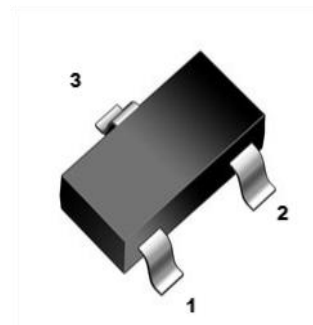




### 1. Features

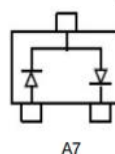
- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- For General Purpose Switching Applications

SOT-23



### 2. Mechanical Data

- Case: Molded Plastic, SOT-23.
- Epoxy: UL 94V-0 rate flame retardant.
- Terminals: Plated Leads Solderable per MIL-STD-750, Method-2026.
- Marking: A7
- Mounting Position : Any.



### 3. Maximum Ratings

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	100	V
Reverse Voltage	$V_R$	100	V
Forward Continuous Current	$I_{FM}$	200	mA
Non-Repetitive Peak Forward Surge Current	$I_{FSM}$	1	A
		2	
Power Dissipation	$P_D$	350	mW
Junction Temperature	$T_J$	-55 to +150	°C
Storage Temperature Range	$T_{stg}$	-55 to +150	°C

### 4. Electrical Characteristics ( $T_a=25^\circ\text{C}$ unless otherwise noted)

Parameters	Symbol	Condition	Min	TYP	Max	Unit
Reverse breakdown voltage	$V_{(BR)}$	$I_R = 100\mu\text{A}$	100	-	-	V
Forward Voltage	$V_F$	$I_F = 1\text{mA}$	0.55	-	0.7	V
		$I_F = 10\text{mA}$	0.67	-	0.82	
		$I_F = 100\text{mA}$	0.75	-	1.1	
		$I_F = 150\text{mA}$	-	-	1.25	
Reverse Current	$I_R$	$V_R = 50\text{V}, T_J = 25^\circ\text{C}$	-	-	1	$\mu\text{A}$
		$V_R = 100\text{V}, T_J = 25^\circ\text{C}$	-	-	3	
		$V_R = 50\text{V}, T_J = 125^\circ\text{C}$	-	-	100	
Total Capacitance	$C_T$	$V_R = 0\text{V}, f = 1\text{MHz}$	-	-	2	pF
Reverse Recovery Time	$t_{rr}$	$I_F = I_R = 10\text{mA}, I_{rr} = 0.1 \cdot I_R, R_L = 100\Omega$	-	-	4	ns



