

SPECIFICATION SHEET

| | | |
|---|--|-------------------------------|
| SPECIFICATION SHEET NO. | R0605- BAT540S200S030 | |
| DATE | June 05, 2024 | |
| REVISION | A2 | Updated With Most Recent Data |
| DESCRIPTION AND MAIN PARAMETRICS | <p>SMD Schottky Diodes, Plastic- Encapsulate Diodes, 3 pads, Case SOT-23, BAT54 series, KL1 Type Pin Connection, Peak Repetitive Reverse Voltage 30V Max. Forward Continuous Current 0.2A Max. Operating Temp. Range -55°C ~+125°C, Package in Tape/Reel, 3000pcs/Reel RoHS III/REACH Compliant and Halogen Free (HF)</p> | |
| CUSTOMER | | |
| CUSTOMER PART NO. | | |
| CROSS REF. PART NO. | | |
| ORIGINAL MFG/PART NO. | MDD Diodes/BAT54 | |
| PART CODE | BAT540S200S030 | |

VENDOR APPROVE

Issued/Checked/Approved



DATE: June 05, 2024

CUSTOMER APPROVE

DATE:

SMD SCHOTTKY BARRIER DIODES BAT54 SERIES CASE SOT-23

MAIN FEATURE

- Low Forward Voltage Drop
- Extremely Fast Switching Speed
- Fast Switching Time
- Surface Mount Package Ideally Suited For Automatic Insertion
- Cross Competitors Parts and More.
- REACH/RoHS III Complaint and Halogen Free



APPLICATION

- For General Purpose Switching Applications

ELECTRICAL CHARACTERISTICS

- See Page 4~ Page 6

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate Pat Code When You Order Or RFQ For Custom Specification

PART CODE GUIDE

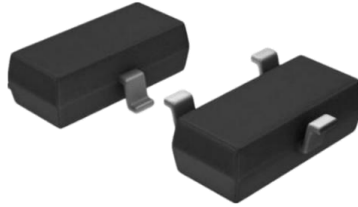
RFQ
Request For Quotation

| CODE | NAME | KEY SPECIFICATION OPTION |
|-------|--------------------------|---|
| BAT54 | Product Series Code | SMD Schottky Diodes, Forward Current 0.2A. Reverse Voltage 30V |
| 0 | Marking Code | 0: KL1 Type Pin Connection; A: KL2 Type Pin Connection; C: KL3 Type Pin Connection; S: KL4 Type Pin Connection |
| S2 | Case Code | S2: Case SOT-23 |
| 00S | Internal Control Code | Custom letter A~Z, a-z or Digits (0-9) |
| 030 | DC Blocking Voltage Code | 020: 20V; 030: 30V; 040: 40V; |

SMD SCHOTTKY BARRIER DIODES BAT54 SERIES CASE SOT-23

DIMENSION (Unit: Inch/mm)

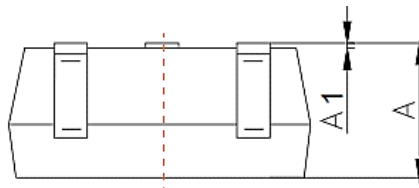
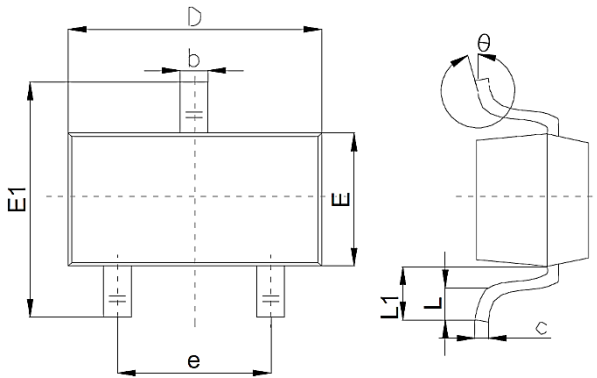
Image for reference



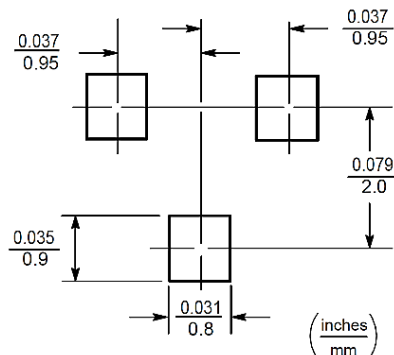
Marking:

