www.omseni.com

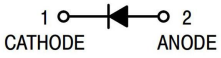
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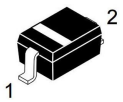
# BAS20HT1G

## High Voltage Switching Diode

- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

**HIGH VOLTAGE SWITCHING DIODE**




**SOD−323**

### MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Continuous Reverse Voltage | $V_R$ | 200 | Vdc |
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | 200 | Vdc |
| Continuous Forward Current | $I_F$ | 200 | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 625 | mAdc |
| Repetitive Peak Forward Current (Pulse Wave = 1 sec, Duty Cycle = 66%) | $I_{FRM}$ | 500 | mA |
| Non−Repetitive Peak Forward Current (Square Wave, $T_J$ = 25°C prior to surge)<br>t = 1 μs<br>t = 1 ms<br>t = 1 s | $I_{FSM}$ | <br>5.0<br>2.0<br>0.5 | A |

### THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|---|---|---|---|
| Total Device Dissipation FR−5 Board* ($T_A$ = 25°C)<br>Derate above 25°C | $P_D$ | 200<br>1.57 | mW<br>mW/°C |
| Thermal Resistance Junction−to−Ambient | $R_{\theta JA}$ | 635 | °C/W |
| Junction and Storage Temperature Range | $T_J$, $T_{stg}$ | −55 to +150 | °C |

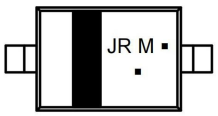
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

*FR−5 Minimum Pad

### ELECTRICAL CHARACTERISTICS ($T_A$ = 25°C unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | |
| Reverse Voltage Leakage Current<br>($V_R$ = 200 Vdc)<br>($V_R$ = 200 Vdc, $T_J$ = 150°C) | $I_R$ | <br>−<br>− | <br>1.0<br>100 | μAdc |
| Reverse Breakdown Voltage<br>($I_{BR}$ = 100 μAdc) | $V_{(BR)}$ | 250 | − | Vdc |
| Forward Voltage<br>($I_F$ = 100 mAdc)<br>($I_F$ = 200 mAdc) | $V_F$ | <br>−<br>− | <br>1000<br>1250 | mV |
| Diode Capacitance<br>($V_R$ = 0, f = 1.0 MHz) | $C_D$ | − | 5.0 | pF |
| Reverse Recovery Time<br>($I_F$ = $I_R$ = 30 mAdc, $R_L$ = 100 Ω) | $t_{rr}$ | − | 50 | ns |

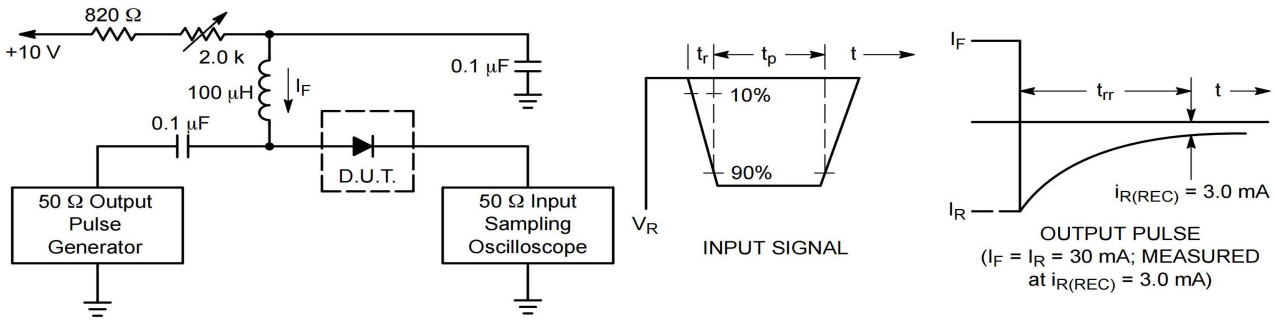
### MARKING DIAGRAM




JR = Specific Device Code
M = Date Code*
▪ = Pb−Free Package
(Note: Microdot may be in either location)
*Date Code orientation may vary depending upon manufacturing location.

