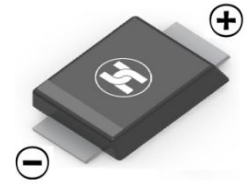


## ULTRA FAST RECOVERY RECTIFIER DIODE

### FEATURES

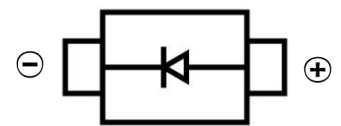
- Surface Mount device
- Low Reverse voltage leakage current
- Glass passivated junction
- High forward surge current capability
- Low forward voltage drop
- Ultra Fast Recovery Time for High Efficiency



SMBF

### MECHANICAL DATA

- Case: SMBF
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.057 grams (approximate)



### MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	1000	V
DC Blocking Reverse Voltage	$V_R$	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	700	V
Maximum Average Forward Rectified Current	$I_F$	1	A
Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	$I_{FSM}$	35	A
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	85	$^\circ\text{C/W}$
Reverse Recovery Time(@ $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{RR}=0.25\text{A}$ )	$t_{rr}$	75	nS
Junction Temperature	$T_J$	-55 ~+150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~+150	$^\circ\text{C}$

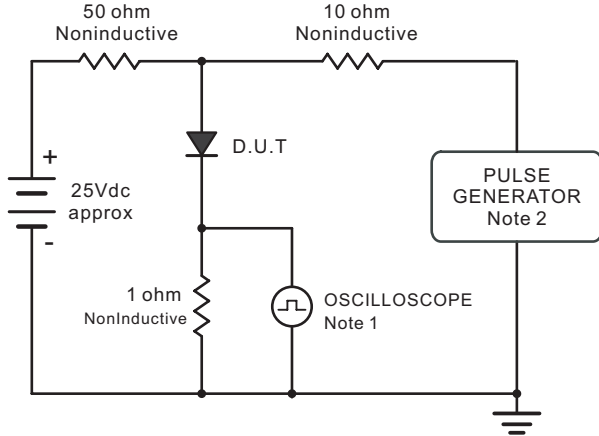
### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Forward voltage	$V_F$			1.5	V	$I_F=1\text{A}$
Reverse current @ $T_A=25^\circ\text{C}$	$I_R$			5	$\mu\text{A}$	$V_R=1000\text{V}$
Reverse current @ $T_A=125^\circ\text{C}$	$I_R$			50	$\mu\text{A}$	$V_R=1000\text{V}$
Diode capacitance	$C_D$		45		pF	$V_R=4\text{V}_{DC}, f=1\text{MHz}$

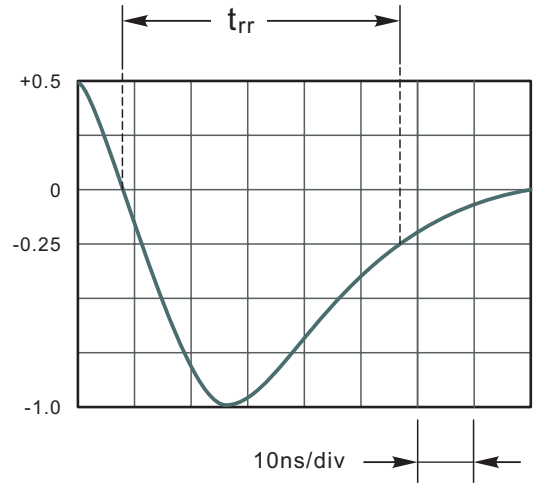
**ULTRA FAST RECOVERY RECTIFIER DIODE**

**Typical Characteristics**

**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**

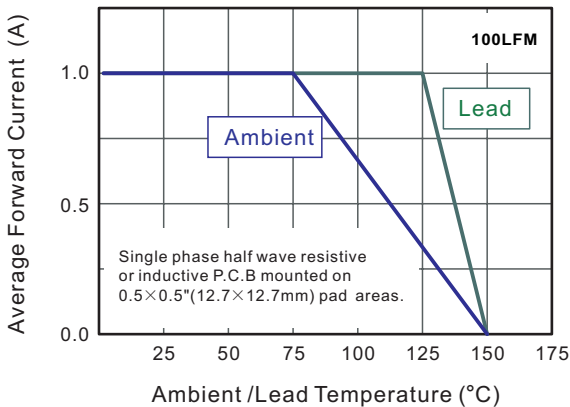


Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.

