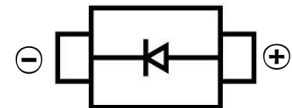


**ULTRA FAST RECOVERY RECTIFIER DIODE**
**FEATURES**

- Glass passivated junction
- Low reverse leakage current
- Low forward voltage drop
- High current capability
- Surface Mount device


**SMB**

**MECHANICAL DATA**

- Case: SMB(DO-214AA)
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.088 grams (approximate)

**MAXIMUM RATINGS AND CHARACTERISTICS(T<sub>A</sub> = 25°C unless otherwise noted)**

Parameter	Symbol	US2A	US2B	US2D	US2G	US2J	US2K	US2M	Unit
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
DC Blocking Reverse Voltage	V <sub>R</sub>	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	35	70	140	280	420	560	700	V
Maximum Average Forward Rectified Current	I <sub>F</sub>	2							A
Non-Repetitive Peak Forward Surge Current @t=8.3ms	I <sub>FSM</sub>	50							A
Thermal Resistance From Junction To Ambient	R <sub>θJA</sub>	25							°C/W
Reverse Recovery Time(@I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A)	t <sub>rr</sub>	50				75			nS
Junction Temperature	T <sub>J</sub>	-55 ~+150							°C
Storage Temperature	T <sub>STG</sub>	-55 ~+150							°C

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise specified)**

Parameter	Symbol	US2A	US2B	US2D	US2G	US2J	US2K	US2M	Unit	Conditions
Forward voltage	V <sub>F</sub>	1.0			1.3	1.7			V	I <sub>F</sub> =2A
Reverse current	I <sub>R</sub>	5							uA	V <sub>R</sub> =V <sub>RRM</sub> , T <sub>J</sub> =25°C
Reverse current	I <sub>R</sub>	100							uA	V <sub>R</sub> =V <sub>RRM</sub> , T <sub>J</sub> =100°C
Diode capacitance	C <sub>D</sub>	50				30			pF	V <sub>R</sub> =4V, f=1MHz

