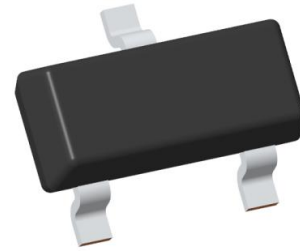


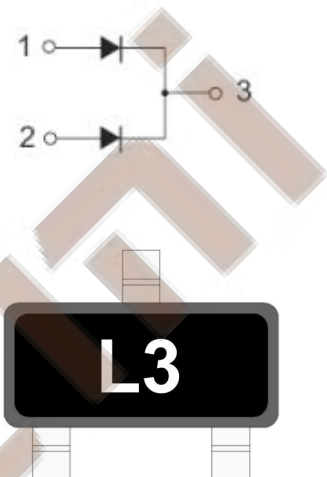
### General Characteristics

| $V_{RRM}$ | $V_{F(Max)}$ | $I_{FSM}$ | $T_{jMax}$ |
|-----------|--------------|-----------|------------|
| 30V       | 1.0V         | 600mA     | 125°C      |



### Features

- SOT23 Package
- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 3
- High temperature soldering guaranteed 260°C/10seconds at terminals
- Low Reverse Current
- Low Stored Charge, Majority Carrier Conduction
- Low Power Loss/High Efficiency



### Package Marking and Ordering Information

| Product ID | Package | Marking | Qty(PCS) |
|------------|---------|---------|----------|
| BAT54C     | SOT-23  | L3      | 3000     |

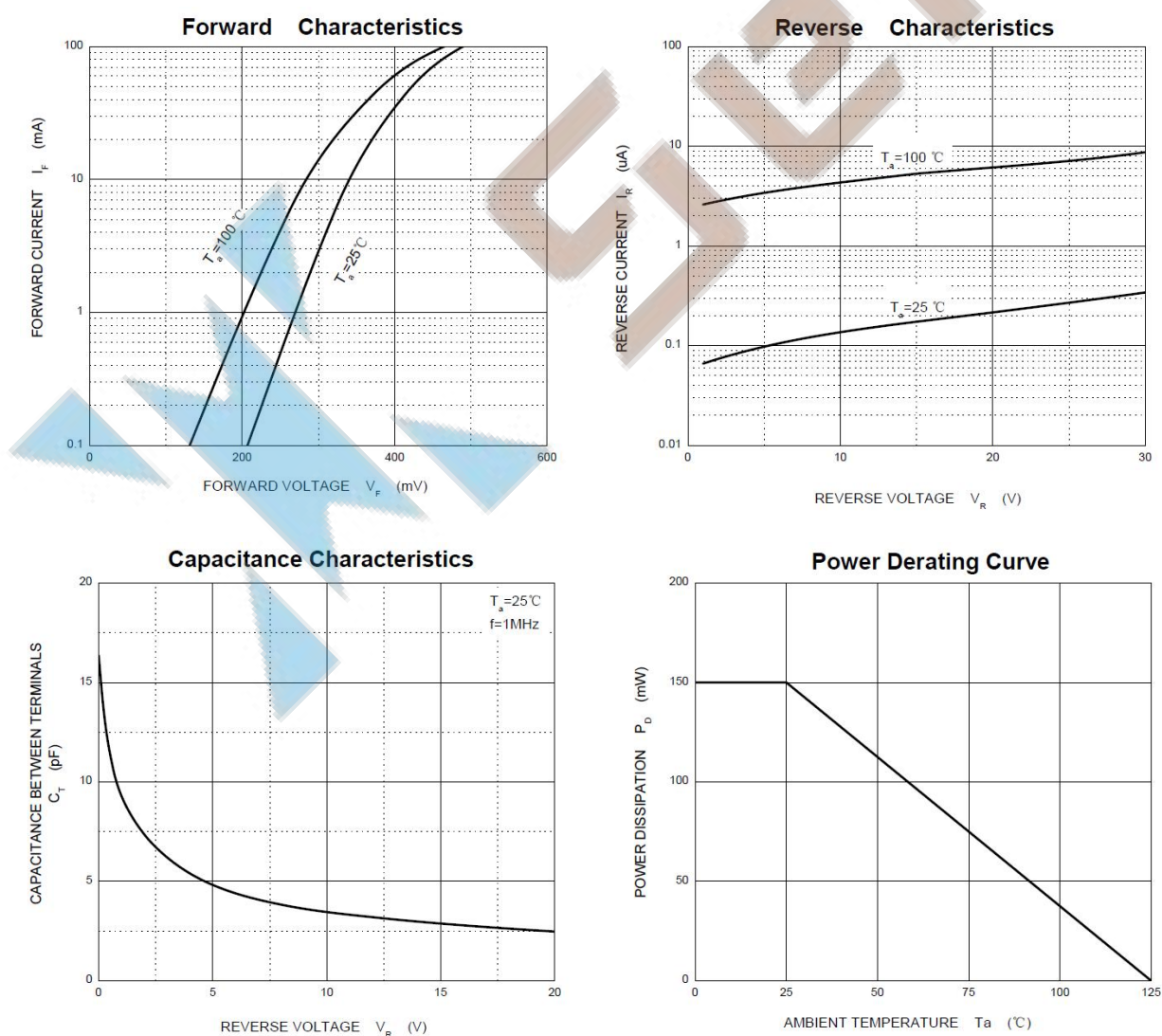
### Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

