Prisemi®

PBAT54X Series

Schottky Barrier Diode

Feature

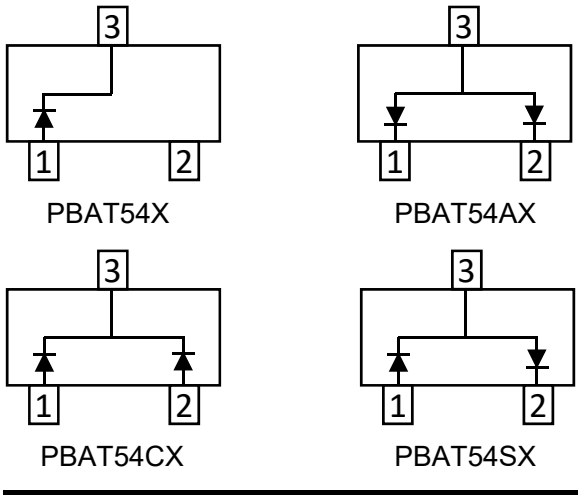
- Low Profile Package
- Ideal for Automated Placement
- Ultrafast Reverse Recovery Time
- Low Power Losses, High Efficiency
- Low Forward Voltage Drop
- High Surge Capability
- RoHS Compliant

Applications

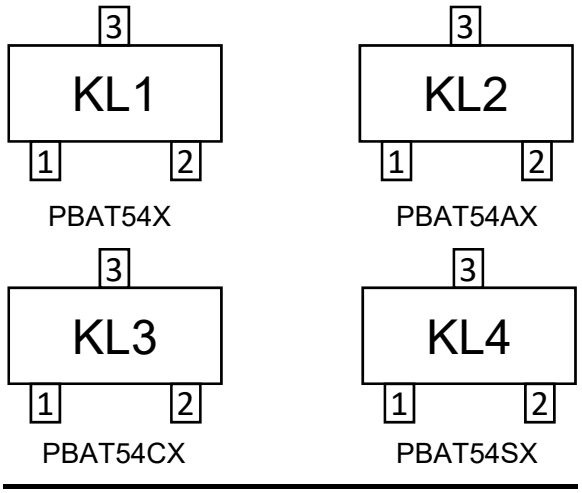
- Low Voltage
- High-Frequency Inverters
- Free Wheeling
- Polarity Protection

Mechanical Characteristics

- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020



Circuit Diagram



Marking

Maximum Ratings and Thermal Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Units
Reverse Voltage (Repetitive Peak)	V_{RRM}	30	V
Reverse Voltage (RMS)	$V_{R(RMS)}$	21	V
DC Blocking Voltage	V_R	30	V
Forward Continuous Current	I_{FM}	200	mA
Peak Forward Surge Current 8.3 ms Single Half Sine-wave	I_{FSM}	600	mA
Power Dissipation	P_D	200	mW
Thermal Resistance Junction to Ambient (Typ.)	$R_{\theta JA}$	500	℃/W
Operating Junction Temperature Range	T_J	125	℃
Storage Temperature Range	T_{STG}	-55 ~ +150	℃

Electrical characteristics per line@25℃ (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Breakdown Voltage	V_R	I_R=100μA	30	-	-	V
Forward Voltage	V_F	I_F = 0.1mA	-	-	0.24	V
		I_F = 1mA	-	-	0.32	
		I_F = 10mA	-	-	0.4	
		I_F = 30mA	-	-	0.5	
Reverse Current	I_R	V_R = 25V	-	-	2.0	μA
Reverse Recovery Time	T_{rr}	I_F = I_R = 10mA I_{rr}=0.1 X I_R , R_L =100Ω	-	-	5	nS
Type Junction Capacitance	C_J	V_R = 1.0V, f = 1MHz	-	-	30	pF