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## BAS20HT1G




Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ($I_F$) of 30 mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 30 mA.
3. $t_p \gg t_{rr}$

**Figure 1. Recovery Time Equivalent Test Circuit**

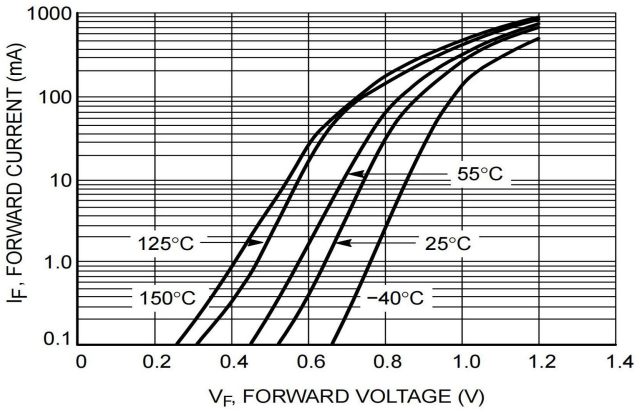



**Figure 2. Forward Current**

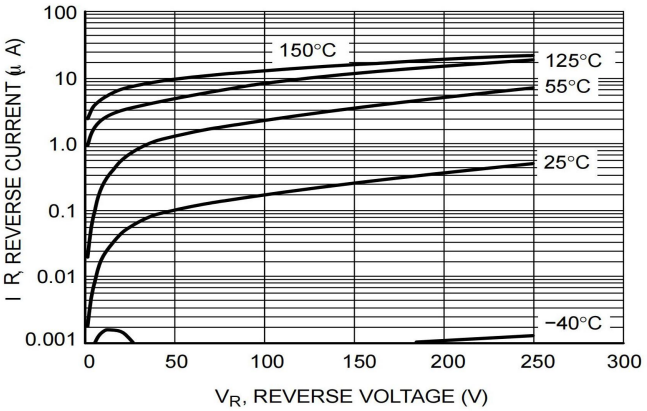



**Figure 3. Leakage Current**

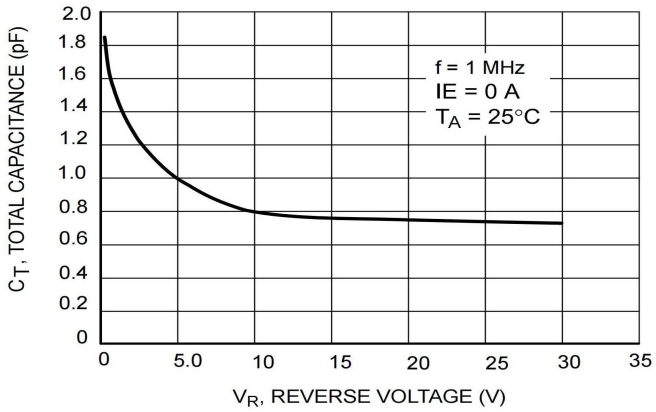


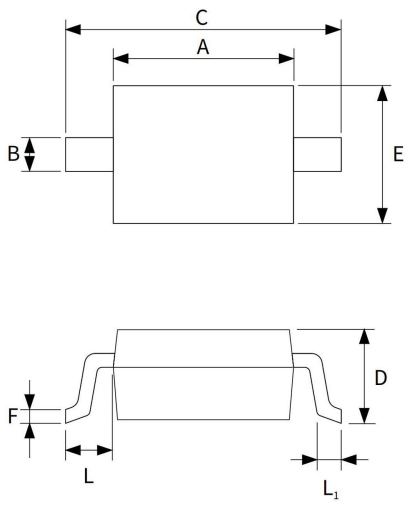

**Figure 4. Total Capacitance**

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## Ordering Information

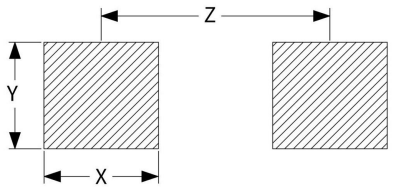
| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|---|
| SOD-323 | R1 | 0.0048 | 3000 | 30000 | 240000 | 7'' |

## Package Outline Dimensions (SOD-323)




| Symbol | Dimensions | | | |
|---|---|---|---|---|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 1.60 | 1.80 | 0.063 | 0.071 |
| B | 0.25 | 0.40 | 0.010 | 0.016 |
| C | 2.30 | 2.80 | 0.091 | 0.110 |
| D | 0.80 | 1.10 | 0.031 | 0.043 |
| $D_1$ | 0.80 | 0.90 | 0.031 | 0.035 |
| E | 1.20 | 1.40 | 0.047 | 0.055 |
| F | 0.08 | 0.18 | 0.003 | 0.007 |
| L | 0.475REF | | 0.019REF | |
| $L_1$ | 0.25 | 0.40 | 0.010 | 0.016 |
| H | - | 0.14 | - | 0.006 |

## Suggested Pad Layout




| Symbol | Dimensions | | | |
|---|---|---|---|---|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| X | 0.65 | 0.75 | 0.026 | 0.030 |
| Y | 0.65 | 0.75 | 0.026 | 0.030 |
| Z | 2.10 | 2.20 | 0.084 | 0.088 |