

## SMAG Plastic-Encapsulate Diodes

Fast Recovery Rectifier

### Features

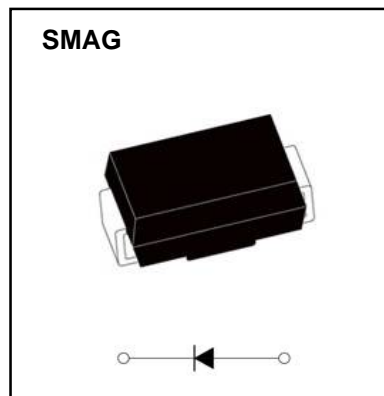
- $I_o$  1A
- $V_{RRM}$  50V-1000V
- High surge current capability
- Glass passivated chip
- Polarity: Color band denotes cathode

### Applications

- Rectifier

### Marking

- RS1X
- X : From A To M



### Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Test Conditions	RS						
				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, $T_L = 75^\circ C$	1.0						
Surge(Non-repetitive)Forward Current	$I_{FSM}$	A	60Hz Half-sine wave , 1 cycle , $T_a = 25^\circ C$	30						
Junction Temperature	$T_J$	$^\circ C$		-55~+150						
Storage Temperature	$T_{STG}$	$^\circ C$		-55 ~ +150						

### Electrical Characteristics (T=25°C Unless otherwise specified)

Item	Symbol	Unit	Test Condition	RS						
				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	$I_{RRM1}$	$\mu A$	$V_{RM} = V_{RRM}$	$T_a = 25^\circ C$						
	I			$T_a = 100^\circ C$						
Thermal Resistance(Typical)	$R_{\theta J-A}$	$^\circ C/W$	Between junction and ambient				105 <sup>1)</sup>			
	$R_{\theta J-L}$		Between junction and terminal				32 <sup>1)</sup>			
Typical Junction capacitance	$C_J$	pF	Measured at 1.0MHz and applied reverse voltage of 4.0 volts.	7.5						