See Page -4 Marking List
For different Part code

SOT-23



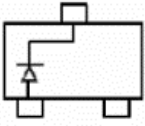
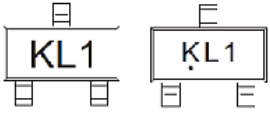
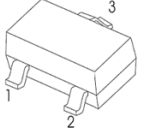
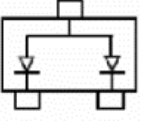
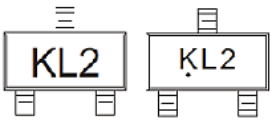
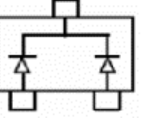
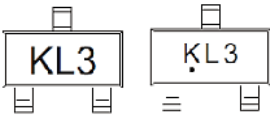
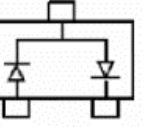

Recommend Pad Layout



| Symbol | Value (mm) | | |
|--------|--------------|------|------|
| | Min. | Typ. | Max. |
| A | 0.9 | | 1.4 |
| A1 | | | 0.10 |
| b | 0.30 | | 0.50 |
| c | 0.08 | | 0.20 |
| D | 2.80 | 2.90 | 3.10 |
| E | 1.20 | | 1.60 |
| E1 | 2.25 | | 2.80 |
| e | 1.8 | 1.9 | 2.00 |
| L | 0.10 | | 0.50 |
| L1 | 0.40 | | |
| θ | 0° | | 10° |

SMD SCHOTTKY BARRIER DIODES BAT54 SERIES CASE SOT-23

PIN CONNECTION AND MARKING LIST – For Different Part Code

| PART CODE | PIN CONNECTION TYPE CODE | PIN CONNECTION | MARKING | PIN FUNCTION |
|----------------|-----------------------------|---|---|--|
| BAT540S200S030 | KL1 |  |  |  1. Base 2. Emitter 3. Collector |
| BAT54AS200S030 | KL2 |  |  | |
| BAT54CS200S030 | KL3 |  |  | |
| BAT54SS200S030 | KL4 |  |  | |

Note:

Solid Dot = Green Molding Compound Device, If None, The Normal Device

SMD SCHOTTKY BARRIER DIODES BAT54 SERIES CASE SOT-23
MECHANICAL DATA

| CASE | TERMINALS | POLARITY | MOUNTING POSITION | WEIGHT PER PIECE |
|--|--|------------------------------------|-------------------|--------------------------------|
| JEDEC SOT-23 Molded Plastic Body | Solder Plated, Solderable Per MIL-STD-750, Method 2026 | Polarity Symbol Marking On Case | Any | 0.00019 Ounce, 0.0055 grams |

MAXIMUM RATINGS - @ 25 °C

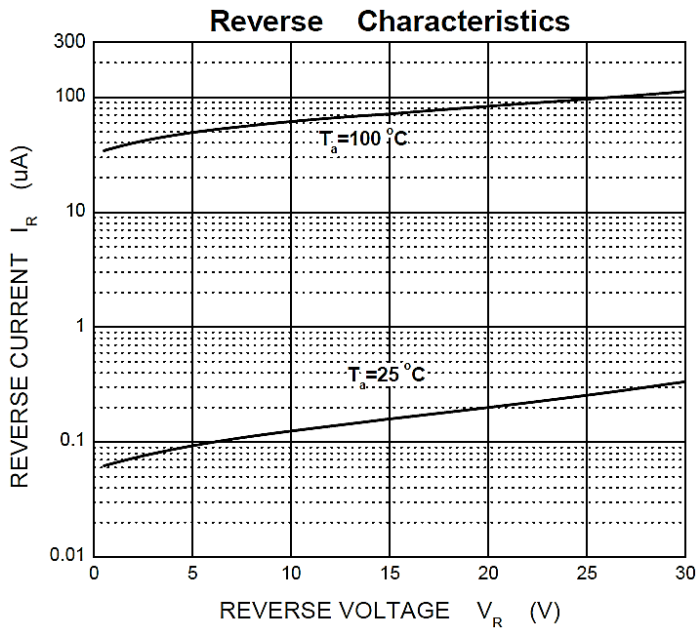
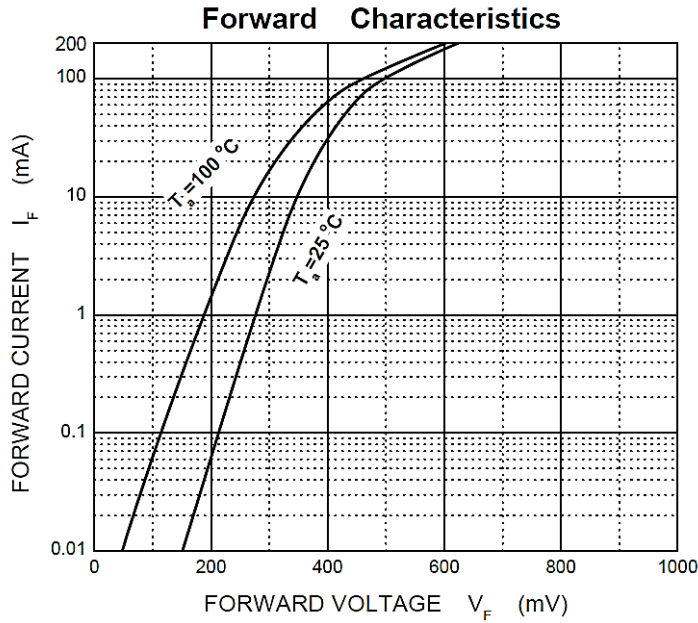
| PARAMETER | SYMBOLS | VALUE | UNITS |
|--|---------|------------|-------|
| Peak Repetitive Reverse Voltage | VRRM | 30 | V |
| Working Peak Reverse Voltage | VRWM | | |
| DC Blocking Voltage | VR | | |
| Forward Continuous Current | IFM | 0.2 | A |
| Non-repetitive Peak Forward Surge Current @ t=8.3ms | IFSM | 0.6 | A |
| Repetitive Peak Forward Current @ t≤1s,δ≤0.5 | IFRM | 0.3 | A |
| Power Dissipation | PD | 200 | mW |
| Thermal Resistance junction To Ambient Air | RθJA | 500 | °C/W |
| Junction Temperature Range | TJ | -55 ~ +125 | °C |
| Storage Temperature Range | TSTG | -55 ~ +150 | °C |

