

BAS19 THRU BAS21

Small Signal Diodes 250mW

Features

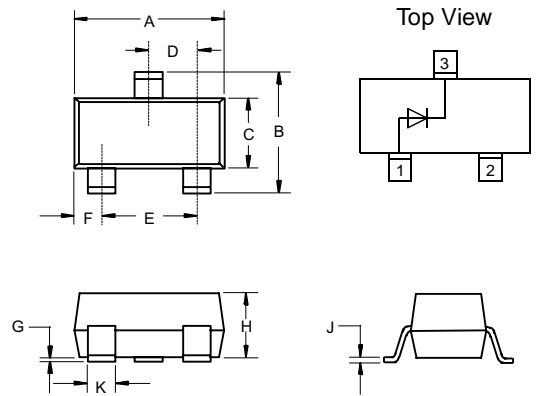
- Ideally Suited for Automatic Insertion
- 150°C Junction Temperature
- Fast Switching speed
- Epitaxial Planar Die Construction

Mechanical Data

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Weight: 0.008 grams (approx.)

| MCC Part Number | Marking | Continuous Reverse Voltage V_R (V) | Repetitive Peak Reverse Voltage V_{RRM} (V) |
|-----------------|---------|--------------------------------------|---|
| BAS19 | JP | 100 | 120 |
| BAS20 | JR | 150 | 200 |
| BAS21 | JS | 200 | 250 |

SOT-23



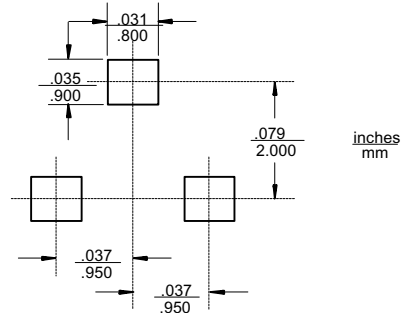
| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .110 | .120 | 2.80 | 3.04 | |
| B | .083 | .098 | 2.10 | 2.64 | |
| C | .047 | .055 | 1.20 | 1.40 | |
| D | .035 | .041 | .89 | 1.03 | |
| E | .070 | .081 | 1.78 | 2.05 | |
| F | .018 | .024 | .45 | .60 | |
| G | .0005 | .0039 | .013 | .100 | |
| H | .035 | .044 | .89 | 1.12 | |
| J | .003 | .007 | .085 | .180 | |
| K | .015 | .020 | .37 | .51 | |

Maximum Ratings @ 25°C Unless Otherwise Specified

| Parameter | Symbol | Value | Unit |
|--|-----------------|--------------------|------|
| Non-repetitive Peak Forward Surge Current @ $t=1\mu s$ | I_{FSM} | 2.5 | A |
| Average Rectified Forward Current | $I_{F(AV)}$ | 200 ⁽¹⁾ | mA |
| Forward DC Current at $T_{amb}=25^\circ C$ | I_F | 200 ⁽²⁾ | mA |
| Repetitive Peak Forward Current | I_{FRM} | 625 | mA |
| Power Dissipation up to $T_{amb}=25^\circ C$ | P_{tot} | 250 | mW |
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 430 | °C/W |
| Operating & Storage Temperature | T_j, T_{STG} | -65~150 | °C |

- Notes:** (1) Measured under pulse conditions;
 Pulse time = $t_p \leq 0.3ms$
 (2) Device on fiberglass substrate,
 See layout on next page

