Micro Commercial Components

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# BAS40 THRU BAS70

## Surface Mount Schottky Barrier Diode 200 mWatt

## Features

- SOT-23 Package For surface mount application
- Protects from line to $V_{CC}$ and line to ground
- Low forward voltage and reverse recovery characteristics
- Bidirectional-low-forward available with " -04" suffix (Figure 2)
- Tape & Reel EIA Standard 481.

## Mechanical Data

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"
- Mounting Position: Any
- Weight: .008 grams (approx.)

## MAXIMUM RATINGS

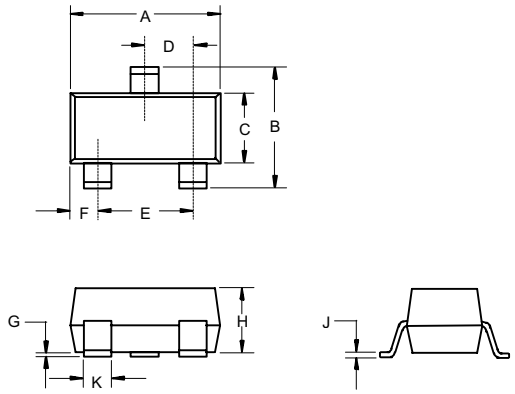
- Operating Temperature: -55°C to +125°C
- Storage Temperature: -55°C to +150°C
- Power Dissipation: 200 mWatts @ $T_{amb}$=25°C
- Forward Continuous Current: BAS40 $I_F$ =200mA@ $T_a$=25°C; BAS70 $I_F$ =70mA @ $T_a$=25°C
- Surge Forward Current: BAS40 $I_{FSM}$=600mA @ tp<1s, Tamb=25°C; BAS70 $I_{FSM}$=100mA @ tp<1s, Tamb=25°C

## DESCRIPTION

Various configurations of Schottky barrier' s diodes in SOT-23 package are provided for general-purpose use in high-speed switching ,mixers and detector applications. They may also be used for signal integrity and counteract the transmission-line effects with (PC) board trances by clamping over/and undershoot from signal reflections with the schottky-low-threshold voltages.

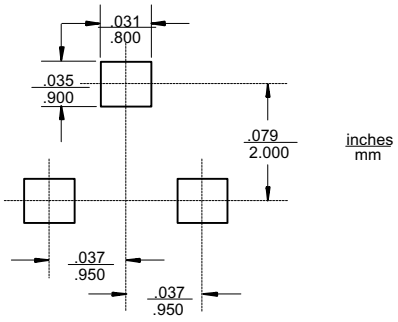
This type of termination also does not depend on matching the transmission line characteristic impedance, making it particularly useful where line impendance is unknown or a variable. This methode of termination can control distortions of clock, data, address, and control lines as well as provides a stabilizing effect on signal jitter. It can also significantly reduce power consumption compared to standard resistor-based termination methods.

SOT-23




| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| | INCHES | | MM | | |
| DIM | MIN | MAX | MIN | MAX | NOTE |
| A | .110 | .120 | 2.80 | 3.04 | |
| B | .083 | .104 | 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 | |

Suggested Solder Pad Layout



## ELECTRICAL CHARACTERISTICS PER DIODE @ 25$^0$C Unless otherwise specified

| DEVICE TYPE | DEVICE MARKING | FIGURE | Repetitive Peak Reverse Voltage $V_{RRM}$ (VOLTS) | Reverse Breakdown Voltage Tested with 10µA Pulse $V_{(BR)R}$ (VOLTS) | Leakage Current Pulse test tp < 300µs @ For BAS40 $V_R$ = 30 V For BAS70 $V_R$ = 50 V $I_R$ (nA) | | Forward Voltage Pulse Test tp < 300µs at $I_F$ = 1 mA at $I_F$ = 40 mA $V_F$ (mV) | | | Reverse Recovery Time from $I_F$ = 10 mA through $I_R$=10mA to $I_R$=1mA $t_{rr}$ (ns) | Thermal Resistance Junction to Ambient Air $R_{thJA}$ (K/W) | Capacitance At $V_R$ = 0V F = 1 MHz $C_{tot}$ pF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TYP | MIN | TYP | MAX | $I_F$=1mA | $I_F$=15mA | $I_F$=40mA | MAX | MAX | MAX |
| BAS40 | 43 | 1 | 40 | 40 | 10 | 200 | 380 | | 1000 | 5 | 430 | 5 |
| BAS40-04 | 44 | 2 | 40 | 40 | 10 | 200 | 380 | | 1000 | 5 | 430 | 5 |
| BAS40-05 | 45 | 3 | 40 | 40 | 10 | 200 | 380 | | 1000 | 5 | 430 | 5 |
| BAS40-06 | 46 | 4 | 40 | 40 | 10 | 200 | 380 | | 1000 | 5 | 430 | 5 |
| BAS70 | 73 | 1 | 70 | 70 | 10 | 200 | 410 | 1000 | | 5 | 430 | 2 |
| BAS70-04 | 74 | 2 | 70 | 70 | 10 | 200 | 410 | 1000 | | 5 | 430 | 2 |
| BAS70-05 | 75 | 3 | 70 | 70 | 10 | 200 | 410 | 1000 | | 5 | 430 | 2 |
| BAS70-06 | 76 | 4 | 70 | 70 | 10 | 200 | 410 | 1000 | | 5 | 430 | 2 |