| Parameter                                            | Symbols         | Value    | Units |
|------------------------------------------------------|-----------------|----------|-------|
| Peak Repetitive Reverse Voltage                      | $V_{RRM}$       | 30       | V     |
| Working Peak Reverse Voltage                         | $V_{RWM}$       | 30       | V     |
| RMS Reverse Voltage                                  | $V_R(RMS)$      | 21       | V     |
| Power Dissipation                                    | $P_d$           | 200      | mW    |
| Operating junction temperature                       | $T_j$           | 125      | °C    |
| Storage temperature range                            | $T_s$           | -55-+150 | °C    |
| Average Rectified Output Current                     | $I_O$           | 200      | mA    |
| Repetitive Peak Forward Surge Current @t=8.3ms       | $I_{FSM}$       | 600      | mA    |
| Peak Forward Surge Current @tp=1s; $\delta \leq 0.5$ | $I_{FRM}$       | 1000     | mA    |
| Thermal resistance from Junction to Ambient          | $R_{\theta JA}$ | 500      | °C/W  |

### Electrical Characteristics (Ta=25°C, unless otherwise noted)

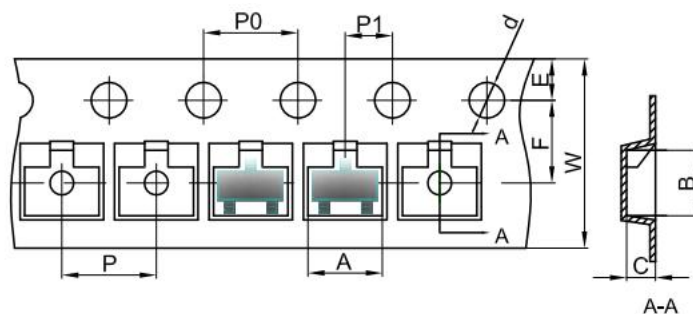
| Parameter               | Symbol | Conditions                          | Min. | Max. | Unit |
|-------------------------|--------|-------------------------------------|------|------|------|
| Reverse Voltage         | V(BR)  | IR=100uA                            | 30   | ---  | V    |
| Reverse Leakage Current | IR     | VR=25V                              | ---  | 2    | uA   |
| Forward Voltage         | VF     | IF=1mA                              | ---  | 0.32 | V    |
|                         |        | IF=10mA                             | ---  | 0.40 |      |
|                         |        | IF=30mA                             | ---  | 0.50 |      |
|                         |        | IF=100mA                            | ---  | 1.00 |      |
| Total Capacitance       | Ctot   | VR=1V, f=1MHZ                       | ---  | 10   | pF   |
| Reverse Recovery Time   | TRR    | IF= IR=10mA, RL=100 Ω<br>IRR=0.1xIR | ---  | 5    | nS   |