Suggested Solder Pad Layout



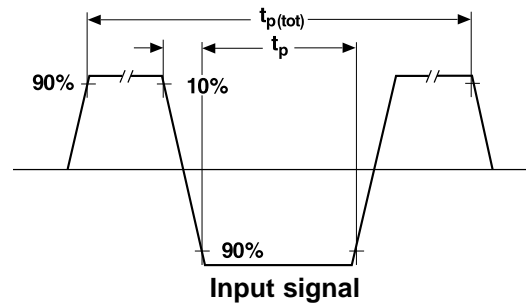
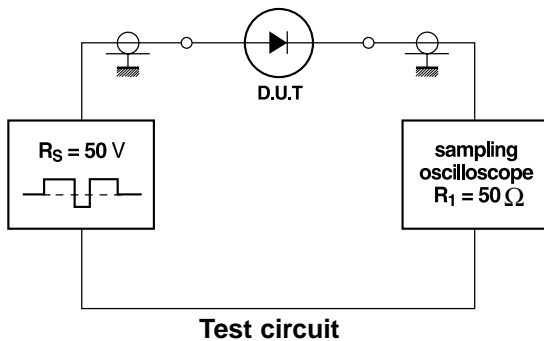
BAS19 thru BAS21

Electrical Characteristics (T_J = 25°C unless otherwise noted)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|-------------------------------------|------------------|--|-----|-----|------|------|
| Forward Voltage | V _F | I _F = 100mA | — | — | 1.0 | V |
| | | I _F = 200mA | — | — | 1.25 | V |
| Leakage Current | I _R | V _R = V _{Rmax} | — | — | 100 | nA |
| | | V _R = V _{Rmax} ; T _j = 150°C | — | — | 100 | μA |
| Dynamic Forward Resistance | r _f | I _F = 10mA | — | 5 | — | Ω |
| Capacitance | C _{tot} | V _R = 0 f = 1MHz | — | — | 5 | pF |
| Reverse Recovery Time (see figures) | t _{rr} | I _F = 30mA, I _R = 30mA I _{rr} = 3mA, R _L = 100Ω | — | — | 50 | ns |

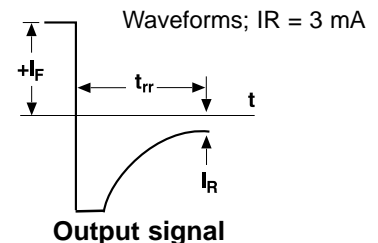
(1) Device on fiberglass substrate, see layout (SOT-23).

Test Circuit and Waveforms (BAS19, BAS20, BAS21)



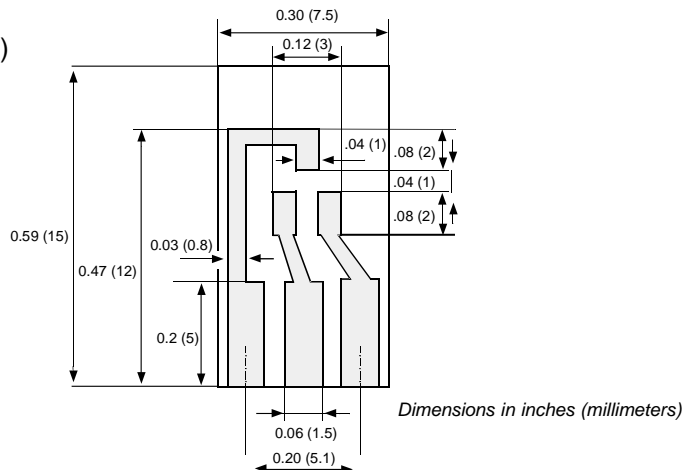
| | | |
|--------------|---|---|
| Input Signal | - total pulse duration - duty factor - rise time of reverse pulse - reverse pulse duration | tp(tot) = 2μs δ = 0.0025 tr = 0.6ns tp = 100ns |
| Oscilloscope | - rise time - circuit capacitance* | tr = 0.35ns C < 1pF |

*C = oscilloscope input capacitance + parasitic capacitance



Layout for R_{ΘJA} test

Thickness: Fiberglass 0.059 in. (1.5 mm)
Copper leads 0.012 in. (0.3 mm)





Micro Commercial Components

Ordering Information :

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

*****IMPORTANT NOTICE*****

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp .** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp .** and all the companies whose products are represented on our website, harmless against all damages.

*****LIFE SUPPORT*****

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

*****CUSTOMER AWARENESS*****

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.