

### Primary Characteristics

$I_F$	3	A
$V_{RRM}$	50~1000	V
$I_{FSM}$	80	A
$V_F$	1.0~1.70	V

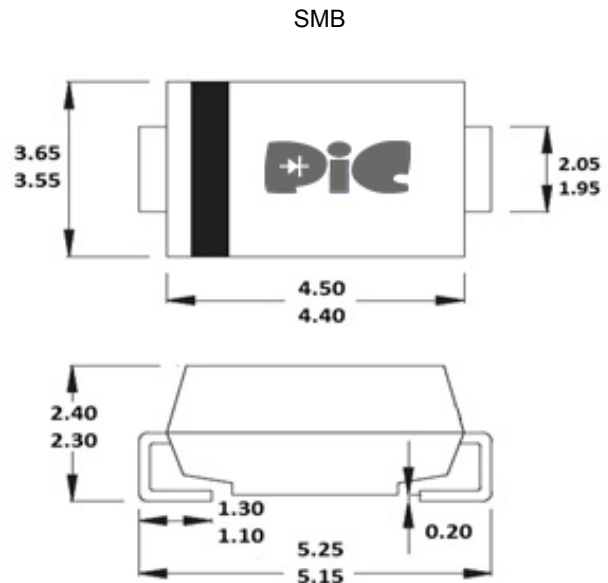
### Features

- Low profile package
- Ideal for automated placement
- Low reverse current
- Fast reverse recovery time
- Component in accordance to RoHS 2002/95/EC

### Mechanical Data

- Case: DO-214AA(SMB)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Lead free Plating (Tin Finish)  
Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.092 grams (approximate)

### Package Outline Dimensions



Dimensions in inches and millimeters

### Maximum Ratings (TA=25°C unless otherwise noted)

PARAMETER	SYMBOL	US3AB	US3BB	US3DB	US3GB	US3JB	US3KB	US3MB	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current	$I_F$	3.0							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	80.0							A
Maximum Instantaneous Forward Voltage IF=1A @ 25°C	$V_F$	1.0		1.3		1.7		V	
Maximum DC Reverse Current @ Tc=25°C at Rated DC Blocking Voltage @ Tc=100°C	$I_R$	5 100							uA
Typical Junction Capacitance(NOTE1)	$C_j$	20							pF
Maximum Reverse Recovery Time(NOTE2)	$T_{rr}$	50.0				75.0			ns
Typical Thermal Resistance(NOTE3)	$R_{\theta Ja}$	70							°C/W
Operating Temperature Range	$T_J$	-55 to +150							°C
Storage Temperature Range	$T_{STG}$	-55 to +150							°C

#### NOTES:

1. Measured at 1.0MHz and applied reverse voltage of 4.0V DC
2. Measured with  $I_F=0.5A, I_R=1A, I_{RR}=0.25A$
3. Device mounted on FR-4 substrate, 1"×1", 2oz, single-sided, PC boards with 0.1"×0.15" copper pad.

