



## SMBG Plastic-Encapsulate Diodes

### US2A THRU US2M High Efficient Rectifier Diodes

#### Features

- $I_{F(AV)}$  2A
- $V_{RRM}$  50V-1000V
- High surge current capability
- Polarity: Color band denotes cathode

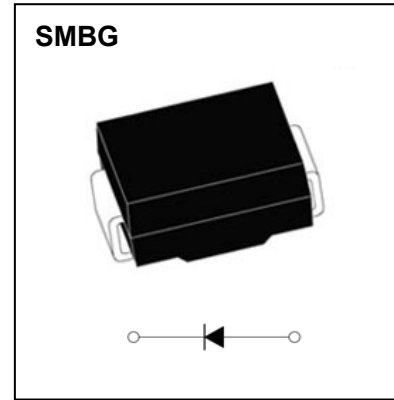
#### Applications

- Rectifier

#### Marking

- US2X

X : From A To M



#### Limiting Values(Absolute Maximum Rating)

Item	Symbol	Unit	Test Conditions	US2						
				A	B	D	G	J	K	M
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
Average Forward Current	$I_{F(AV)}$	A	60Hz Half-sine wave, Resistance load	2.0						
Surge(Non-repetitive)Forward Current	$I_{FSM}$	A	60Hz Half-sine wave, 1 cycle, $T_a=25^\circ\text{C}$	50						
Operation Junction and Storage Temperature Range	$T_J, T_{STG}$	$^\circ\text{C}$		-55 ~ +150						

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

Item	Symbol	Unit	Test Condition	US2						
				A	B	D	G	J	K	M
Peak Forward Voltage	$V_F$	V	$I_F=2.0\text{A}$	1.0			1.3	1.7		
Maximum reverse recovery time	$t_{rr}$	ns	$I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$	50				75		
Peak Reverse Current	$I_{RRM1}$	$\mu\text{A}$	$V_{RM}=V_{RRM}$	$T_a=25^\circ\text{C}$						
	$I_{RRM2}$			$T_a=125^\circ\text{C}$						
Thermal Resistance(Typical)	$R_{\theta J-A}$	$^\circ\text{C}/\text{W}$	Between junction and ambient	68						
	$R_{\theta J-L}$		Between junction and terminal	18						
Juction Capacitance (Typical)	$C_j$	pF	Measured at 1MHZ and Applied Reverse Voltage of 4.0 V.D.C	26			20	10		

#### Notes:

Thermal resistance from junction to ambient and from junction to lead mounted on FR4 PCB double sided copper mini pad

# Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

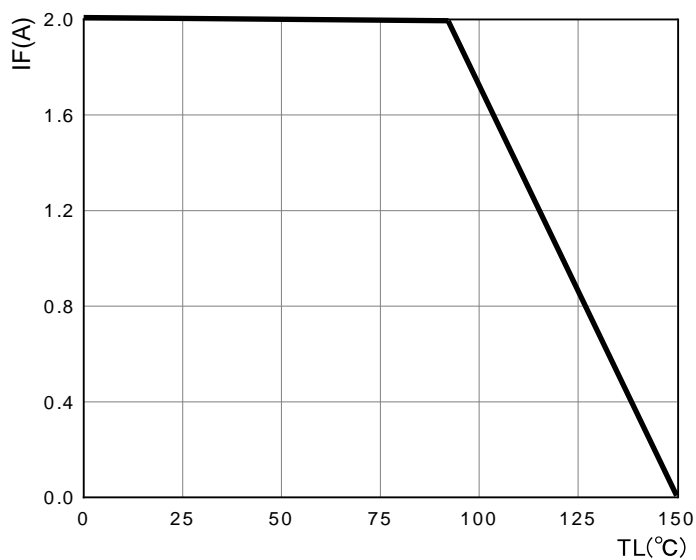
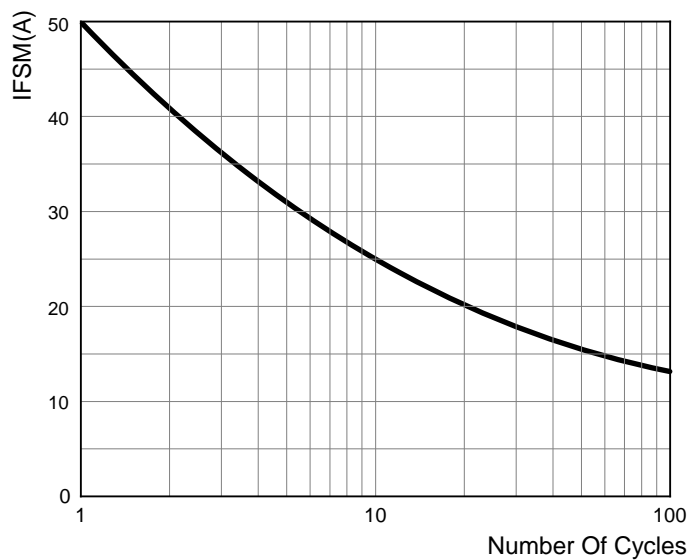
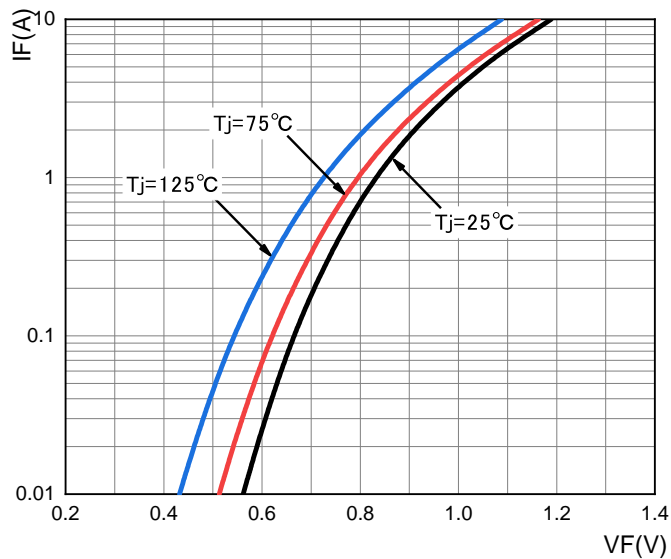