SMD SCHOTTKY BARRIER DIODES BAT54 SERIES CASE SOT-23
ELECTRICAL CHARACTERISTICS - @ 25 °C

| PARAMETER | SYMBOLS | VALUE | | | UNIT | CONDITION |
|-----------------------|-----------------|-------|------|------|------|--|
| | | MIN. | TYP. | MAX. | | |
| Reverse Voltage | V _{BR} | 30 | | | V | I _R =100uA |
| Forward Voltage | V _F | | | 0.24 | V | I _{F1} =0.1mA |
| | | | | 0.32 | | I _{F2} =1mA |
| | | | | 0.40 | | I _{F3} =10mA |
| | | | | 0.50 | | I _{F4} =30mA |
| | | | | 1 | | I _{F5} =100mA |
| Reverse Current | I _R | | | 2.0 | uA | V _R =25V |
| Diode Capacitance | C _t | | | 10 | pF | V _R =0V, f=1MHz |
| Reverse Recovery Time | t _{rr} | | | 5.0 | ns | I _F =I _R =10mA I _{rr} =0.1 x I _R ; R _L =100Ω |

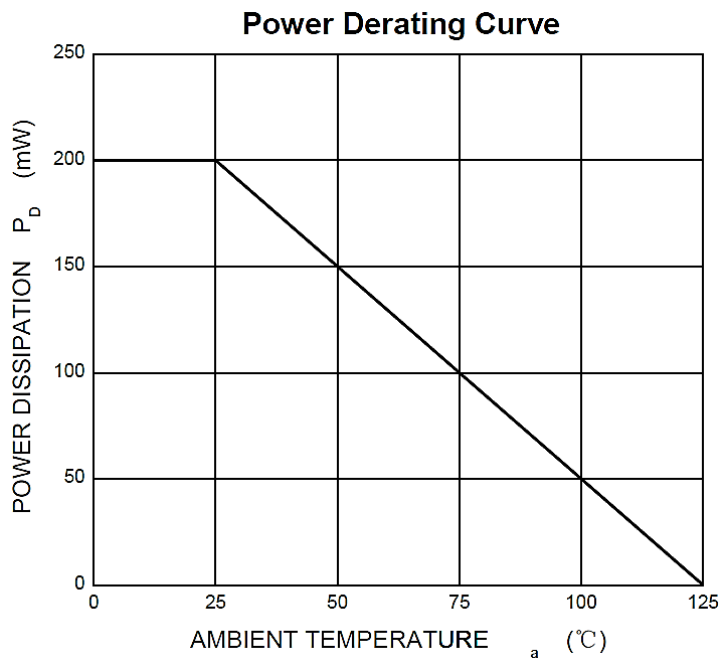
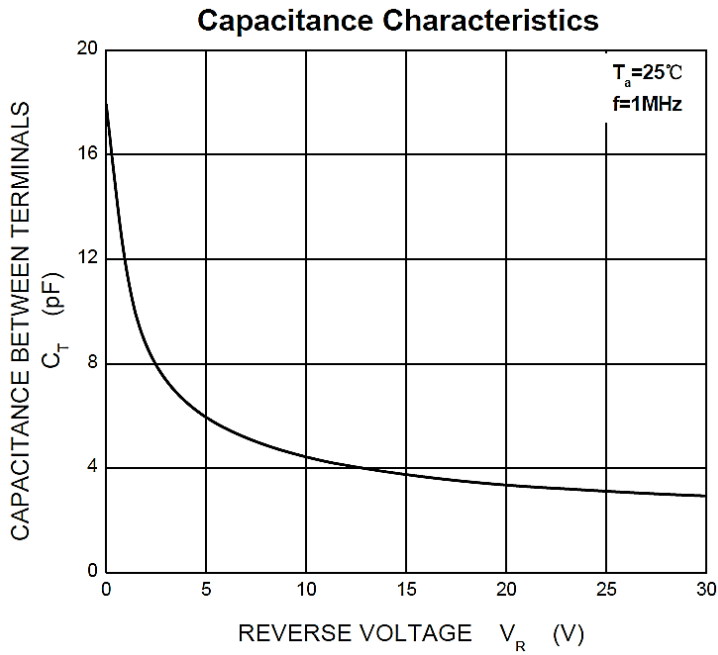
SMD SCHOTTKY BARRIER DIODES BAT54 SERIES CASE SOT-23