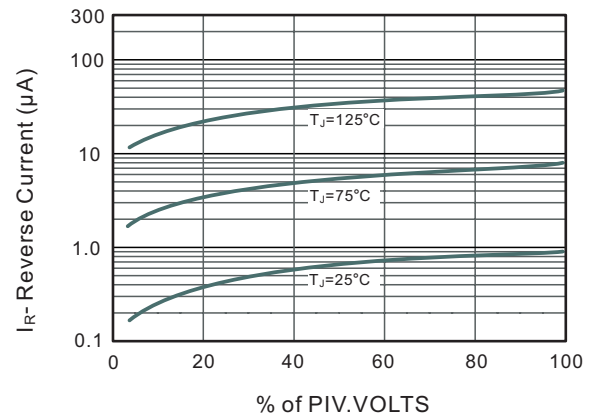


Set time Base for 10ns/div

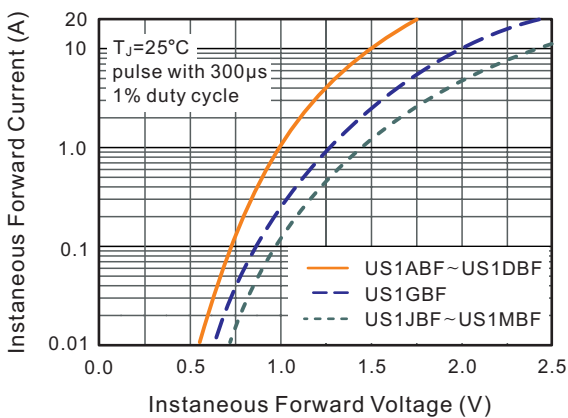
**Fig.2 Maximum Average Forward Current Rating**



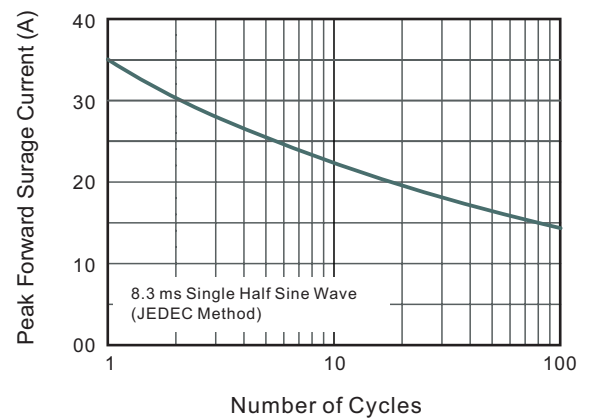
**Fig.3 Typical Reverse Characteristics**



**Fig.3 Typical Instaneous Forward Characteristics**

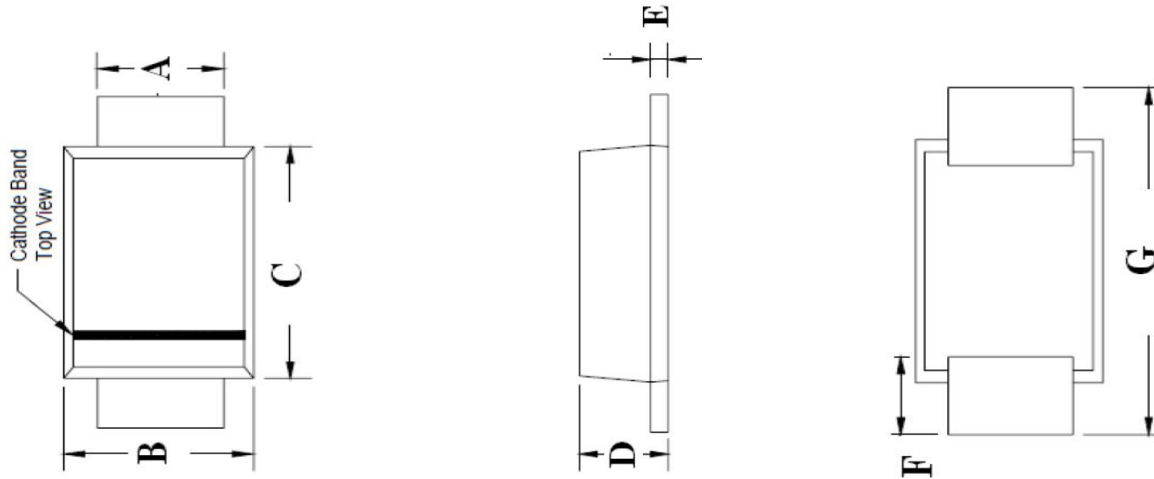


**Fig.4 Maximum Non-Repetitive Peak Forward Surge Current**



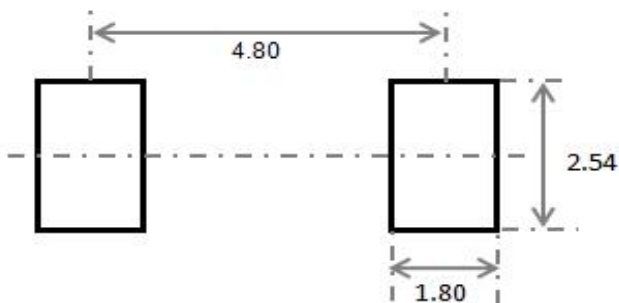
## ULTRA FAST RECOVERY RECTIFIER DIODE

### SMBF Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.90	2.20	0.075	0.086
B	3.50	3.70	0.094	0.110
C	4.20	4.40	0.165	0.173
D	1.10	1.40	0.043	0.055
E	0.15	0.25	0.006	0.010
F	0.95	1.05	0.038	0.041
G	5.10	5.50	0.200	0.216