Typical Characteristics

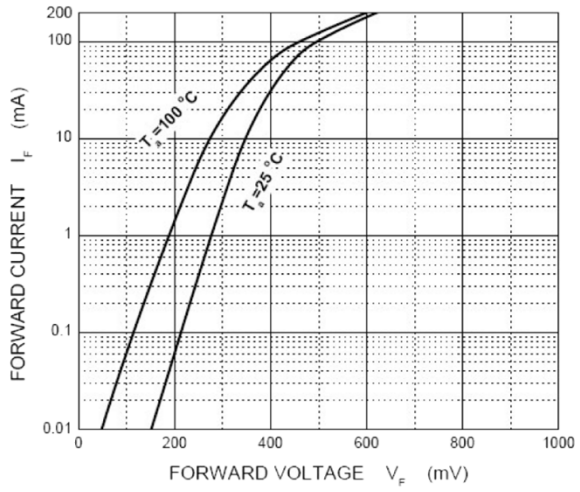


Fig 1. Forward Characteristics

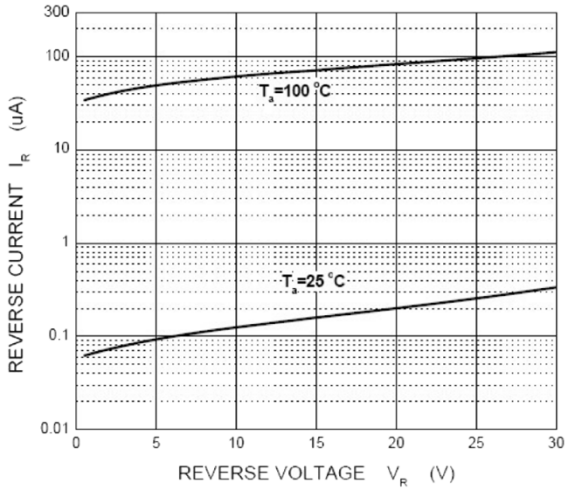


Fig 2. Reverse Characteristics

