

# Dual Series High-Voltage Switching Diode, 250 V

## BAS21SLT1G, NSVBAS21SLT1G

### Features

- Moisture Sensitivity Level: 1
- ESD Rating – Human Body Model: Class 1  
– Machine Model: Class B
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant
- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable

### MAXIMUM RATINGS

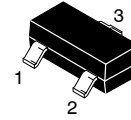
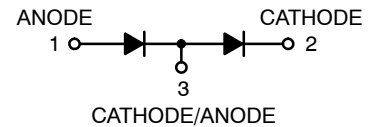
| Rating                          | Symbol          | Value | Unit |
|---------------------------------|-----------------|-------|------|
| Continuous Reverse Voltage      | $V_R$           | 250   | Vdc  |
| Repetitive Peak Reverse Voltage | $V_{RRM}$       | 250   | Vdc  |
| Peak Forward Current            | $I_F$           | 225   | mAdc |
| Peak Forward Surge Current      | $I_{FM(surge)}$ | 625   | mAdc |

### THERMAL CHARACTERISTICS

| Characteristic                                                                                                      | Symbol          | Max         | Unit                      |
|---------------------------------------------------------------------------------------------------------------------|-----------------|-------------|---------------------------|
| Total Device Dissipation FR-5 Board (Note 1)<br>$T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$         | $P_D$           | 225         | mW                        |
|                                                                                                                     |                 | 1.8         | mW/ $^\circ\text{C}$      |
| Thermal Resistance, Junction to Ambient                                                                             | $R_{\theta JA}$ | 556         | $^\circ\text{C}/\text{W}$ |
| Total Device Dissipation Alumina Substrate, (Note 2)<br>$T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_D$           | 300         | mW                        |
|                                                                                                                     |                 | 2.4         | mW/ $^\circ\text{C}$      |
| Thermal Resistance, Junction to Ambient                                                                             | $R_{\theta JA}$ | 417         | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature Range                                                                              | $T_J, T_{stg}$  | -55 to +150 | $^\circ\text{C}$          |

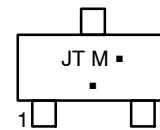
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

- FR-5 =  $1.0 \times 0.75 \times 0.062$  in.
- Alumina =  $0.4 \times 0.3 \times 0.024$  in. 99.5% alumina.



SOT-23 (TO-236)  
CASE 318  
STYLE 11

### MARKING DIAGRAM



JT = Device Code  
M = Date Code\*  
■ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation and/or overbar may vary depending upon manufacturing location.

### ORDERING INFORMATION

| Device        | Package          | Shipping <sup>†</sup> |
|---------------|------------------|-----------------------|
| BAS21SLT1G    | SOT-23 (Pb-Free) | 3000 / Tape & Reel    |
| NSVBAS21SLT1G | SOT-23 (Pb-Free) | 3000 / Tape & Reel    |

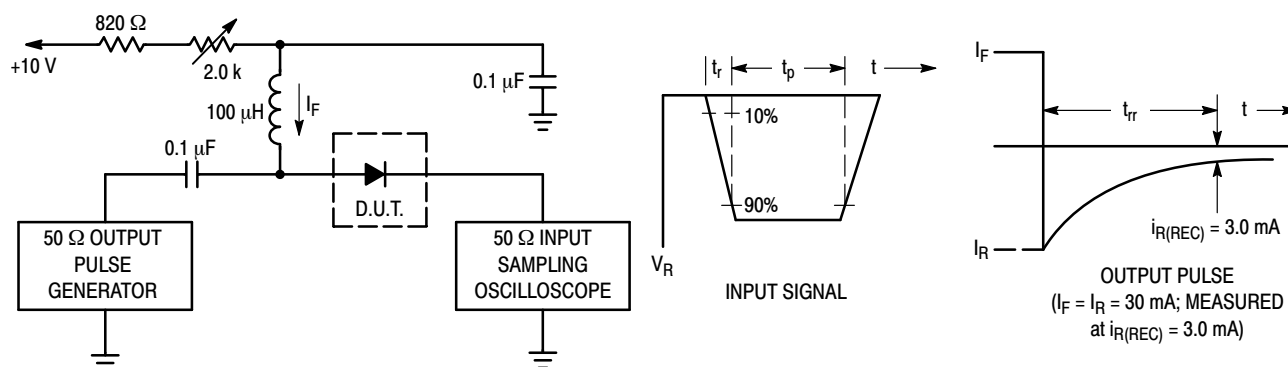
<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, [BRD8011/D](http://BRD8011/D).