TYPICAL CHARACTERISTIC CURVES - For Reference Only



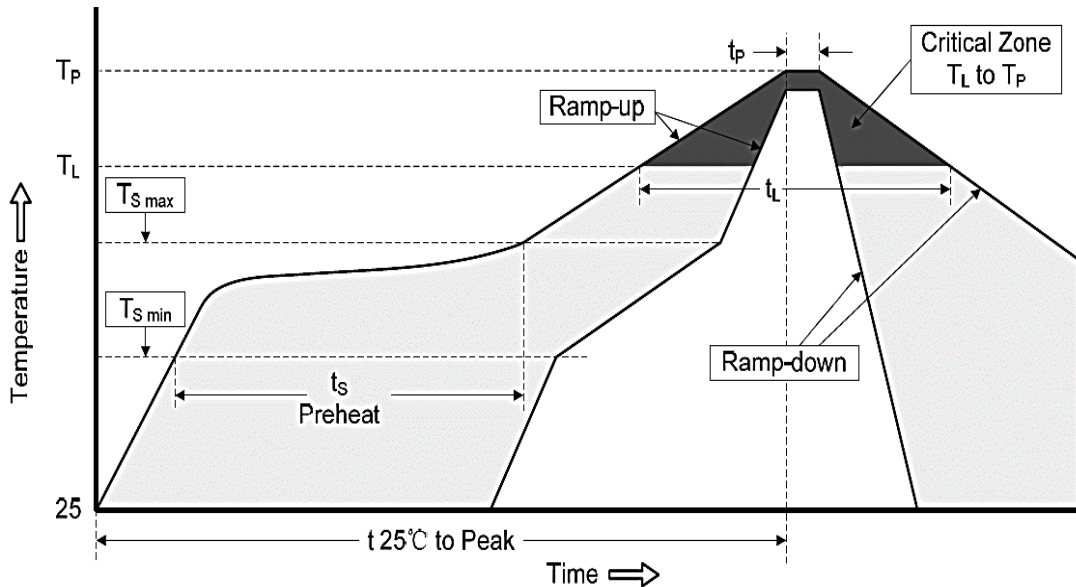
SMD SCHOTTKY BARRIER DIODES BAT54 SERIES CASE SOT-23

TYPICAL CHARACTERISTIC CURVES - For Reference Only



SMD SCHOTTKY BARRIER DIODES BAT54 SERIES CASE SOT-23

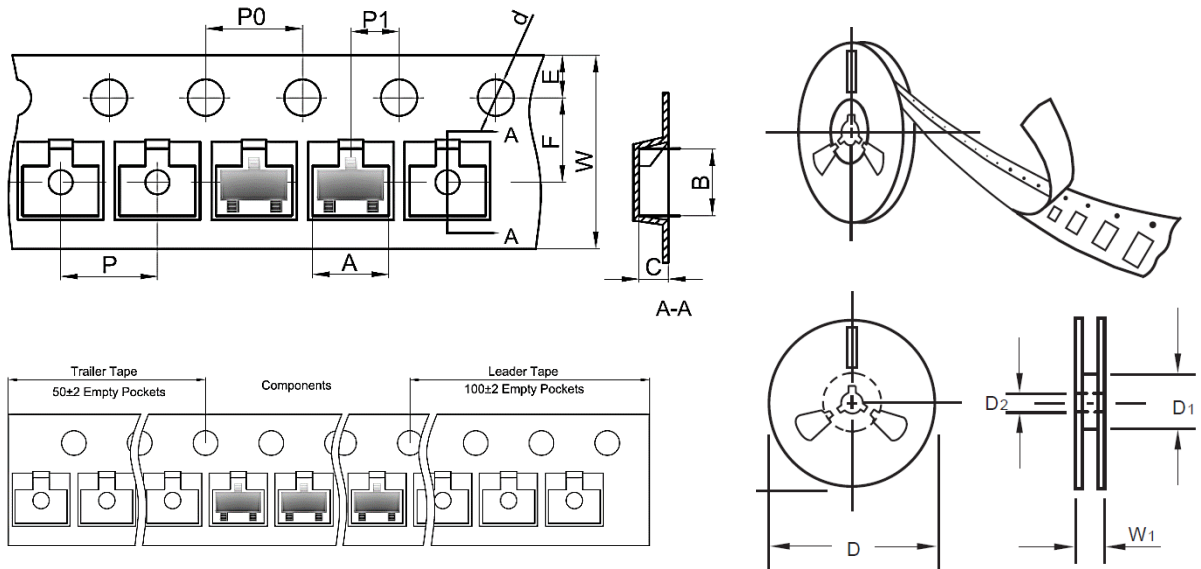
SUGGESTED REFLOW PROFILE - For Reference Only



| PROFILE FEATURE | | PB-FREE ASSEMBLY |
|---|---------------------------|-------------------|
| Average Ramp-up Rate (Ts Max to Tp) | | 3°C/second Max |
| Preheat | Temperature Min (Ts Min.) | 150°C |
| | Temperature Max (Ts Max.) | 200°C |
| | Time (ts Min. to ts Max.) | 60 ~ 180 seconds |
| Time maintained above | Temperature (Tl) | 217°C |
| | Time (tl) | 60 ~ 150 seconds |
| Peak/Classification Temperature (Tp) | | 260 °C |
| Time within 5°C of actual Peak Temperature (tp) | | 20 ~ 40 seconds |
| Ramp-down rate | | 6 °C /Second Max. |
| Time 25 °C to Peak Temperature | | 8 minutes Max. |
| Suggest reflow times | | 3 Times Max. |

SMD SCHOTTKY BARRIER DIODES BAT54 SERIES CASE SOT-23
TAPE/REEL - Unit: mm

All Devices are packed in accordance with EIA standard RS-481-A and specifications.



| ITEM | SYMBOL | TOLERANCE | SOT-23 |
|--------------------------|--------------|-----------|--------|
| Carrier width | A | 0.1 | 3.15 |
| Carrier Length | B | 0.1 | 2.77 |