Note: Thermal resistance junction to ambient

ULTRA FAST RECOVERY RECTIFIER DIODE

Typical Characteristics

FIG. 1 – FORWARD CURRENT DERATING CURVE

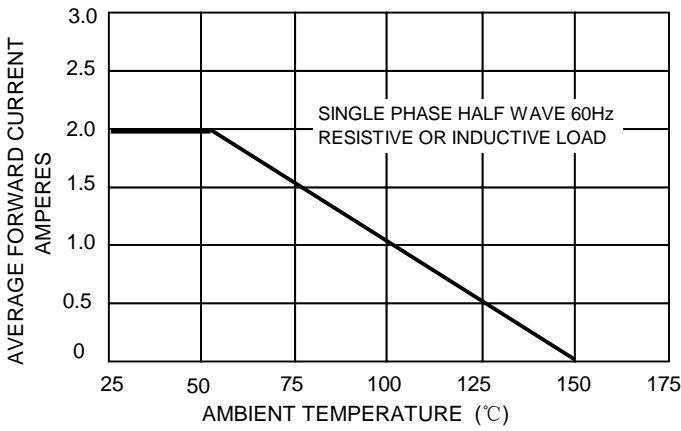


FIG. 2 – MAXIMUM NON-REPETITIVE SURGE CURRENT

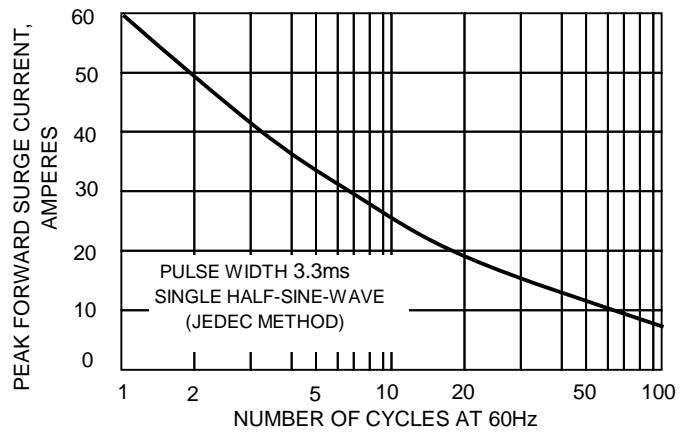


FIG.3 – TYPICAL JUNCTION CAPACITANCE

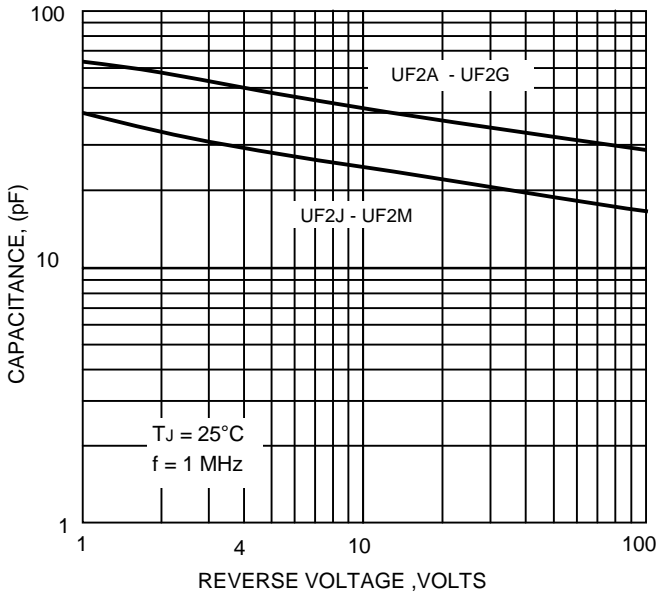
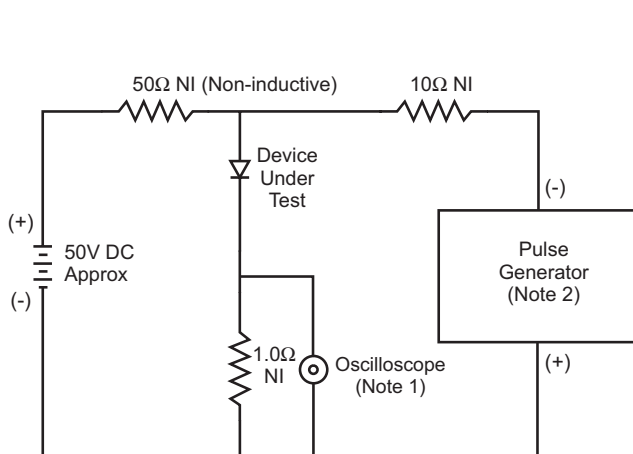
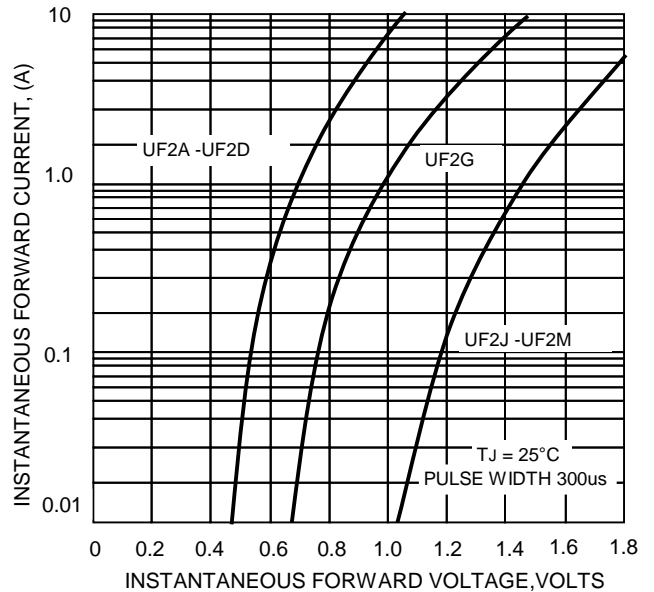
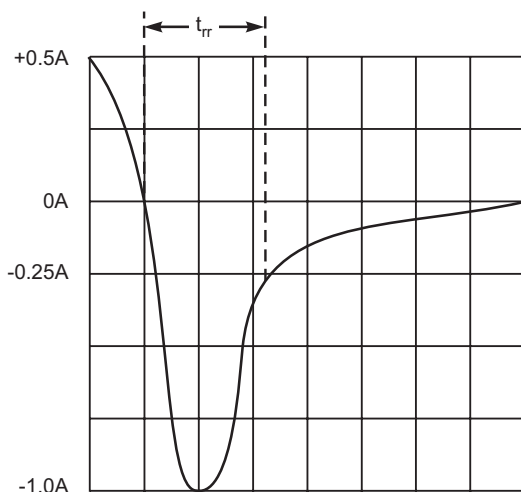