### Rating and Characteristics Curves

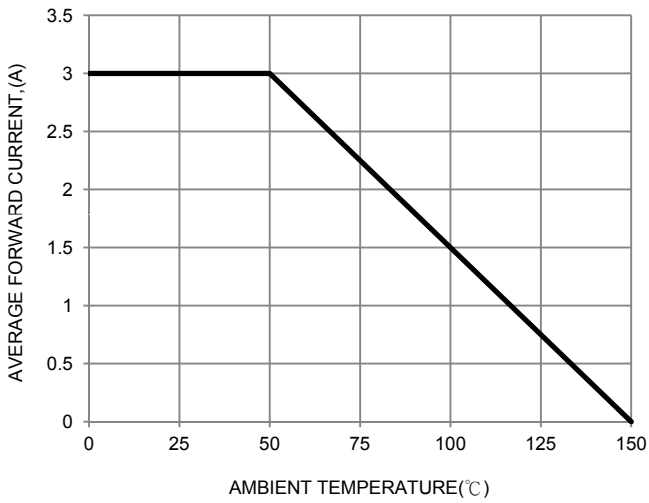


FIG. 1-Typical Forward Current Derating Curve

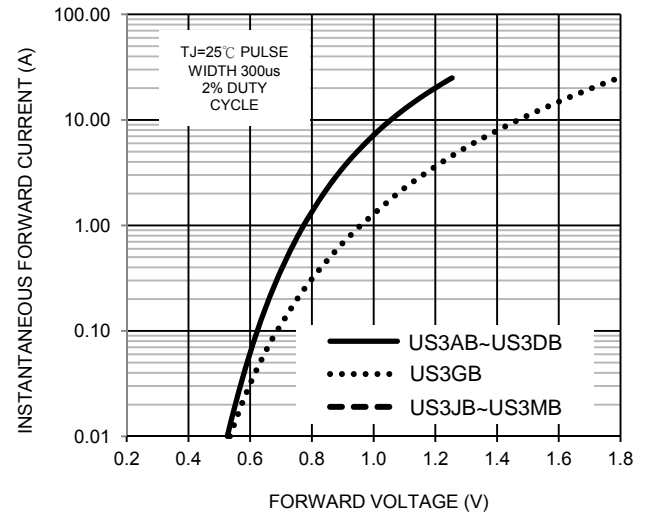


FIG. 2-Typical Forward Characteristics

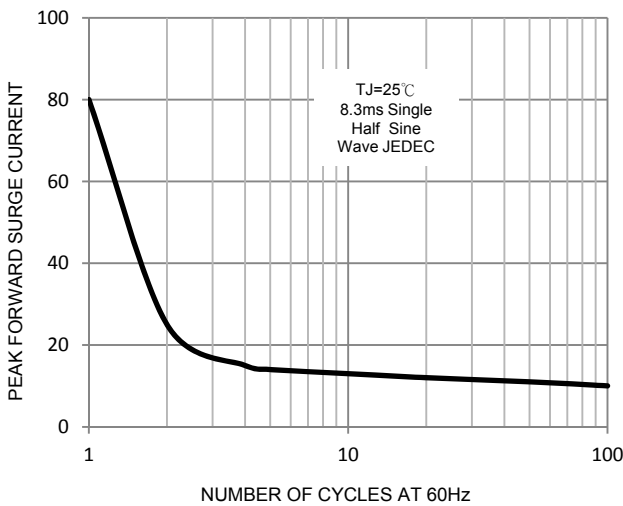


FIG. 3-Maximum Non-Repetitive Forward Surge Current

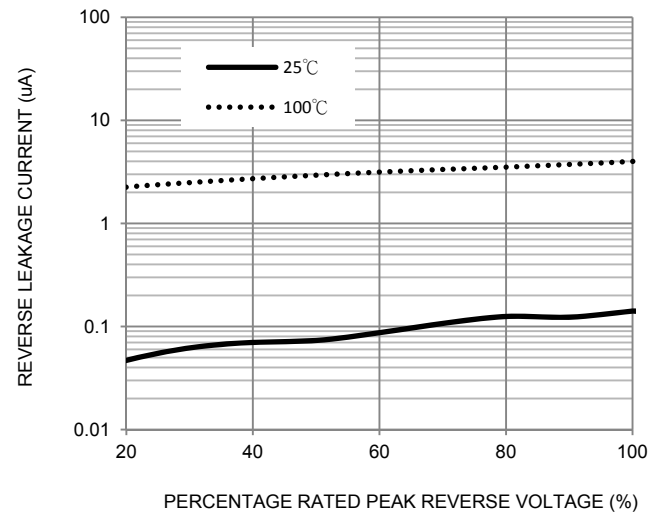


FIG. 4-Typical Reverse Characteristics

