



**THE DATASHEET OF
BAS16M3T5G**



Switching Diode

BAS16M3T5G

Features

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

MAXIMUM RATINGS

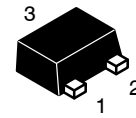
| Rating | Symbol | Value | Unit |
|----------------------------|-----------------|-------|------|
| Continuous Reverse Voltage | V_R | 100 | Vdc |
| Peak Forward Current | I_F | 200 | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 500 | mAdc |

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.

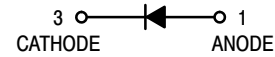
THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|------------------------------------------------------------------------------------------------------------------|-----------------|----------------|--------------------|
| Total Device Dissipation, FR-4 Board (Note 1) $T_A = 25^\circ\text{C}$ Derated above 25°C | P_D | 260 | mW |
| Thermal Resistance, Junction-to-Ambient (Note 1) | $R_{\theta JA}$ | 490 | $^\circ\text{C/W}$ |
| Total Device Dissipation, FR-4 Board (Note 2) $T_A = 25^\circ\text{C}$ Derated above 25°C | P_D | 580 | mW |
| Thermal Resistance, Junction-to-Ambient (Note 2) | $R_{\theta JA}$ | 215 | $^\circ\text{C/W}$ |
| Junction and Storage Temperature Range | T_J, T_{stg} | -55 to +150 | $^\circ\text{C}$ |

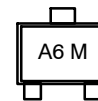
1. FR-4 @ Minimum Pad
2. FR-4 @ 1.0 × 1.0 Inch Pad



SOT-723
CASE 631AA
STYLE 2



MARKING DIAGRAM



A6 = Specific Device Code
M = Date Code

ORDERING INFORMATION

| Device | Package | Shipping† |
|------------|----------------------|--------------------|
| BAS16M3T5G | SOT-723 (Pb-Free) | 8000 / Tape & Reel |

†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](#).

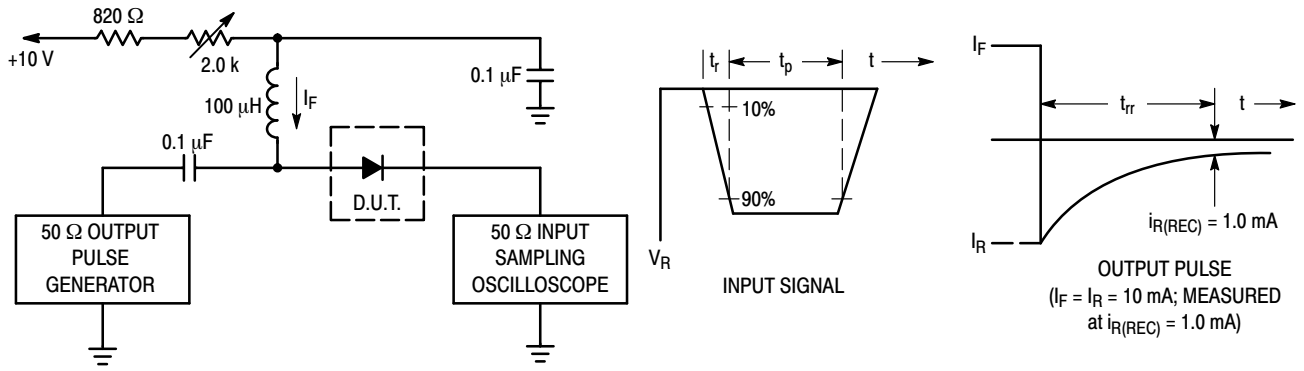
BAS16M3T5G

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

| Characteristic | Symbol | Min | Max | Unit |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------|----------------------------|------------------|
| OFF CHARACTERISTICS | | | | |
| Reverse Voltage Leakage Current ($V_R = 100\text{ Vdc}$) ($V_R = 75\text{ Vdc}$, $T_J = 150^\circ\text{C}$) ($V_R = 25\text{ Vdc}$, $T_J = 150^\circ\text{C}$) | I_R | – – – | 1.0 50 30 | $\mu\text{A dc}$ |
| Reverse Breakdown Voltage ($I_{BR} = 100\ \mu\text{A dc}$) | $V_{(BR)}$ | 100 | – | Vdc |
| Forward Voltage ($I_F = 1.0\ \text{mA dc}$) ($I_F = 10\ \text{mA dc}$) ($I_F = 50\ \text{mA dc}$) ($I_F = 150\ \text{mA dc}$) | V_F | – – – – | 715 855 1000 1250 | mV |
| Diode Capacitance ($V_R = 0$, $f = 1.0\ \text{MHz}$) | C_D | – | 2.0 | pF |
| Forward Recovery Voltage ($I_F = 10\ \text{mA dc}$, $t_r = 20\ \text{ns}$) | V_{FR} | – | 1.75 | Vdc |
| Reverse Recovery Time ($I_F = I_R = 10\ \text{mA dc}$, $R_L = 50\ \Omega$) | t_{rr} | – | 6.0 | ns |
| Stored Charge ($I_F = 10\ \text{mA dc}$ to $V_R = 5.0\ \text{Vdc}$, $R_L = 500\ \Omega$) | Q_S | – | 45 | pC |

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.

