



# BAS316

## High Speed Switching Diode 400mW

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Surface Mount Package Ideally Suited for Automatic Insertion
- High switching speed: max. 4ns
- Continuous reverse voltage: max. 100V
- Repetitive peak reverse voltage: max. 100V
- Repetitive peak forward current: max. 500mA
- Halogen free available upon request by adding suffix "-HF"

### Mechanical Data

- Marking: A6
- Polarity: Indicated by Cathode Band

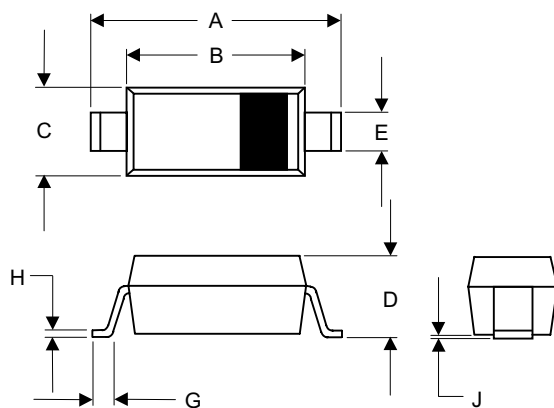
Maximum Ratings @ 25°C Unless Otherwise Specified

| Parameter                           | Symbol         | Limits   | Unit |
|-------------------------------------|----------------|----------|------|
| DC Reverse Voltage                  | $V_R$          | 100      | V    |
| Forward Current                     | $I_F$          | 250      | mA   |
| Total Device Dissipation            | $P_D$          | 400      | mW   |
| Junction and Storage temperature    | $T_j, P_{stg}$ | -65~+150 | °C   |
| Non-repetitive peak forward current | $I_{FSM}$      | 4        | A    |
| $t=1\mu s$                          |                | 1        |      |
| $t=1ms$                             |                | 0.5      |      |

### Electrical Characteristics @ 25°C Unless Otherwise Specified

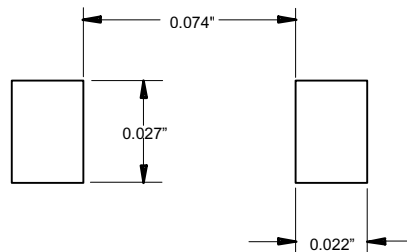
| Parameter                 | Symbol   | Test Condions                            | MIN | MAX  | UNIT |
|---------------------------|----------|--|-----|------|------|
| Reverse breakdown voltage | $V_{BR}$ | $I_R=100\mu A$                           | 100 | ...  | V    |
| Forward voltage           | $V_F$    | $I_F=1mA$                                | ... | 715  | mV   |
|                           |          | $I_F=10mA$                               | ... | 855  |      |
|                           |          | $I_F=50mA$                               | ... | 1000 |      |
|                           |          | $I_F=150mA$                              | ... | 1250 |      |
| Reverse leakage current   | $I_R$    | $V_R=25V$                                | ... | 0.03 | uA   |
|                           |          | $V_R=75V$                                | ... | 1    |      |
| Reverse recovery time     | $T_{rr}$ | $I_F=I_R=10mA_{dc}$ ,<br>$R_L=100\Omega$ | ... | 4    | ns   |
| Diode capacitance         | $C_D$    | $V_R=0V, f=1MHz$                         | ... | 1.5  | pF   |

### SOD-323



| DIM | INCHES |      | MM    |      | NOTE |
|-----|--------|------|-------|------|------|
|     | MIN    | MAX  | MIN   | MAX  |      |
| A   | .090   | .107 | 2.30  | 2.70 |      |
| B   | .063   | .071 | 1.60  | 1.80 |      |
| C   | .045   | .053 | 1.15  | 1.35 |      |
| D   | .031   | .045 | 0.80  | 1.15 |      |
| E   | .010   | .016 | 0.25  | 0.40 |      |
| G   | .004   | .018 | 0.10  | 0.45 |      |
| H   | .004   | .010 | 0.10  | 0.25 |      |
| J   | -----  | .006 | ----- | 0.15 |      |

#### SUGGESTED SOLDER PAD LAYOUT



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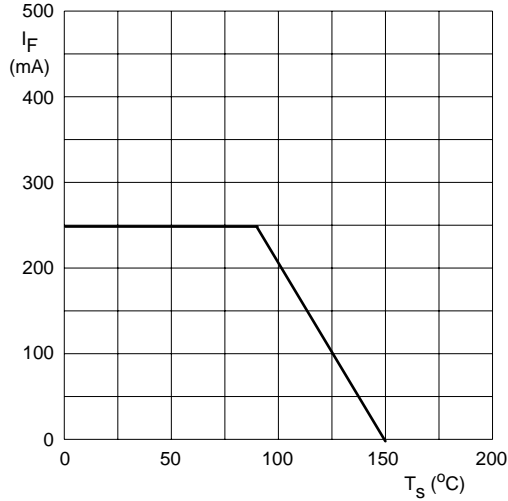


Fig.1 Maximum permissible continuous forward current as a function of soldering point temperature.