### SMBF Suggested Pad Layout



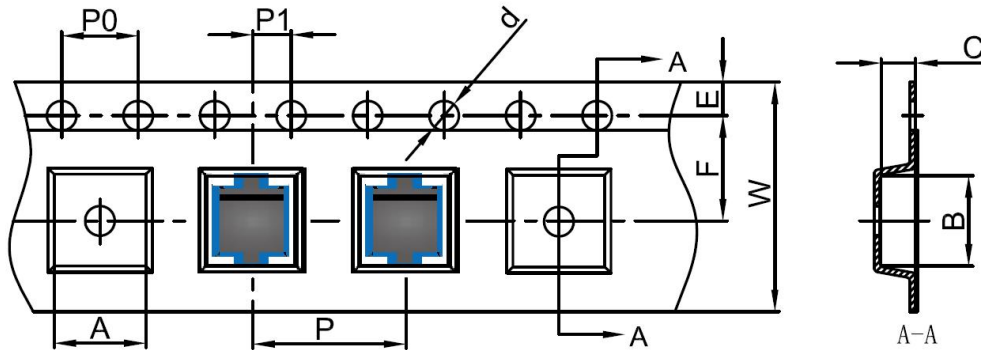
#### Note:

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

## ULTRA FAST RECOVERY RECTIFIER DIODE

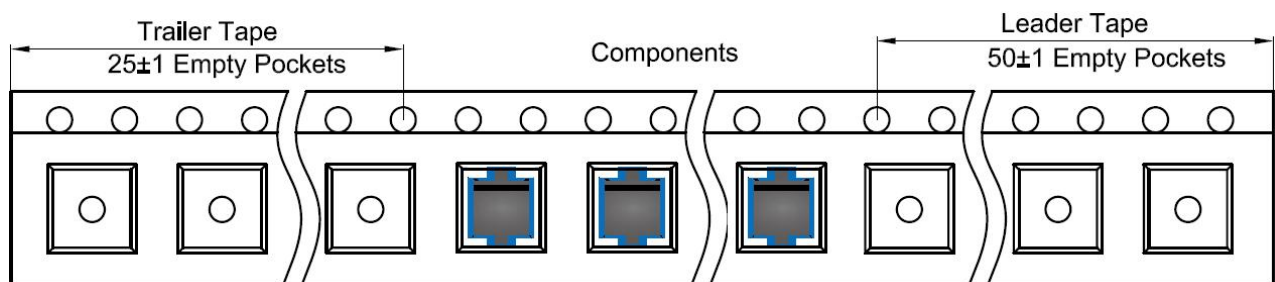
### SMBF Tape and Reel

#### SMBF Embossed Carrier Tape

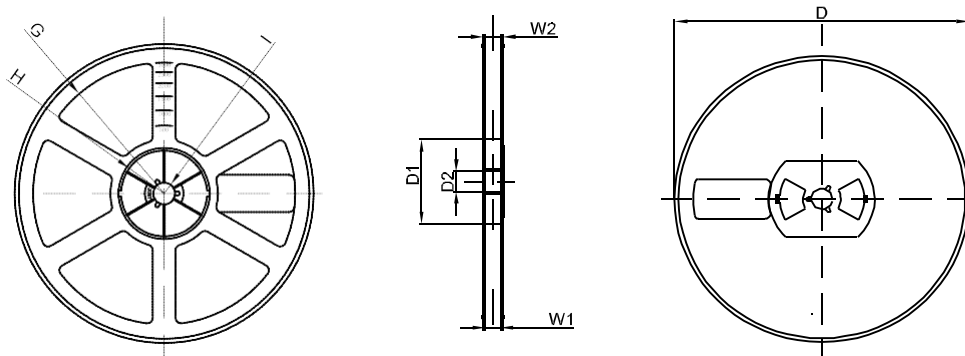


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SMBF	3.80	5.65	1.48	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

#### SMBF Tape Leader and Trailer



#### SMBF Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
13" DIA	Ø330	75.0	13.00	R165	R37.50	R6.50	12.40	17.60
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1