5. Rating And Characteristic Curves

Fig. 1 Typical Forward Characteristics

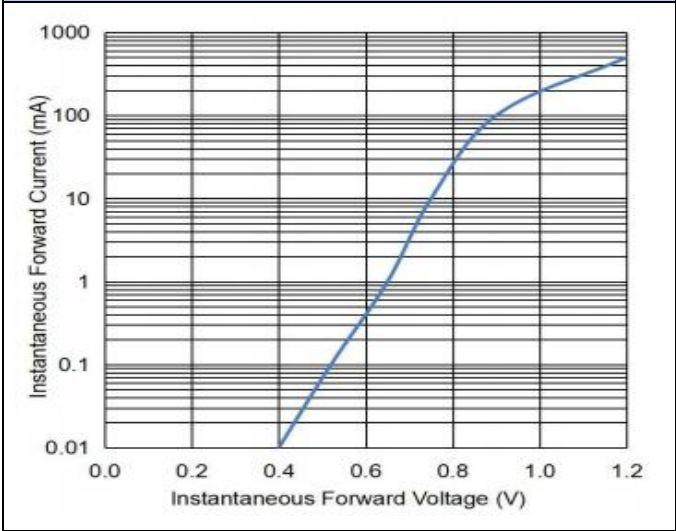


Fig. 2 Typical Reverse Characteristics

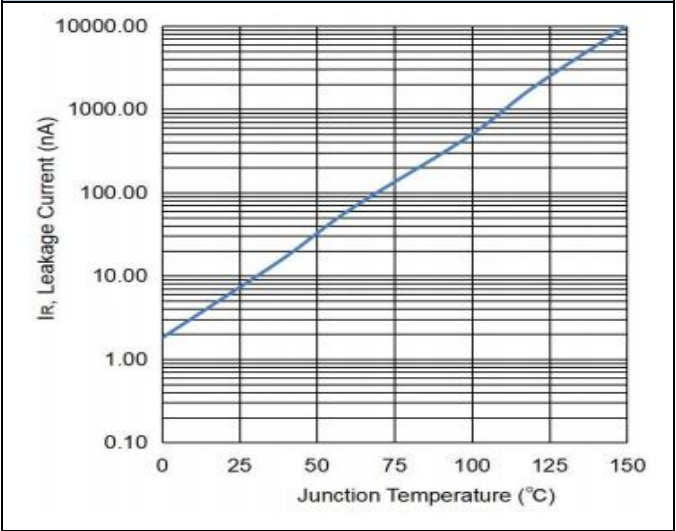
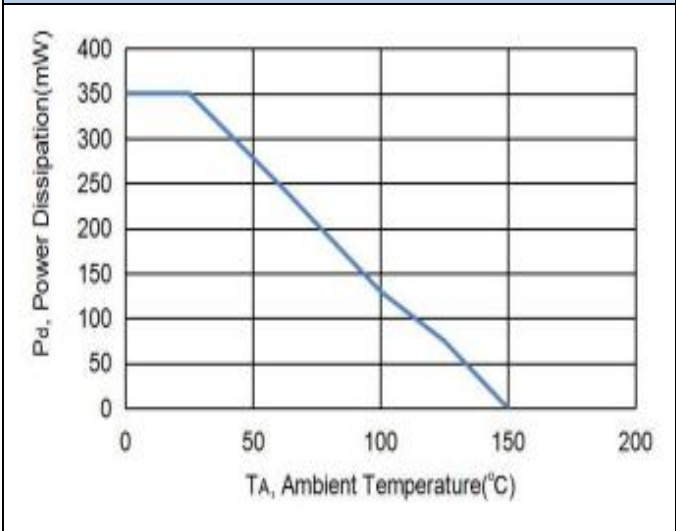
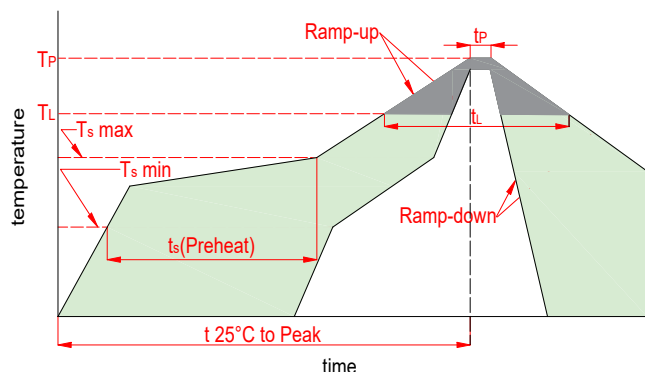


Fig.3 Power Derating Curve



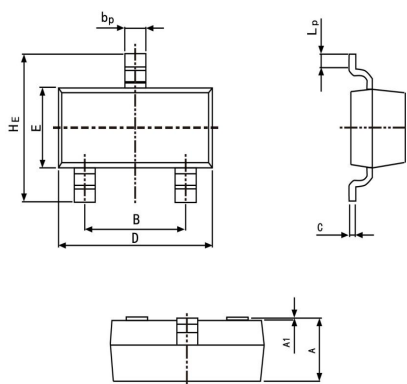


## 6. Soldering Parameters



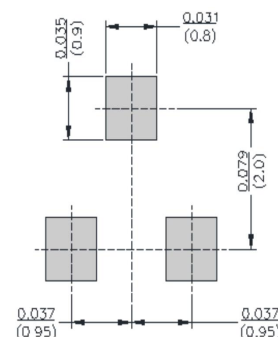
Reflow Condition		Lead-free
Pre Heat	Temp. min( $T_s$ (min))	150℃
	Temp. max( $T_s$ (min))	200℃
	Time(min to max)( $t_s$ )	60~120s
Aver. ramp up rate(Liquidus Temp.)( $T_L$ )to peak		3℃/s max
$T_s$ (max) to $T_L$ -Ramp-up Rate		3℃/s max
Reflow	Temp.( $T_L$ )(Liquidus)	217℃
	Temp.( $t_L$ )(Liquidus)	60~150s
Peak Temp.( $T_P$ )		260 <sup>+0/-5</sup> ℃
Time within actual peak Temp.( $t_p$ )		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe.( $T_p$ )		8 minutes max
Do not exceed		260℃

## 7. Dimensions

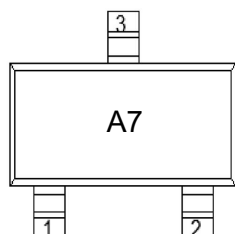


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.035	0.045	0.90	1.15
B	0.070	0.081	1.78	2.05
bp	0.012	0.020	0.30	0.51
C	0.003	0.007	0.08	0.18
D	0.110	0.118	2.80	3.00
E	0.047	0.055	1.20	1.40
HE	0.087	0.110	2.20	2.80
A1	0.000	0.004	0.00	0.10
LP	0.008	0.020	0.20	0.50

Mounting PAD Layout



## 8. Part Marking System



## 9. Package Information

Package	Part Number	Tape Width(mm)	Quantity(pcs)
SOT-23	MMBD7000	8	3000



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