### 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

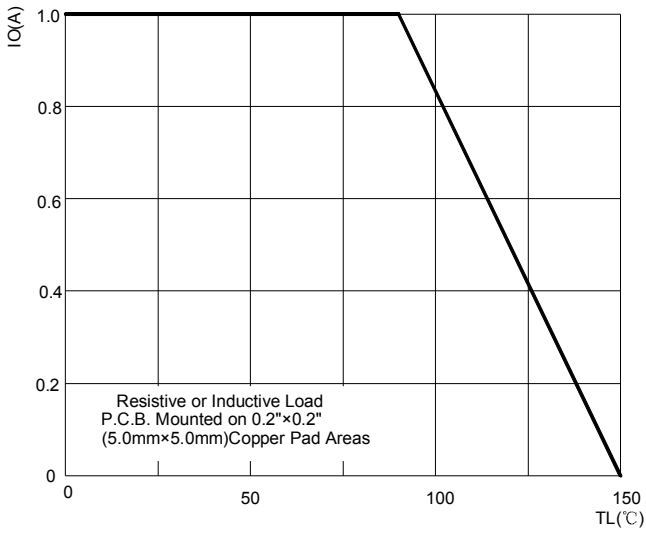


FIG.2: MAXIMUM NON-REPETITIVE FORWARD URGE CURRENT

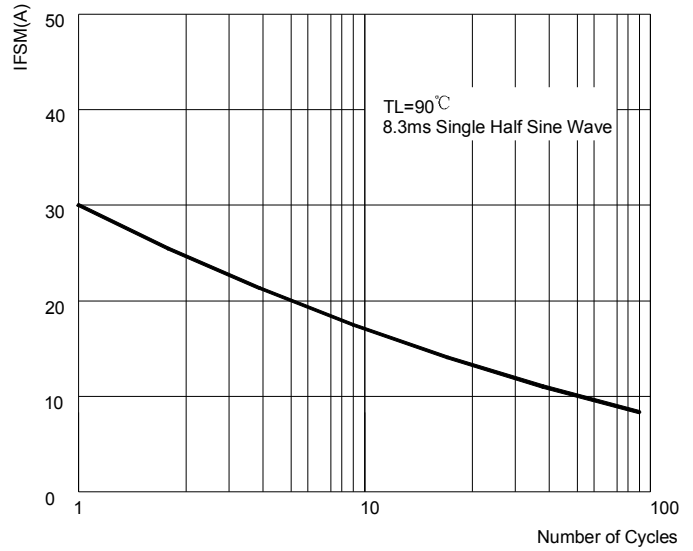


FIG.3: TYPICAL FORWARD CHARACTERISTICS

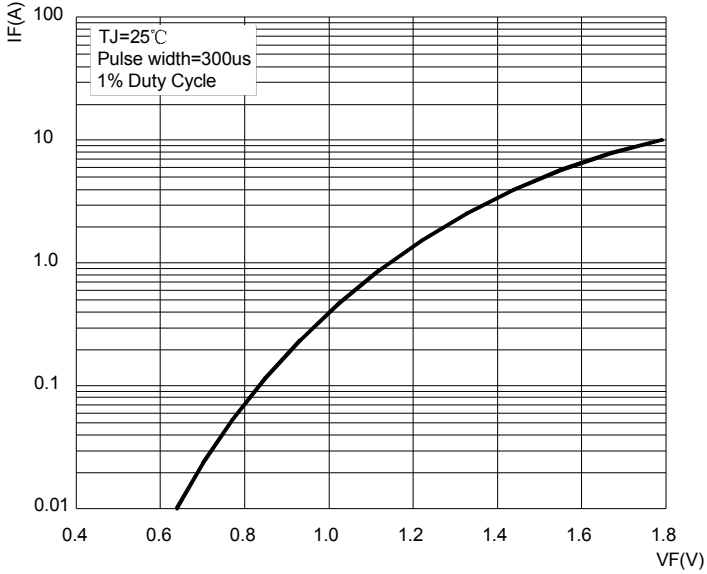


FIG.4: TYPICAL REVERSE CHARACTERISTICS

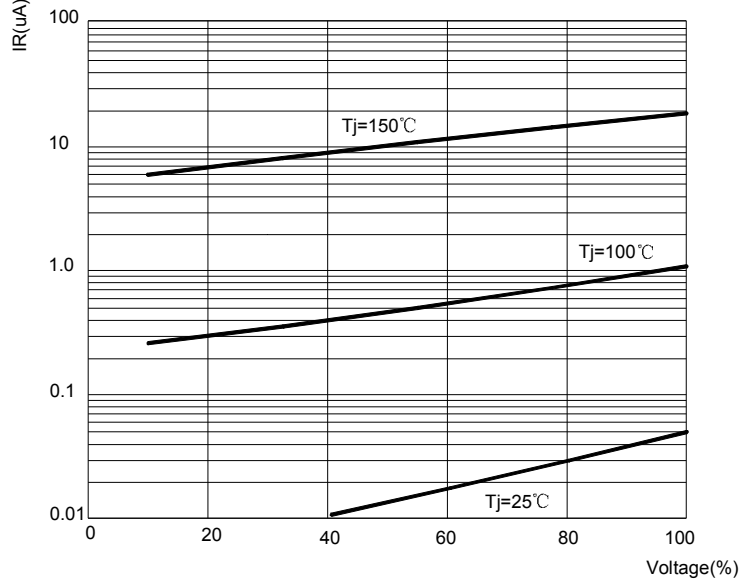


