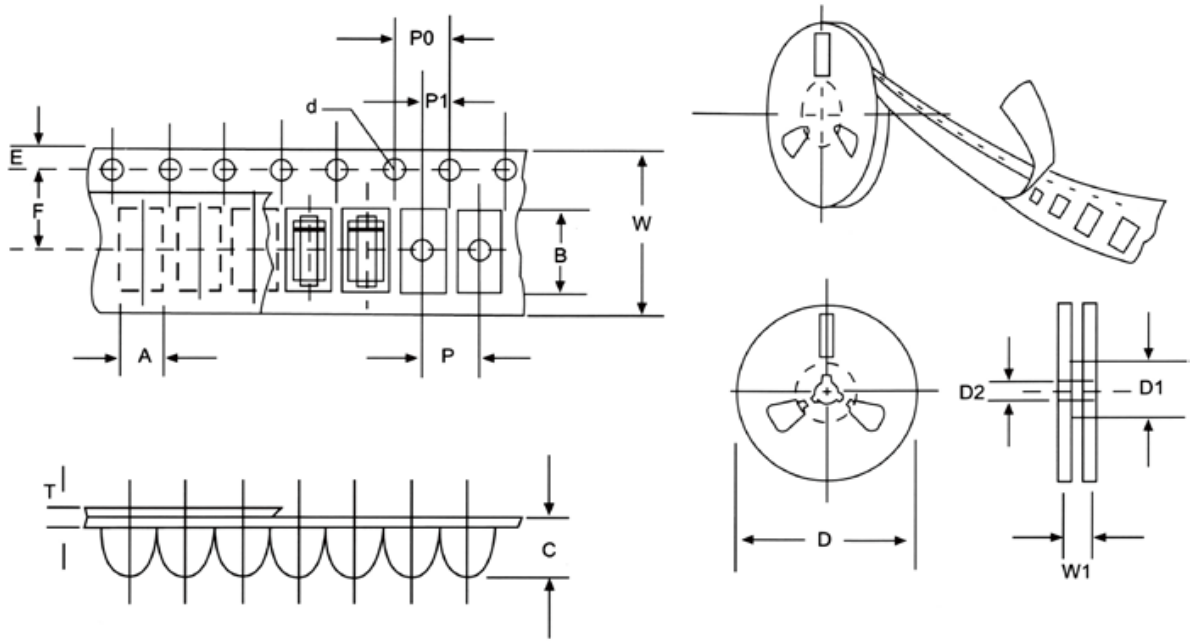


FIG:CONFIGURATION OF AXIAL TAPING

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	280/178+2.0(11/7.0+0.079)
Reel inner diameter	D1	8.0+0.2(0.315+0.008)
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.