### Typical Characteristics



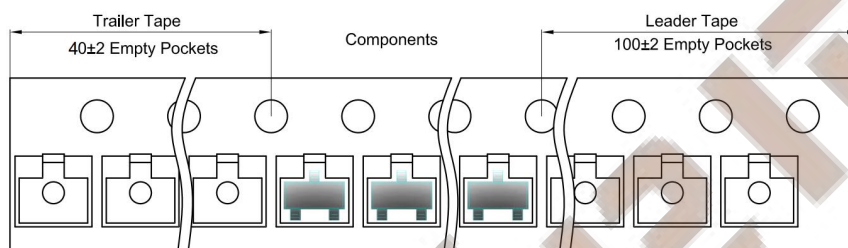
## Package Information

### Carrier Dimension(mm)

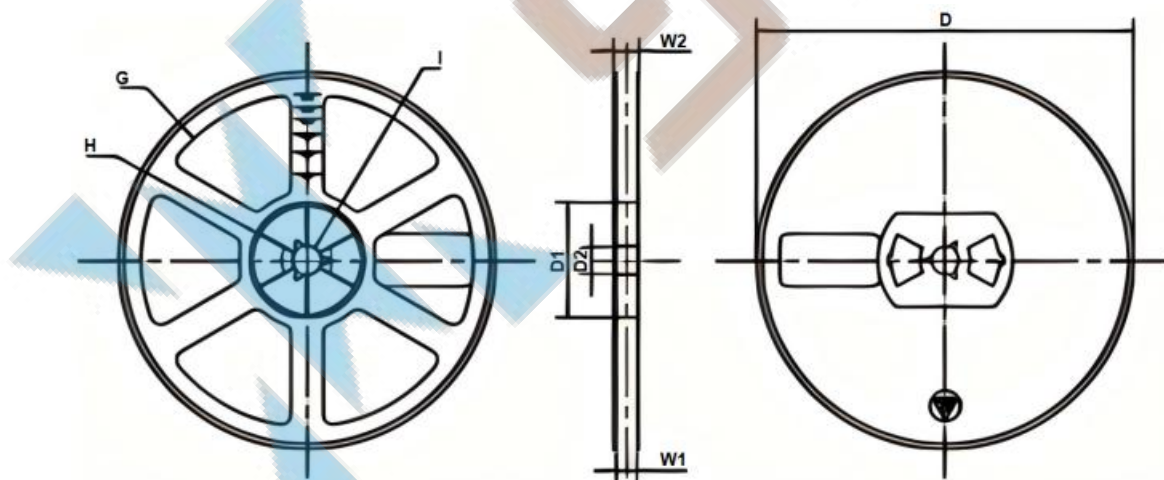


Dimensions are in millimeter

| Pkg Type    | A0   | A1   | B0   | B1   | K0   | D0   | D1   | E    | F    | P0   | P1   | P2   | 10*P0 | W    | T     |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|-------|
| SOT-23      | 3.15 | 1.09 | 2.77 | 2.15 | 1.22 | 1.55 | 1.00 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 40.00 | 8.00 | 0.20  |
| (Tolerance) | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.2  | ±0.1 | ±0.03 |



### Reel Dimension(mm)



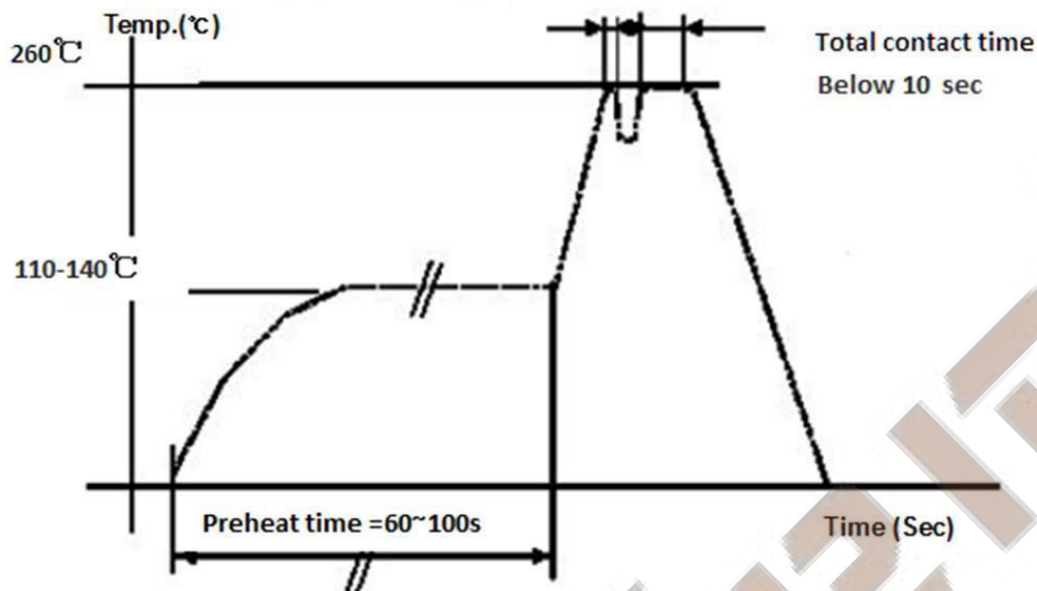
| Reel Option | D       | D1    | D2    | G      | H      | I     | W1   | W2    |
|-------------|---------|-------|-------|--------|--------|-------|------|-------|
| 7"Dia       | Φ178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |
| Tolerance   | ±2      | ±1    | ±1    | ±1     | ±1     | ±1    | ±1   | ±1    |