FIG.4-TYPICAL FORWARD CHARACTERISTICS



- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50Ω.

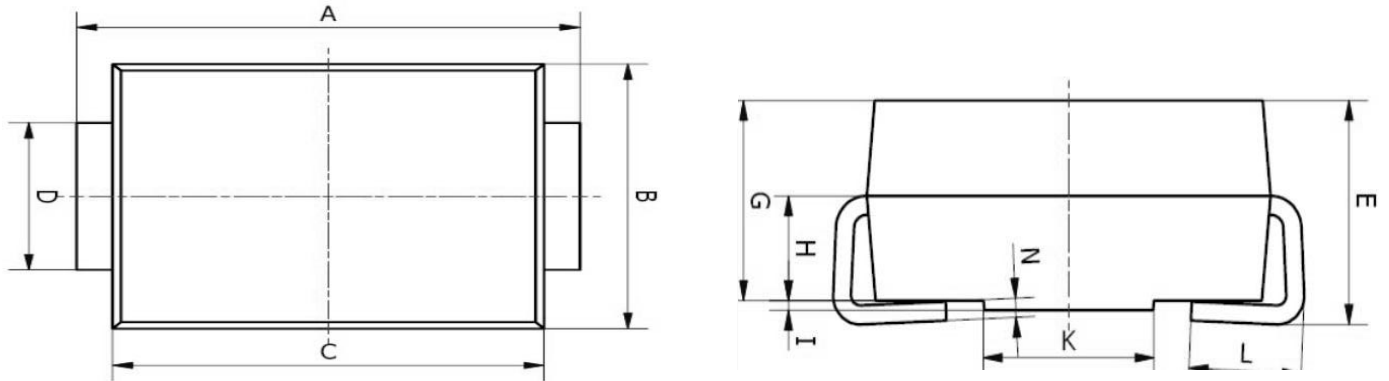


Set time base for 10ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

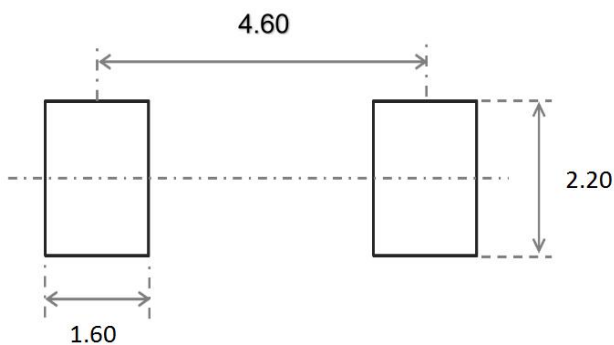
ULTRA FAST RECOVERY RECTIFIER DIODE

**SMB Package Outline Dimensions**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	5.00	5.45	0.197	0.215
B	3.20	4.00	0.126	0.157
C	4.30	4.70	0.169	0.185
D	1.80	2.20	0.071	0.087
E	2.20	2.50	0.087	0.098
G	1.90	2.30	0.075	0.090
H	0.95	1.25	0.037	0.049
I	0.05	0.15	0.002	0.006
K	1.70	2.10	0.067	0.083
L	0.90	1.60	0.035	0.063
N	0.10	0.30	0.004	0.012