FIG 2: MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



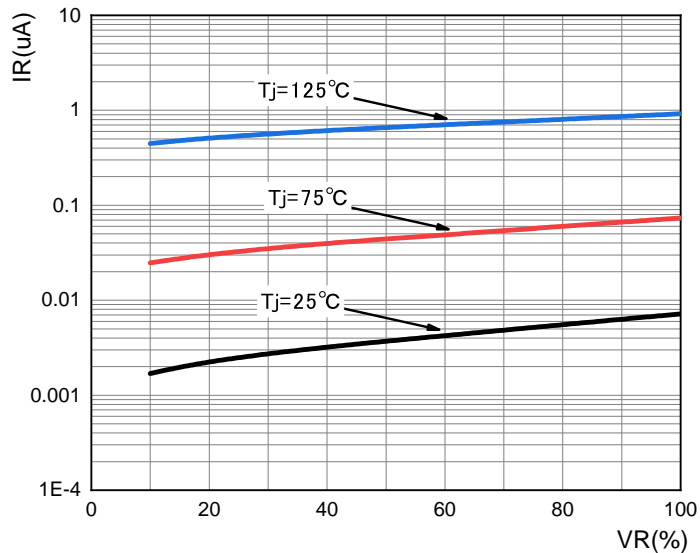
US2A-US2D

FIG.3 : TYPICAL FORWARD CHARACTERISTICS



US2A-US2D

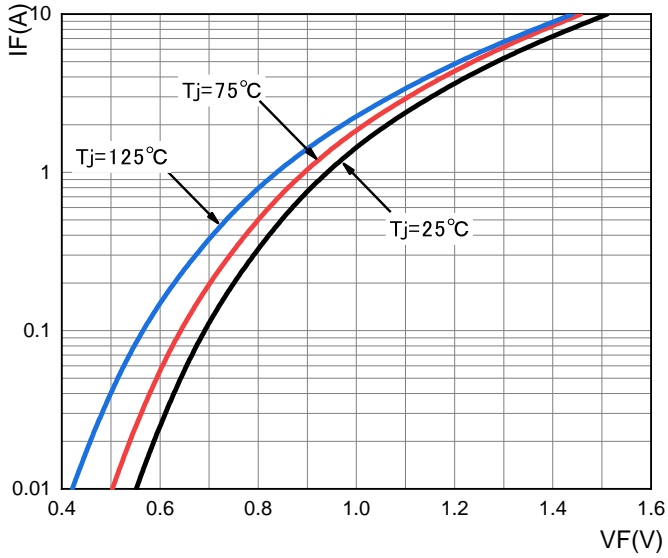
FIG.4 TYPICAL REVERSE CHARACTERISTICS



# Typical Characteristics

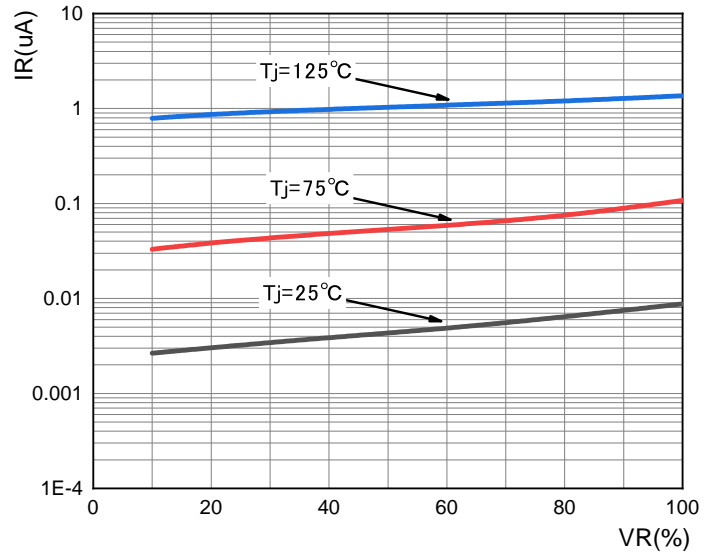
US2G

FIG.5 : TYPICAL FORWARD CHARACTERISTICS