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

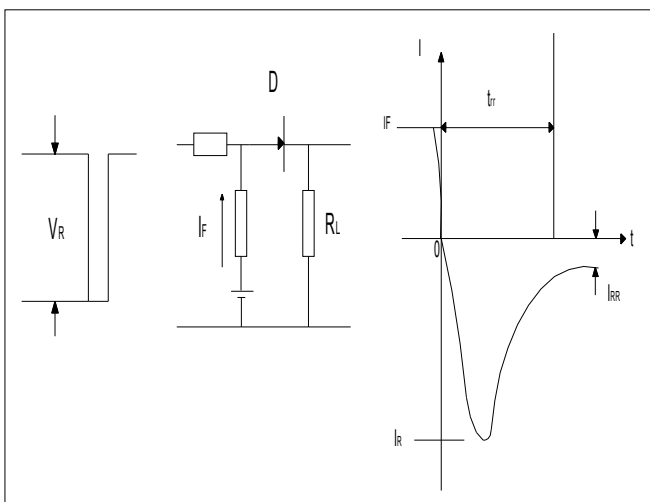
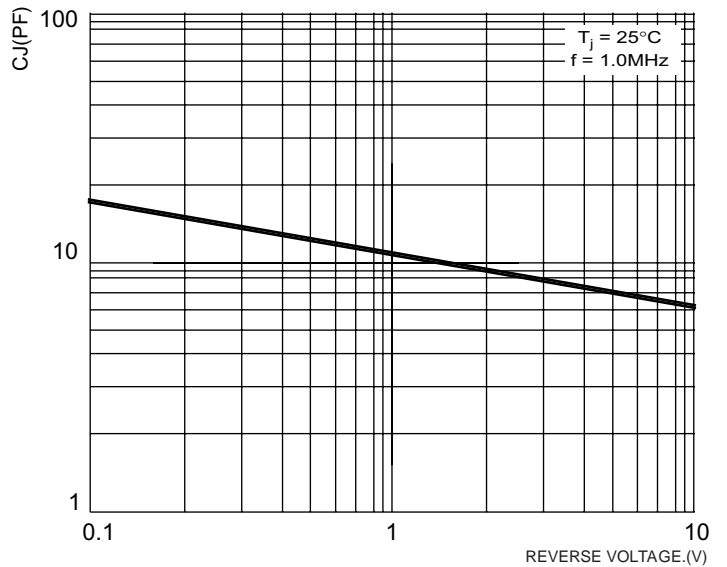
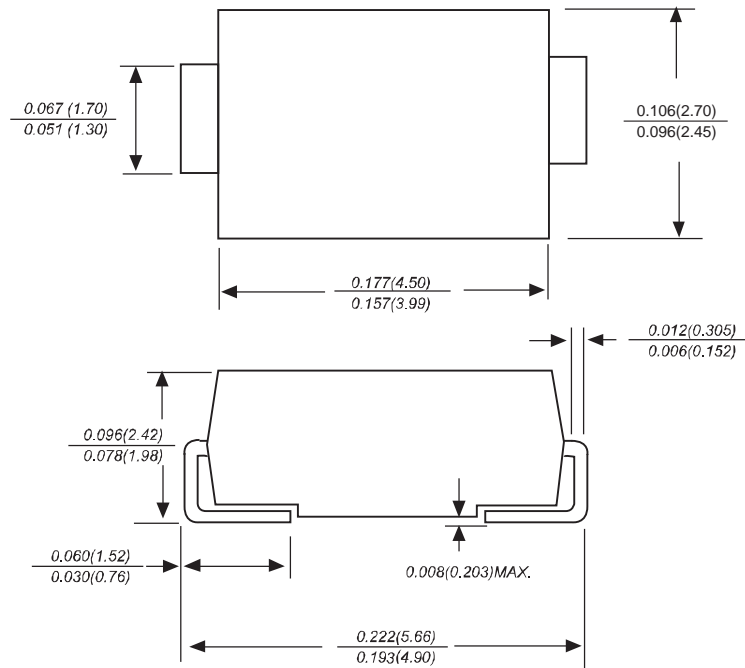


FIG6: Typical Junction Capacitance

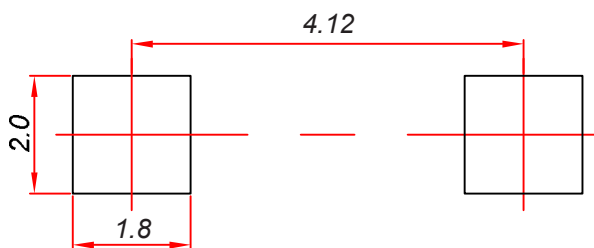


## SMAG Package Outline Dimensions



Dimensions in inches and (millimeters)