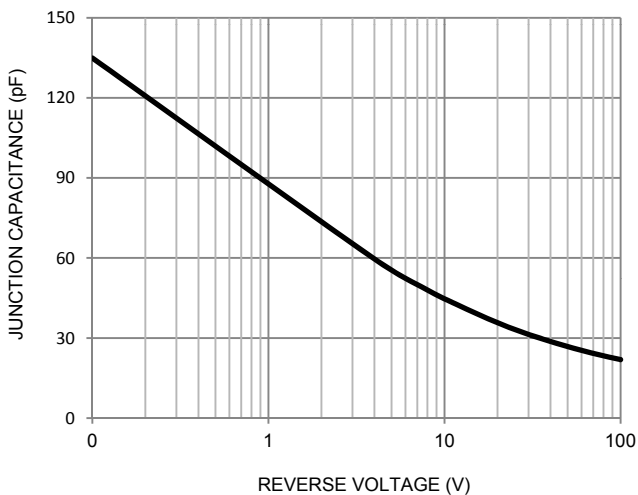


FIG. 5-Typical Junction Capacitance

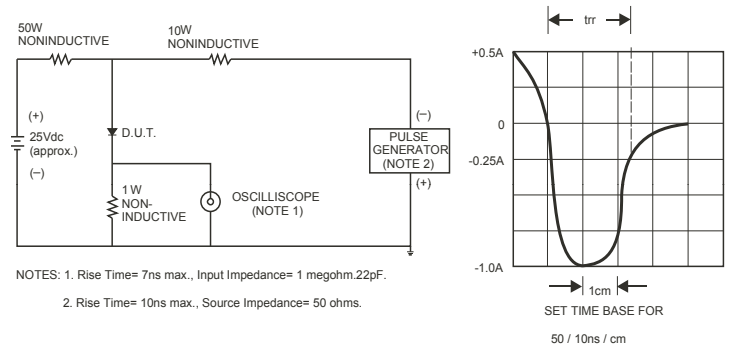
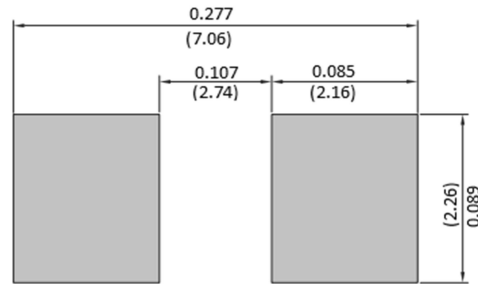


FIG. 6-Reverse Recovery Time Characteristic and Test Circuit

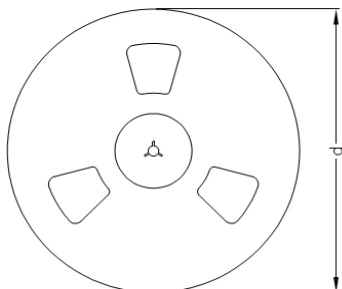
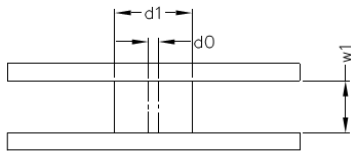
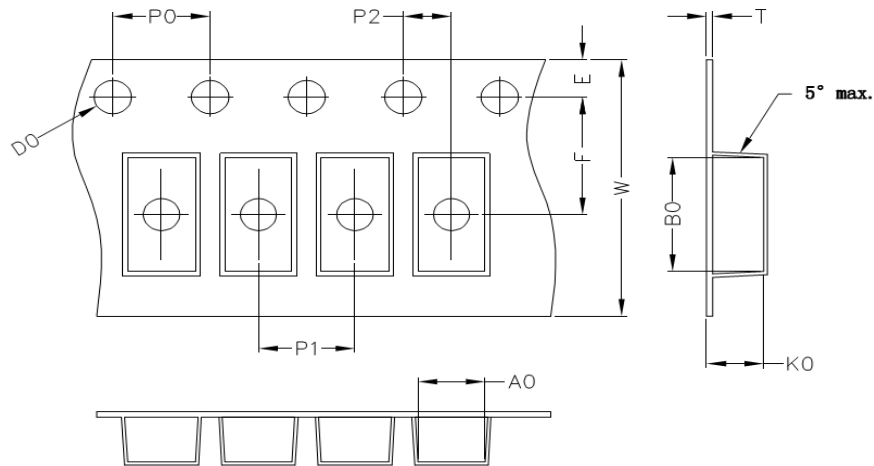
### Pad Layout