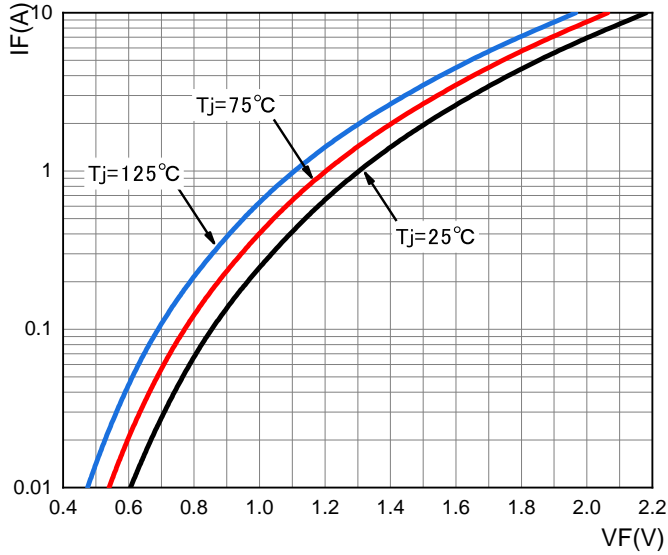
US2G

FIG.6 TYPICAL REVERSE CHARACTERISTICS



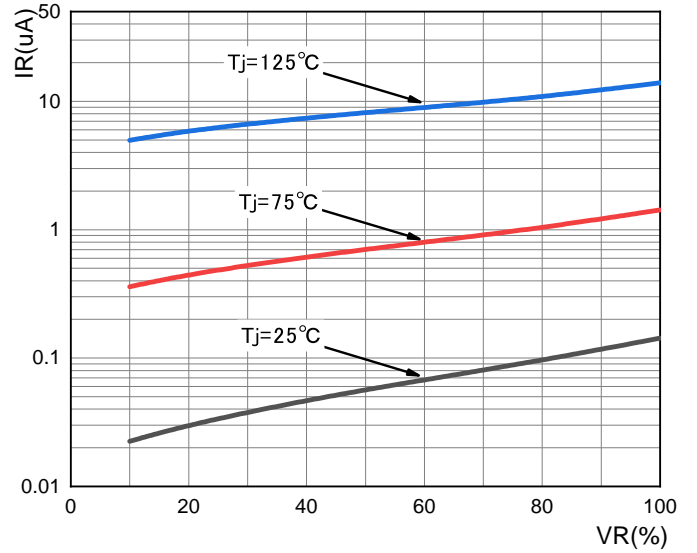
US2J-US2M

FIG.7 : TYPICAL FORWARD CHARACTERISTICS

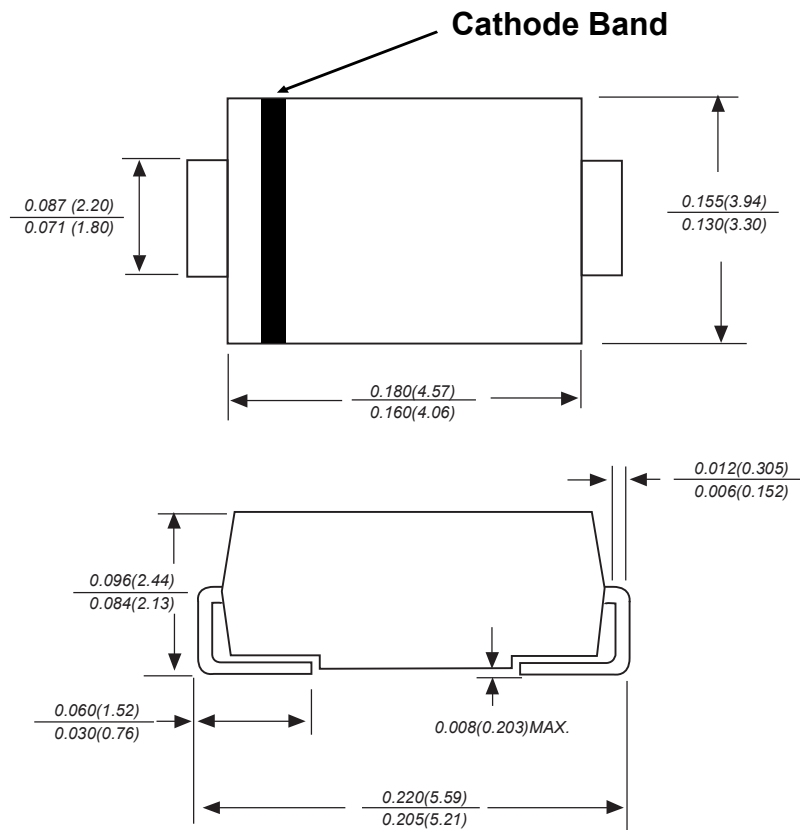


US2J-US2M

FIG.8 TYPICAL REVERSE CHARACTERISTICS

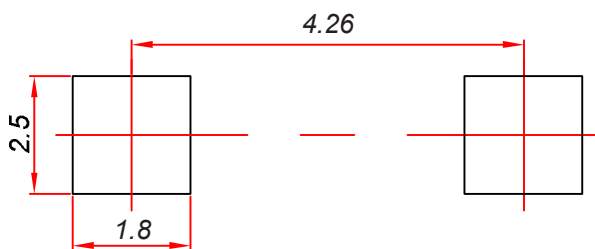


## SMBG Package Outline Dimensions



Dimensions in inches and (millimeters)