## Package Specifications

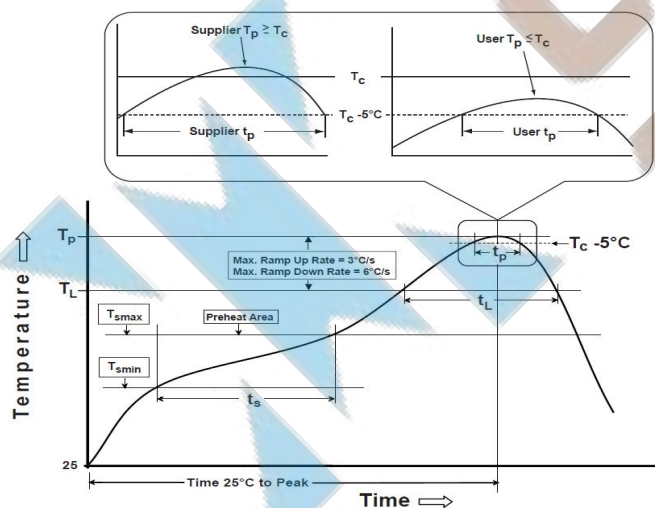
| Package | Reel Size | Reel DIA.<br>(mm) | Q'TY/Reel<br>(Kpcs) | Box Size<br>(mm) | QTY/Box<br>(Kpcs) | Carton Size<br>(mm) | Q'TY/Carton<br>(Kpcs) |
|---------|-----------|-------------------|---------------------|------------------|-------------------|---------------------|-----------------------|
| SOT23   | 7'        | 178               | 3                   | 210*208*203      | 45                | 440*400*230         | 180                   |

## Recommended Soldering Profile for Rectifier Diodes (Pb Free)

### a) Wave Soldering Profile



**b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020**

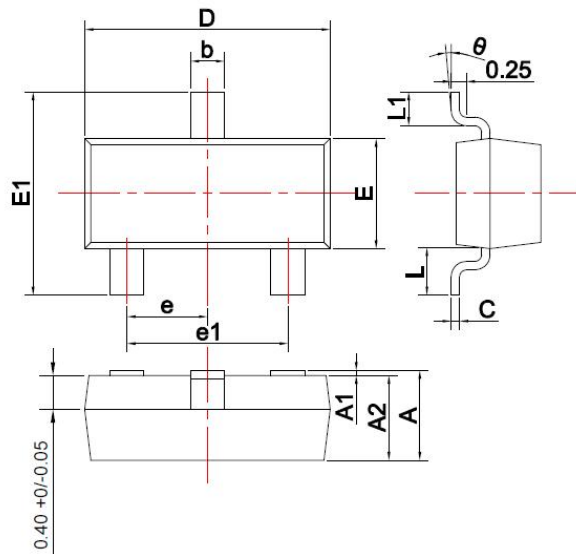


|                                                                                                                                                   |                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Preheat/Soak Temperature Min<br>(T <sub>min</sub> ) Temperature Max (T <sub>max</sub> )<br>Time (ts) from (T <sub>min</sub> to T <sub>max</sub> ) | 50 °C<br>200 °C<br>60-120 seconds |
| Melting Point of Solder (Sn Ag Cu)                                                                                                                | 217°C                             |
| Ramp-up Rate to 217°C (Melting Point of Solder)                                                                                                   | 3°C/sec                           |
| Time at Temp. > 217°C (Melting Point of Solder)                                                                                                   | 60~150 Sec                        |
| Peak Temperature                                                                                                                                  | 255±5°C                           |
| Time within 5°C below Peak Temp.                                                                                                                  | 20~40 Sec                         |
| Cooling Rate                                                                                                                                      | 6°C/sec (max)                     |
| Time from 25°C to Peak Temp.                                                                                                                      | 8min (max)                        |

### c) Manual Soldering

When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

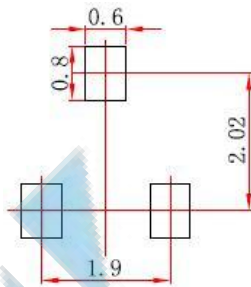
### Package Mechanical Data



| SYMBOL   | DIMENSIONS |       |
|----------|------------|-------|
|          | MIN.       | MAX.  |
| A        | 0.900      | 1.150 |
| A1       | 0.000      | 0.100 |
| A2       | 0.900      | 1.050 |
| b        | 0.300      | 0.500 |
| c        | 0.080      | 0.150 |
| D        | 2.800      | 3.000 |
| E        | 1.200      | 1.400 |
| E1       | 2.250      | 2.550 |
| e        | 0.950TYP   |       |
| e1       | 1.800      | 2.000 |
| L        | 0.550REF   |       |
| L1       | 0.300      | 0.500 |
| $\theta$ | 0°         | 8°    |

Unit: mm

### Suggested Pad Layout



Note:  
 1. Controlling dimension: In millimeters.  
 2. General tolerance:  $\pm 0.05\text{mm}$ .  
 3. The pad layout is for reference purposes only.

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