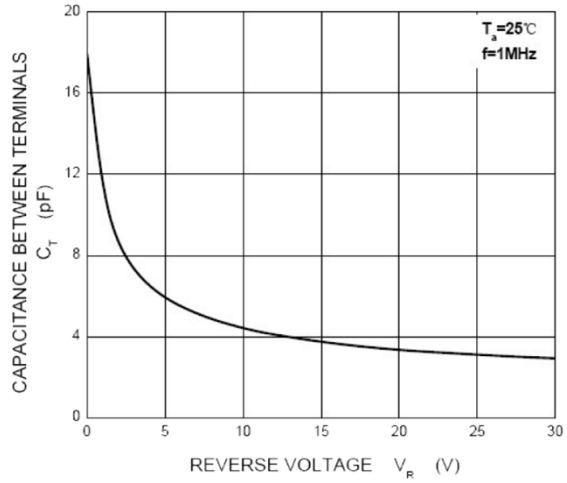


Fig 3. Capacitance Characteristics

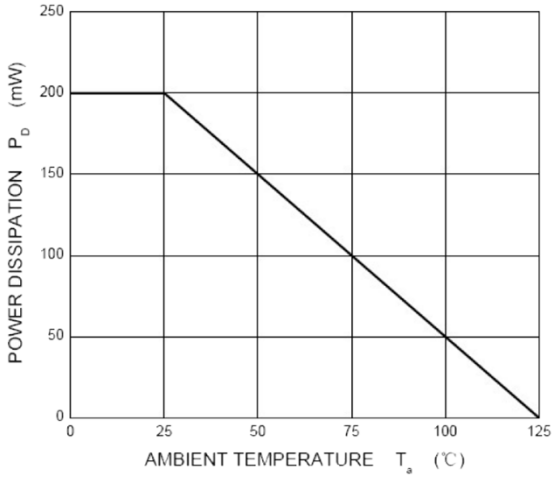
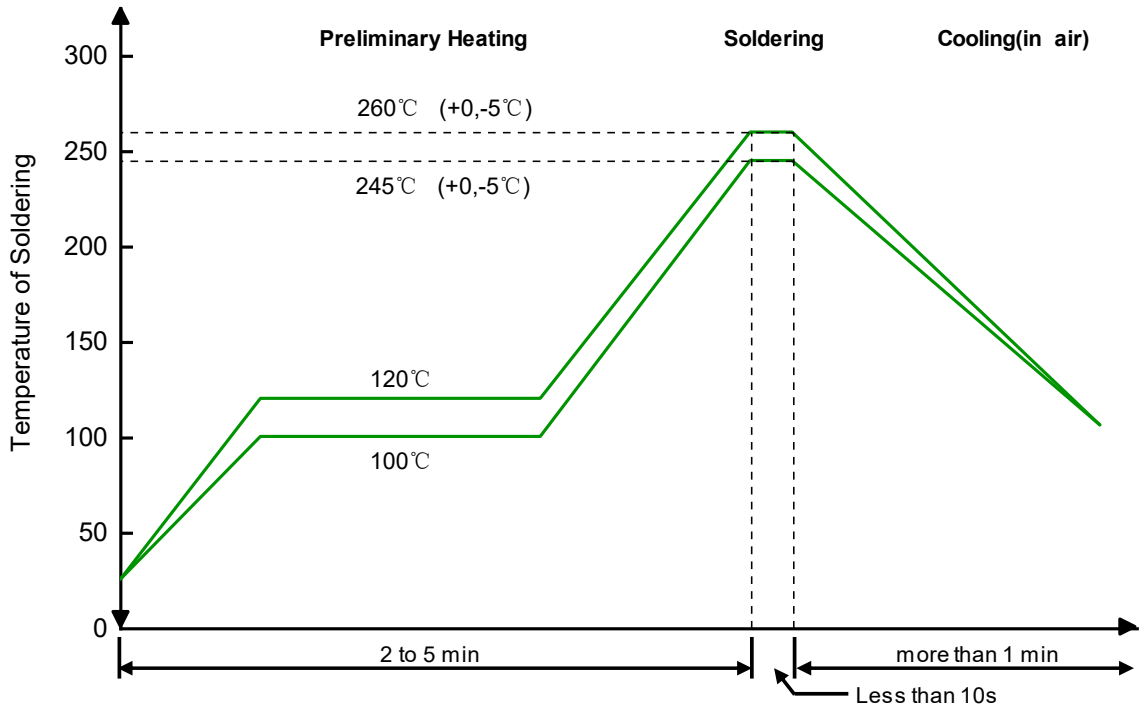


