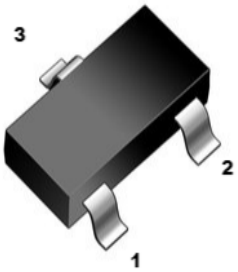
MMBD4448

Silicon Epitaxial Planar Switching Diode

1. Features

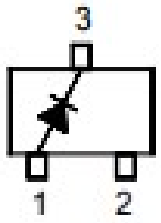
SOT-23

- Fast switching speed
- High Conductance



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:5D
- Mounting Position : Any.



3. Maximum Ratings

Electrical Characteristics Rating at 25℃ ambient temperature unless otherwise specified.

Characteristic		Symbol	Value	Unit
Repetitive Peak Reverse Voltage		V_{RRM}	100	V
Reverse Voltage		V_R	75	V
Average Rectified Forward Current		$I_{F(AV)}$	250	mA
Forward Continuous Current		I_{FM}	500	mA
Non-repetitive Peak Forward Surge Current	@t=1s	I_{FSM}	2	A
	@t=1μs		4	A
Power Dissipation		P_D	350	mW
Operating junction and storage temperature range		T_j,T_{stg}	-55 to+150	℃

4. Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameters	Symbol	Cindition	Min	TYP	Max	Unit
Forward Voltage	V_F	I_F = 5mA	0.62	-	0.72	V
		I_F = 10mA	-		0.855	
		I_F = 100mA	-		1	
		I_F = 150mA	-		1.25	
Reverse Leakage Current	I_R	V_R = 20V	-	-	25	nA
		V_R = 75V	-	-	2.5	μA
		V_R = 25V,T_J=150℃	-	-	30	μA
		V_R = 75V,T_J=150℃	-	-	50	μA
Junction Capacitance	C_J	V_R = 0 V, f = 1 MHz	-	-	4	pF
Reverse Recovery Time	t_{rr}	I_F=I_R=10mA,I_{rr}=0.1*I_R, R_L=100Ω	-	-	4	ns

5. Rating And Characteristic Curves

Fig. 1 Forward Characteristics

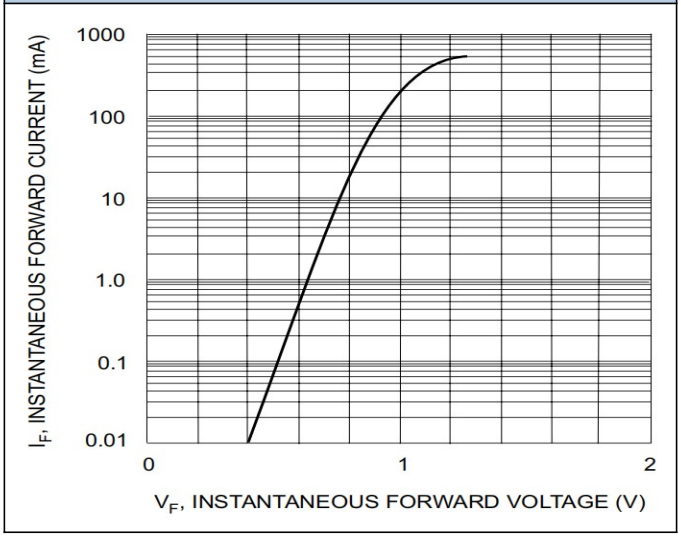
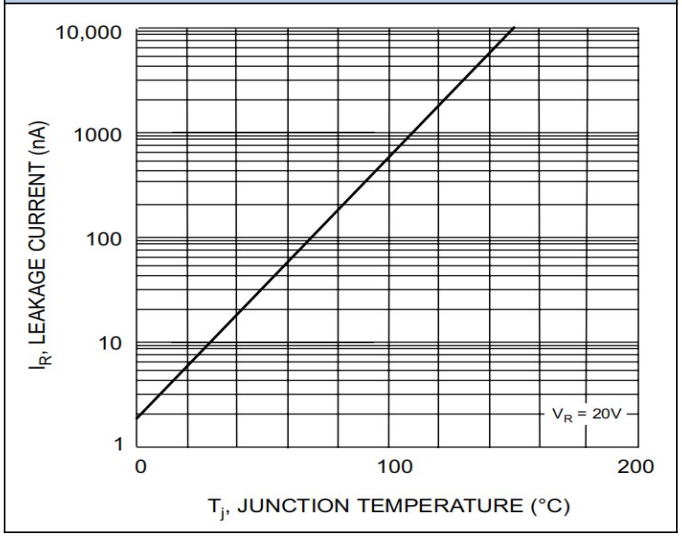
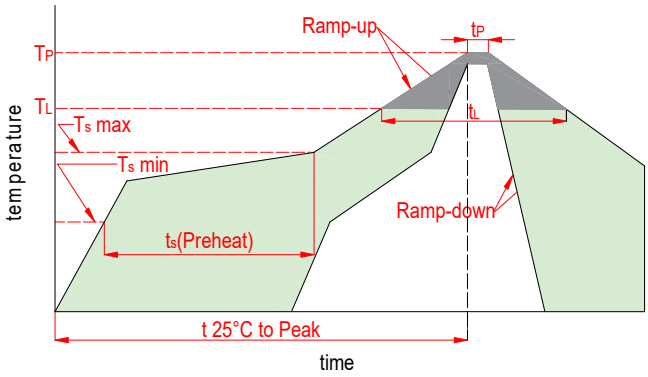


Fig. 2 Leakage Current vs Junction Temperature

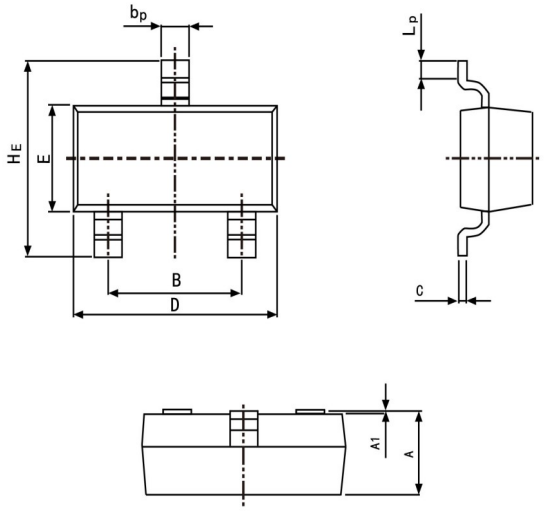


6. Soldering Parameters



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)		$260^{+0/-5}$℃
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

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