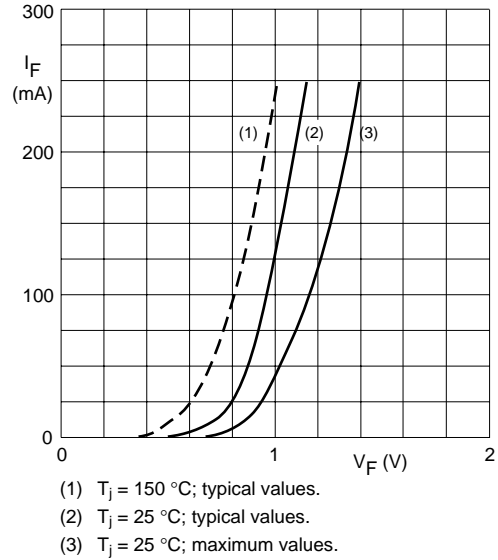
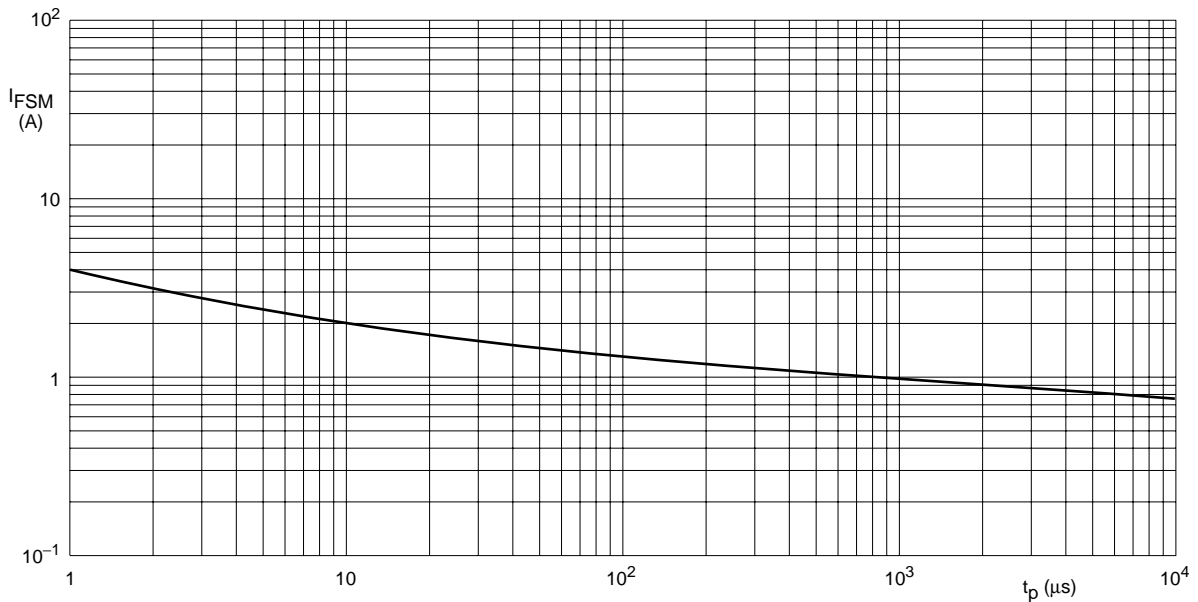


Fig.2 Forward current as a function of forward voltage.



Based on square wave currents.  
 $T_j = 25^\circ\text{C}$  prior to surge.

Fig.3 Maximum permissible non-repetitive peak forward current as a function of pulse duration.

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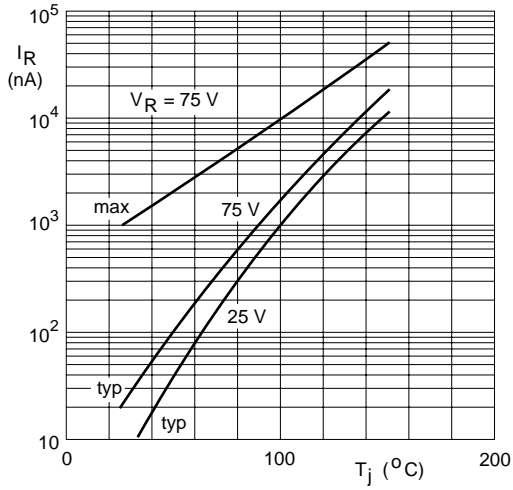
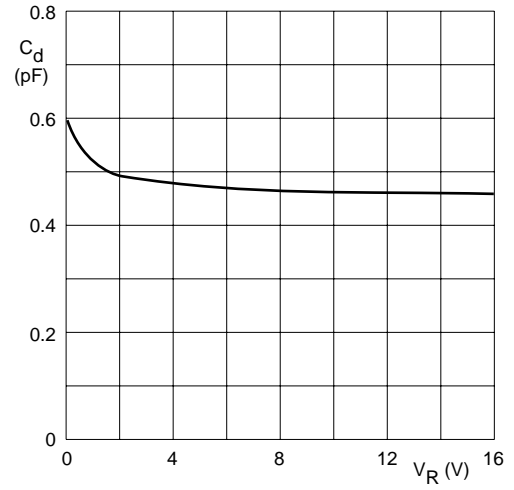


Fig.4 Reverse current as a function of junction temperature.



$f = 1$  MHz;  $T_j = 25$  °C.

Fig.5 Diode capacitance as a function of reverse voltage; typical values.



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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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