## SMBG Suggested Pad Layout



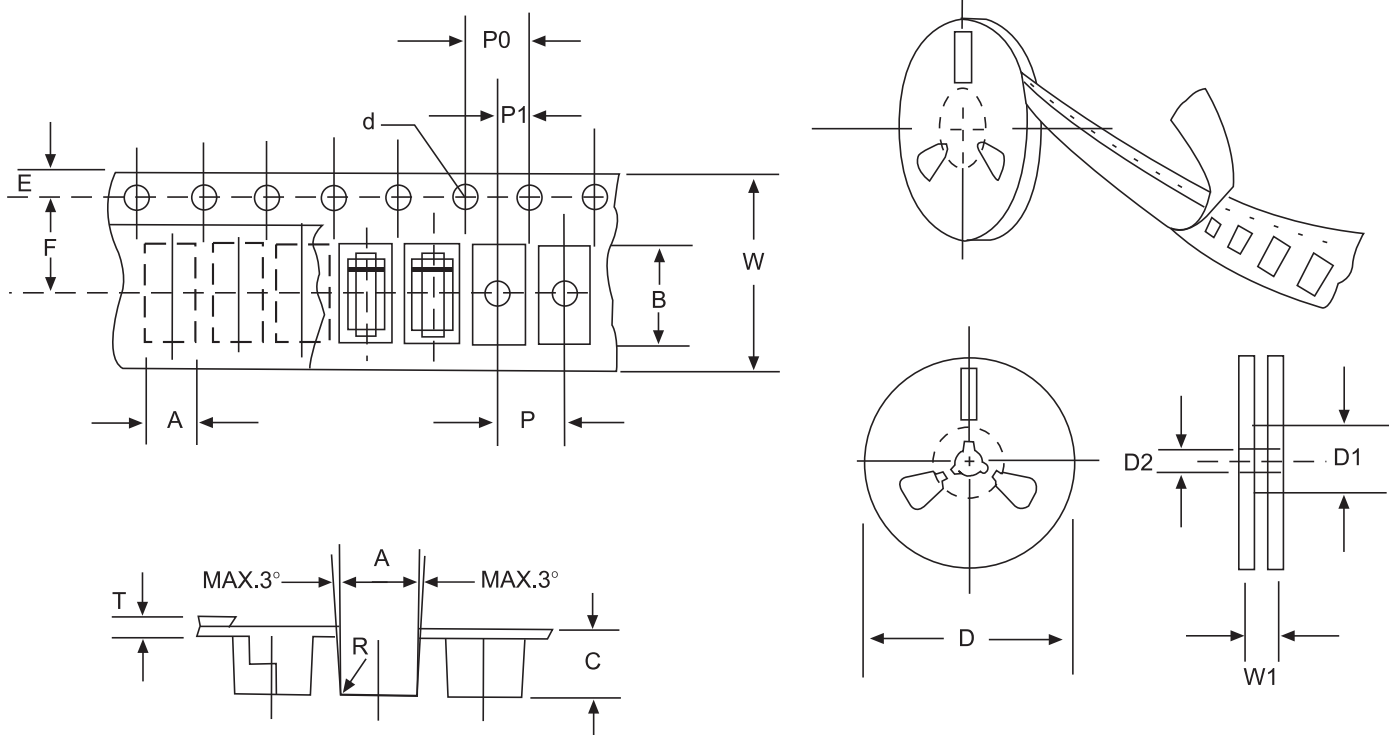
### Note:

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

### NOTICE

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# Reel Taping Specifications For Surface Mount Devices–SMBG



**FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING**

ITEM	SYMBOL	SMBG mm(inch)
Carrier width	A	4.09±0.1(0.161±0.004)
Carrier length	B	5.82±0.1(0.229±0.004)
Carrier depth	C	2.50±0.1(0.100±0.004)
Sprocket hole	d	1.55±0.05 (0.061±0.002)
Reel outside diameter	D	330±2.0(13±0.079)
Reel inner diameter	D1	75 ±1.0 ( 2.95 ±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	5.65±0.05(0.222±0.002)
Punch hole pitch	P	8.0±0.1(0.315±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)
Total tape thickness	T	0.32±0.1 (0.013±0.004)
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 packed in accordance with EIA standard RS-481-A and specification given above.

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