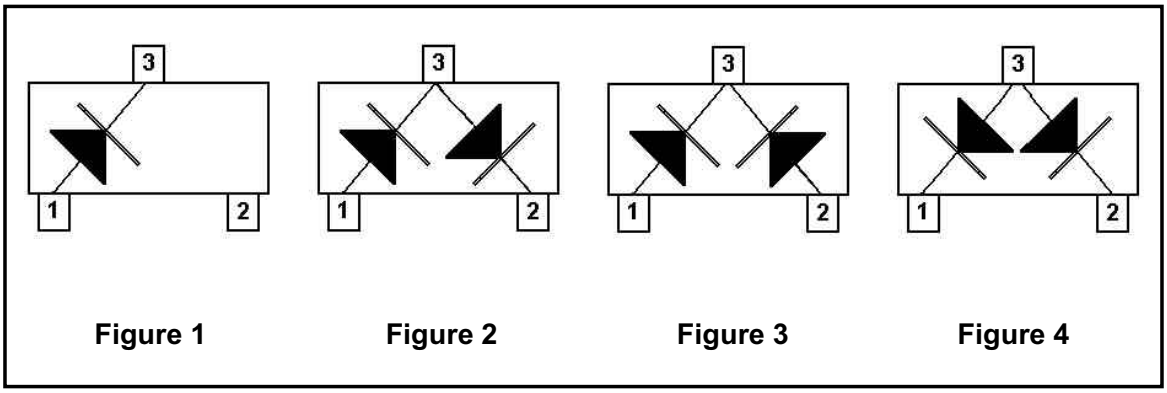



**Figure 1** **Figure 2** **Figure 3** **Figure 4**

## Typical Characteristics

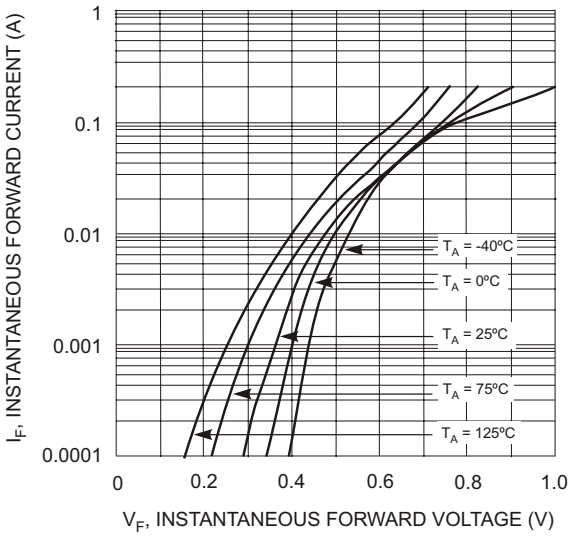



Fig. 1 Typical Forward Voltage

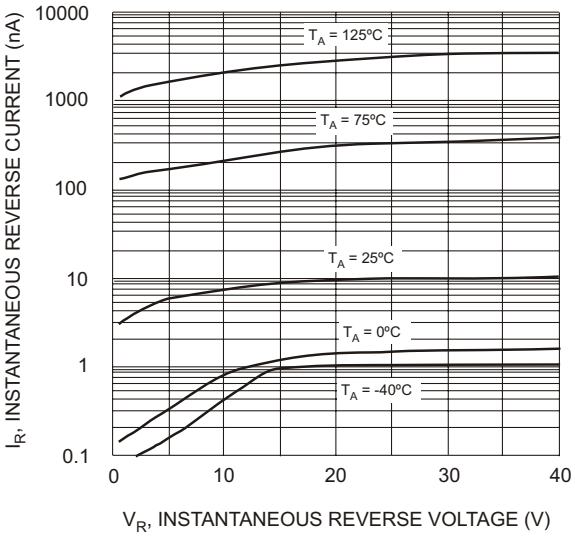



Fig. 2 Typical Reverse Characteristics

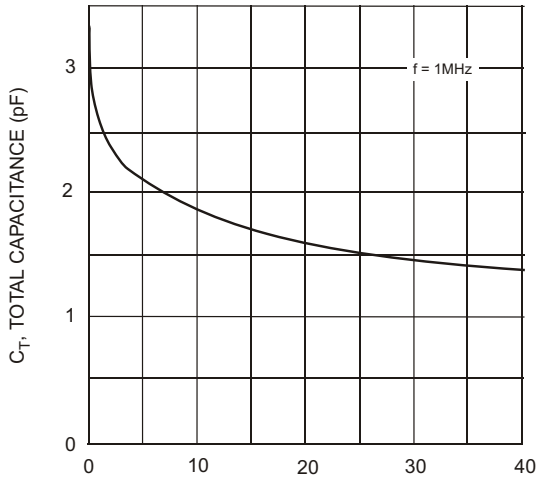



Fig. 3 Typical Capacitance

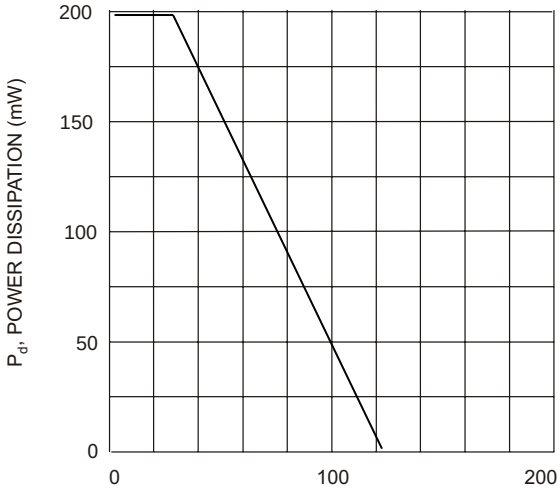



Fig. 4 Power Derating Curve, Total Package

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## Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF


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