Unit: mm

### Packaging Specifications

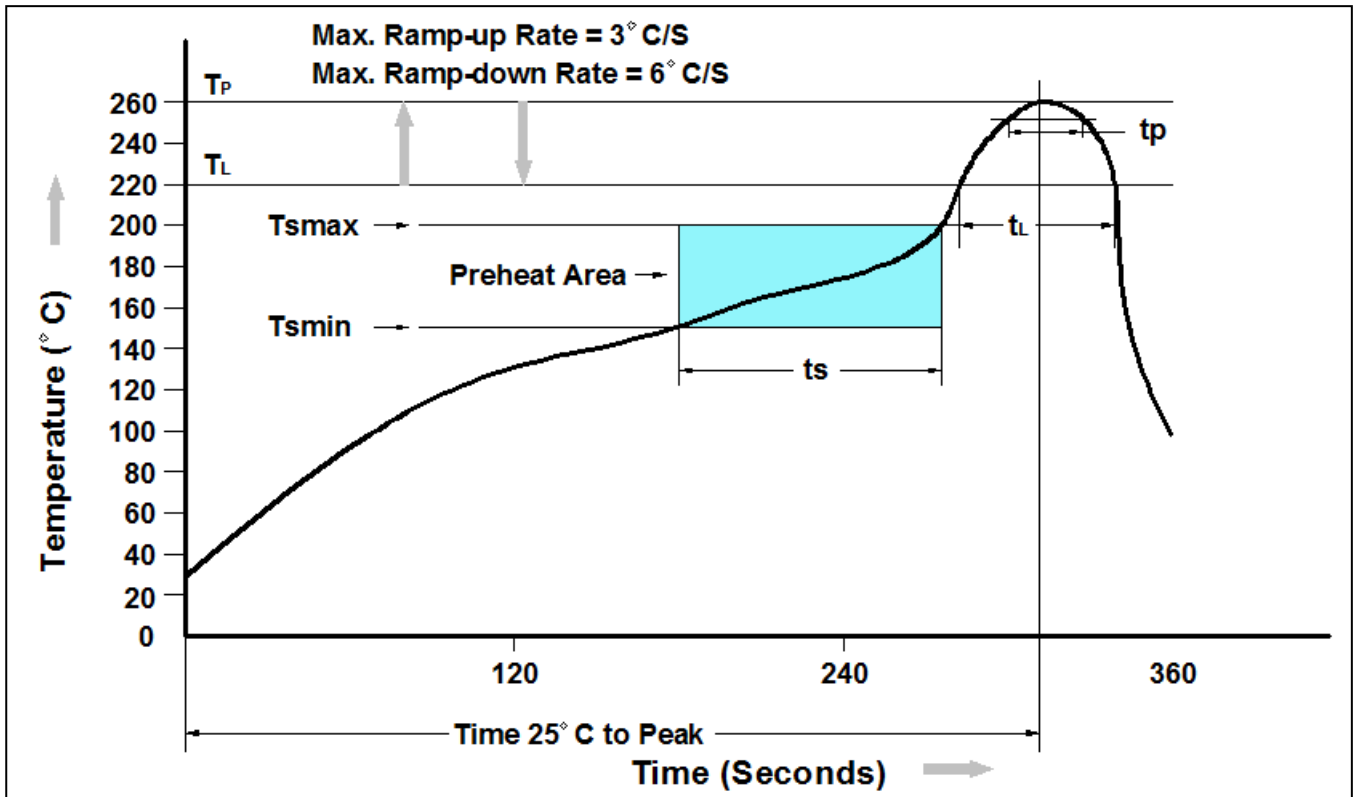
Package	A0 (mm)	B0 (mm)	K0 (mm)	D0 (mm)	E (mm)	F (mm)	P0 (mm)	P1 (mm)	P2 (mm)	T (mm)	W (mm)
SMA	2.8±0.1	5.33±0.1	2.36±0.1	1.55±0.1	1.75±0.1	5.50±0.1	4.0±0.1	4.0±0.01	2±0.1	0.25±0.1	9.4±0.1
SMB	3.8±0.1	5.40±0.1	2.45±0.1	1.55±0.1	1.75±0.1	5.50±0.1	4.0±0.1	8.0±0.01	2±0.1	0.25±0.1	9.4±0.1
SMC	6.05±0.1	8.31±0.1	2.54±0.1	1.55±0.1	1.75±0.1	7.50±0.1	4.0±0.1	8.0±0.05	2±0.1	0.25±0.1	12±0.1



Package	D1 (mm)	D0 (mm)	W1 (mm)	D (mm)
SMA	75	13.5	13.5	330
SMB	75	13.5	13.5	330
SMC	75	13.5	17.0	330

NOTE : The tolerance of reel is ±2mm

### Recommend IR Reflow Soldering Thermal Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T Amin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (T Amin to Tsmax)	60-120 seconds
Average Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

### Ordering Information

Part Number	Description	Quantity
US3AB~US3MB	SMB Reel	3000 pcs

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