| Carrier Depth | C | 0.1 | 1.22 |
| Sprocket hole | d | 0.05 | 1.55 |
| 7" Reel outside diameter | D | 2.0 | 178.00 |
| 7" Reel inner diameter | D1 | Min. | 54.4 |
| Feed hole diameter | D2 | 0.5 | 13.00 |
| Sprocket hole position | E | 0.1 | 1.75 |
| Punch hole position | F | 0.1 | 3.50 |
| Punch hole pitch | P | 0.1 | 4.00 |
| Sprocket hole pitch | P0 | 0.1 | 4.00 |
| Embossment center | P1 | 0.1 | 2.00 |
| Overall tape thickness | T | 0.1 | 0.25 |
| Tape width | W | 0.3 | 8.00 |
| Reel width | W1 | 1.0 | 19.50 |
| MPQ/Reel | 3000pcs/Reel | | |

SMD SCHOTTKY BARRIER DIODES BAT54 SERIES CASE SOT-23

IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
4. NextGen Component, Inc (*NextGen*) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
5. *NextGen* makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, not does *NextGen* assume any liability for application assistance or customer product design.
6. *NextGen* does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application. No license is granted by implication or otherwise under any intellectual property rights of NextGen.
7. *NextGen* products are not authorized for use as critical components in life support devices or systems without express written approval by *NextGen*.
8. *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.