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## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

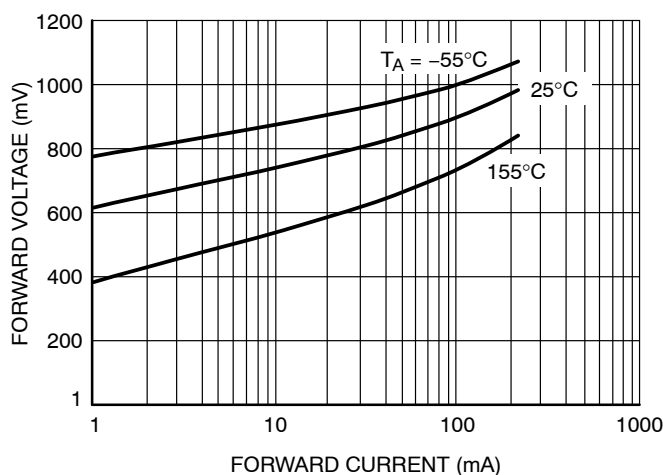
| Characteristic                                                                                                          | Symbol     | Min | Max          | Unit            |
|-------------------------------------------------------------------------------------------------------------------------|------------|-----|--------------|-----------------|
| <b>OFF CHARACTERISTICS</b>                                                                                              |            |     |              |                 |
| Reverse Voltage Leakage Current<br>( $V_R = 200\text{ Vdc}$ )<br>( $V_R = 200\text{ Vdc}$ , $T_J = 150^\circ\text{C}$ ) | $I_R$      | –   | 0.1<br>100   | $\mu\text{Adc}$ |
| Reverse Breakdown Voltage<br>( $I_{BR} = 100\text{ }\mu\text{Adc}$ )                                                    | $V_{(BR)}$ | 250 | –            | Vdc             |
| Forward Voltage<br>( $I_F = 100\text{ mAdc}$ )<br>( $I_F = 200\text{ mAdc}$ )                                           | $V_F$      | –   | 1000<br>1250 | mV              |
| Diode Capacitance<br>( $V_R = 0$ , $f = 1.0\text{ MHz}$ )                                                               | $C_D$      | –   | 5.0          | pF              |
| Reverse Recovery Time<br>( $I_F = I_R = 30\text{ mAdc}$ , $R_L = 100\text{ }\Omega$ )                                   | $t_{rr}$   | –   | 50           | ns              |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

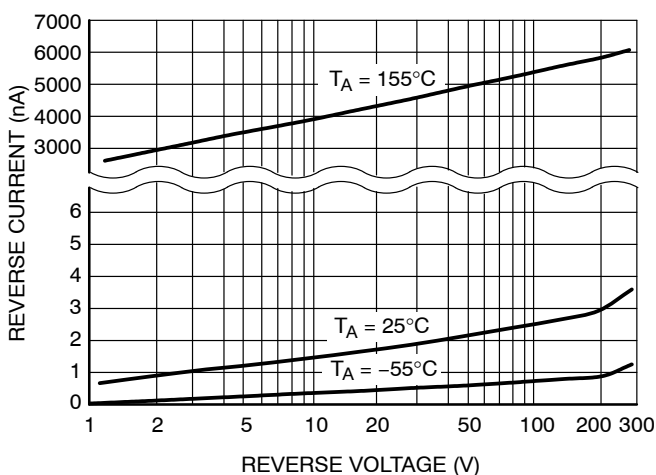


- Notes: 1. A 2.0 k $\Omega$  variable resistor adjusted for a Forward Current ( $I_F$ ) of 30 mA.  
2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 30 mA.  
3.  $t_p \gg t_{rr}$

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



**Figure 2. Forward Voltage**



**Figure 3. Reverse Leakage**

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