Fig 4. Power Derating Curve

Solder Reflow Recommendation

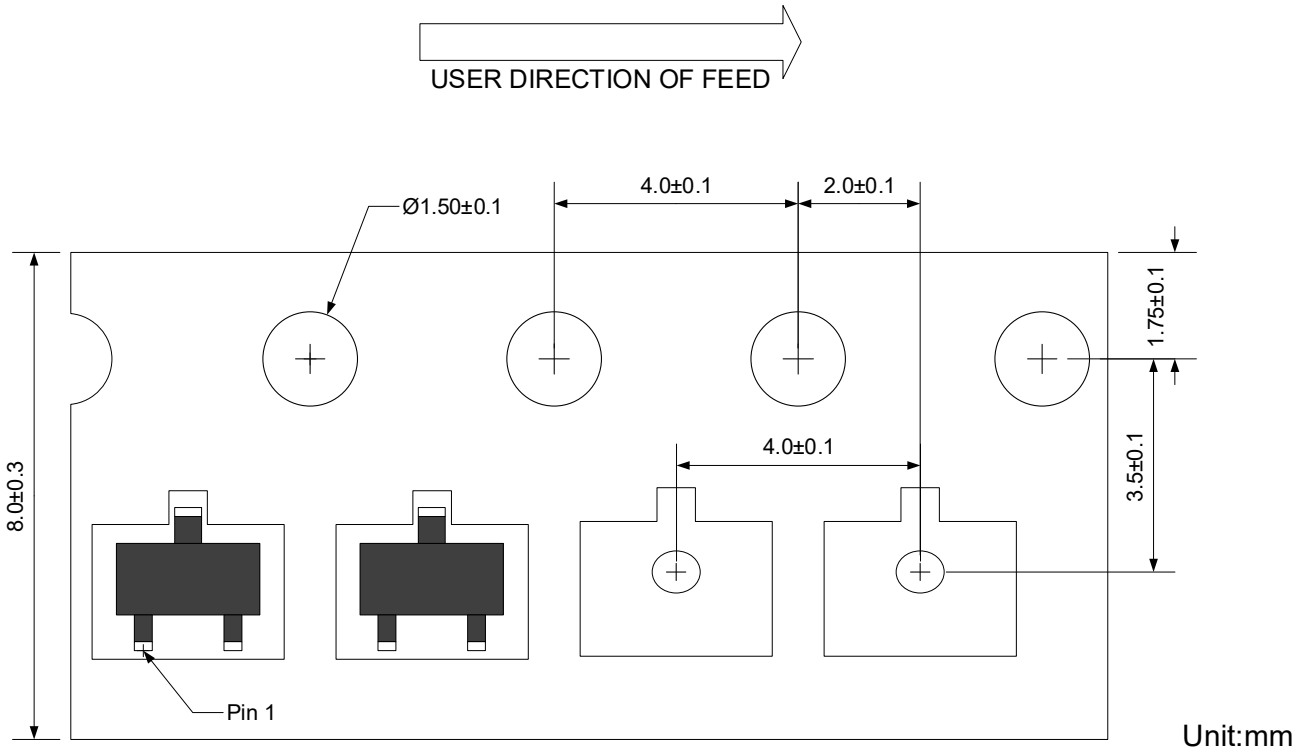


Remark: Pb free for 260℃; Pb for 245℃.

Ordering information

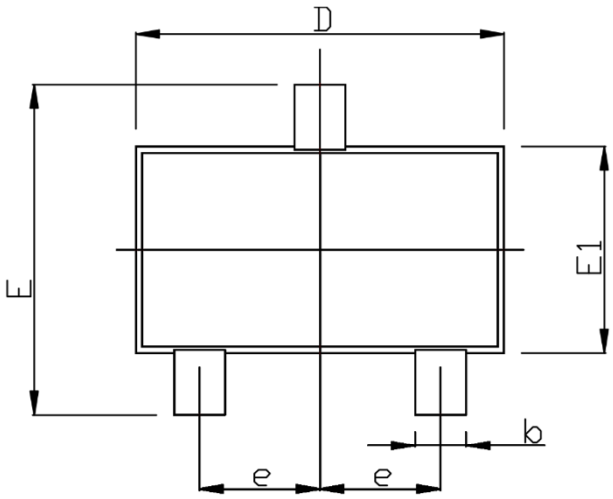
Package	Reel	Shipping
SOT-23	7"	3000 / Tape & Reel

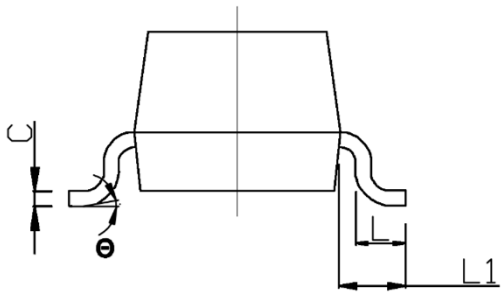
Load with information

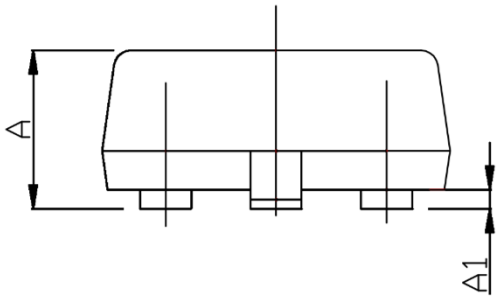


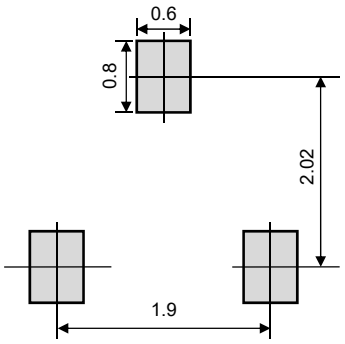
Unit:mm

Product Dimension (SOT-23)









Suggested PCB Layout

Unit: mm

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
b	0.30	0.50	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	2.25	2.55	0.089	0.100
E1	1.20	1.40	0.047	0.055
e	0.95 Typ.		0.037 Typ.	
L	0.30	0.50	0.012	0.020
L1	0.55 Ref.		0.022 Ref.	
θ	0°	8°	0°	8°

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