## SMAG Suggested Pad Layout



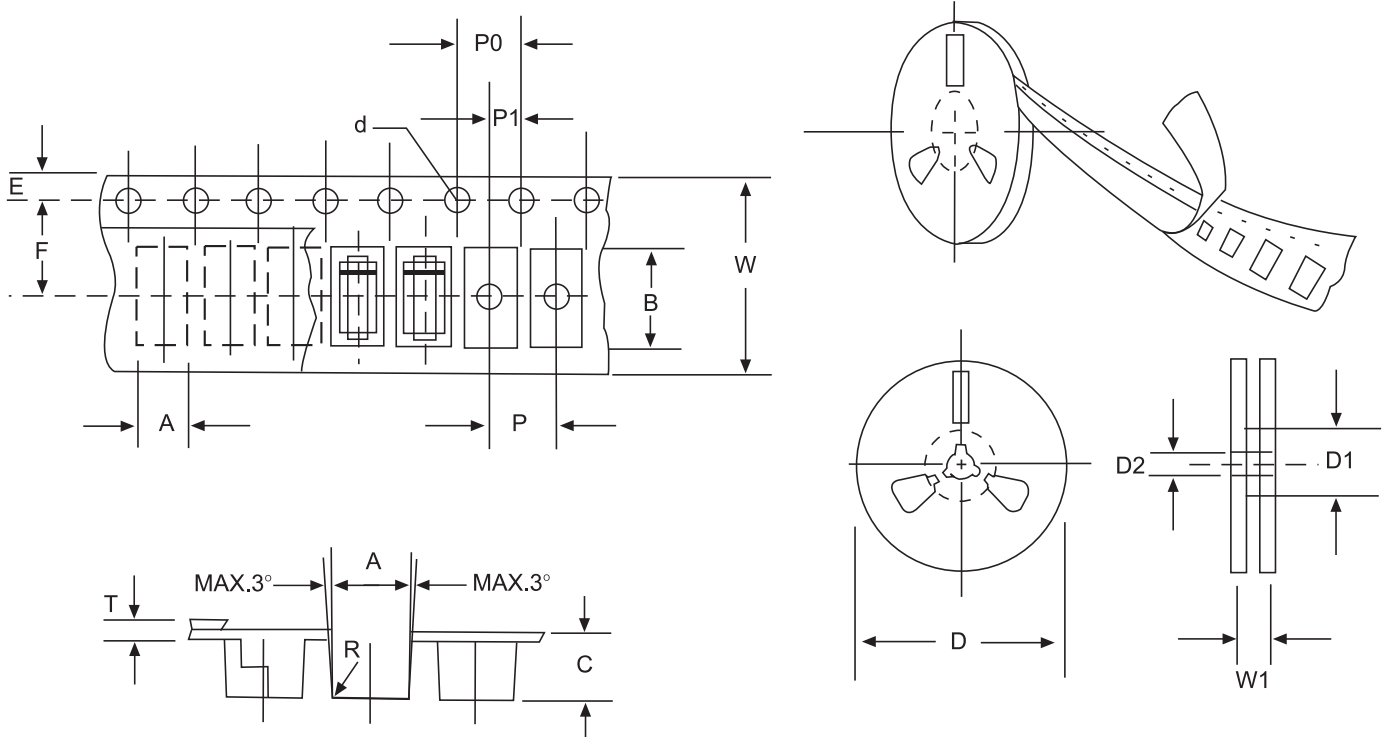
### Note:

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

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## Reel Taping Specifications For Surface Mount Devices- SMAG



**Fig:CONFIGURATION OF FLAT MELF TAPING**

ITEM	SYMBOL	SMAG mm(inch)
Carrier width	A	2.79±0.1(0.110±0.004)
Carrier length	B	5.33±0.1(0.210±0.004)
Carrier depth	C	2.36±0.1(0.093±0.004)
Sprocket hole	d	1.55±0.05(0.061±0.002)
Reel outside diameter	D	279±2.0 (11± 0.079)
Reel inner diameter	D1	75±1.0 ( 2.95 ±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	0.28±0.02(0.011 ±0.0008 )
Tape width	W	12.0±0.2(0.472±0.008)
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.

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