**SMB Suggested Pad Layout**



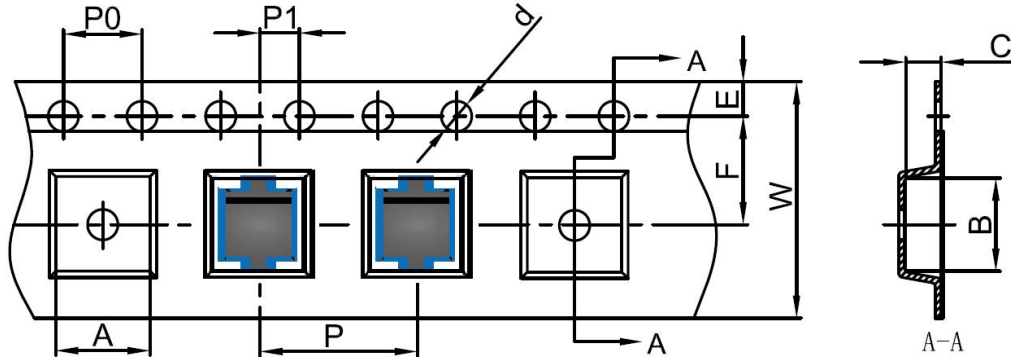
**Note:**

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

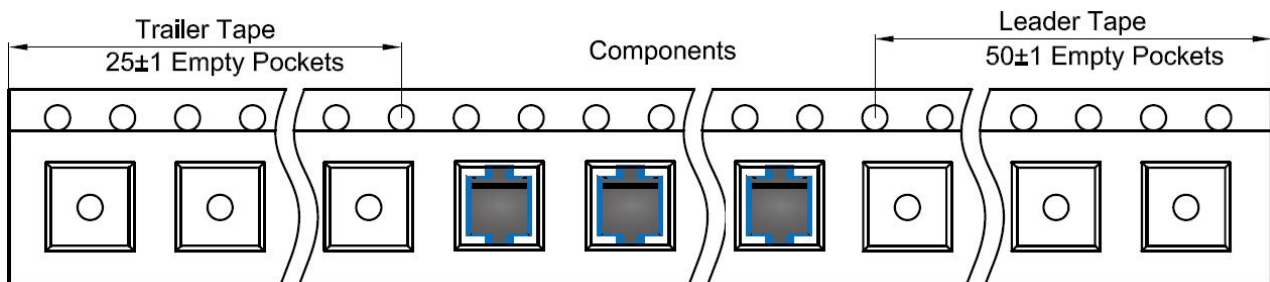
**SMB Tape and Reel**

**SMB Embossed Carrier Tape**

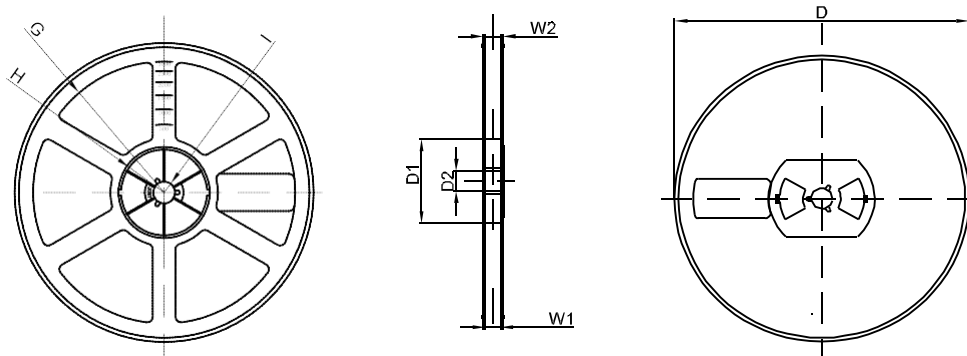


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SMB	4.10	5.50	2.58	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

**SMB Tape Leader and Trailer**



**SMB 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