BAS16M3T5G



- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 10 mA.
 3. $t_p > t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

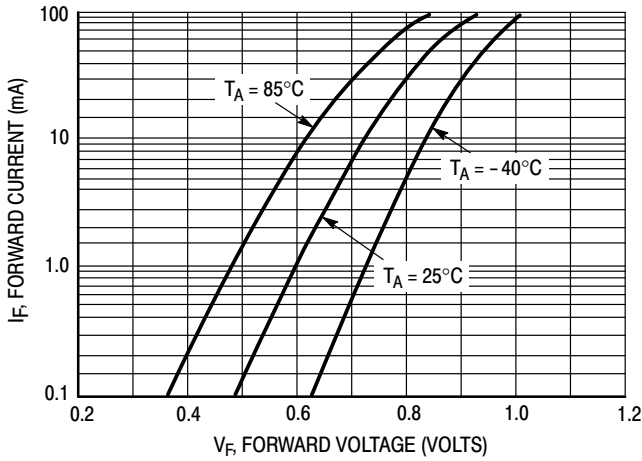


Figure 2. Forward Voltage

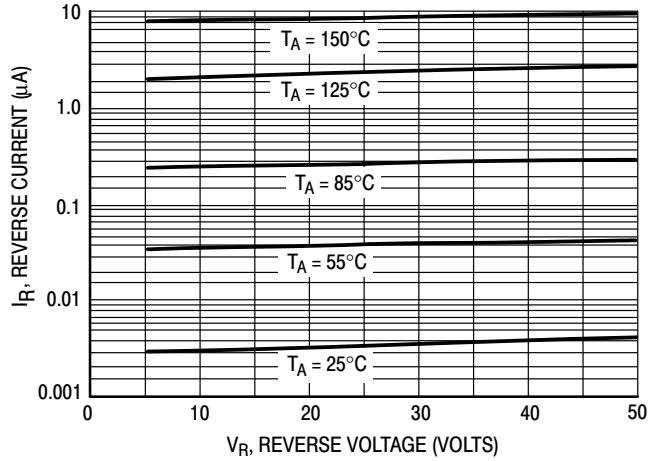


Figure 3. Leakage Current

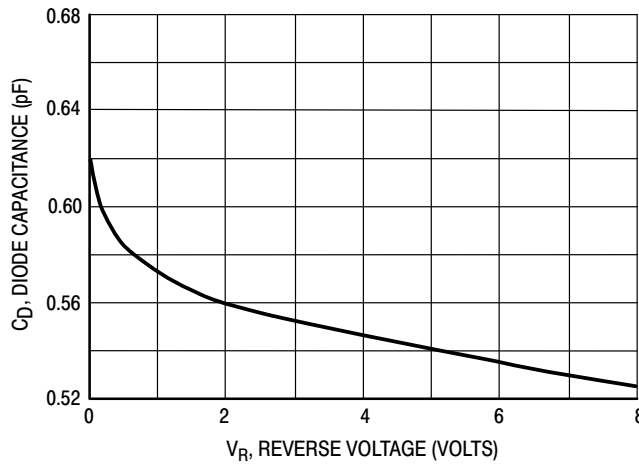
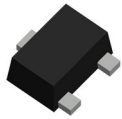


Figure 4. Capacitance

MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



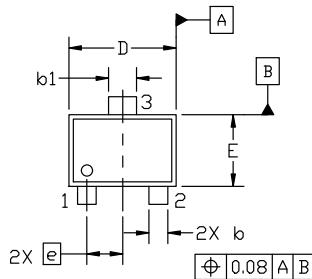
SOT-723 1.20x0.80x0.50, 0.40P
CASE 631AA
ISSUE E

DATE 24 JAN 2024

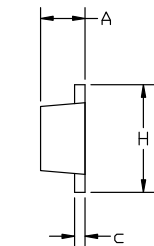
NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

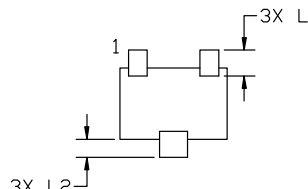
| DIM | MILLIMETERS | | |
|-----|-------------|------|------|
| | MIN. | NOM. | MAX. |
| A | 0.45 | 0.50 | 0.55 |
| b | 0.15 | 0.21 | 0.27 |
| b1 | 0.25 | 0.31 | 0.37 |
| c | 0.07 | 0.12 | 0.17 |
| D | 1.15 | 1.20 | 1.25 |
| E | 0.75 | 0.80 | 0.85 |
| e | 0.40 BSC | | |
| H | 1.15 | 1.20 | 1.25 |
| L | 0.29 REF | | |
| L2 | 0.15 | 0.20 | 0.25 |



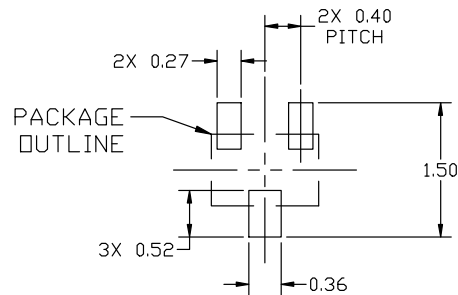
TOP VIEW



SIDE VIEW

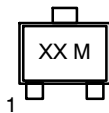


BOTTOM VIEW



RECOMMENDED MOUNTING FOOTPRINT

GENERIC MARKING DIAGRAM*



XX = Specific Device Code
M = Date Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "•", may or may not be present. Some products may not follow the Generic Marking.

*For additional information on our Pb-Free strategy and soldering details, please download the DN Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

| STYLE 1: | STYLE 2: | STYLE 3: | STYLE 4: | STYLE 5: |
|--------------|--------------|--------------|----------------|-------------|
| PIN 1. BASE | PIN 1. ANODE | PIN 1. ANODE | PIN 1. CATHODE | PIN 1. GATE |
| 2. EMITTER | 2. N/C | 2. ANODE | 2. CATHODE | 2. SOURCE |
| 3. COLLECTOR | 3. CATHODE | 3. CATHODE | 3. ANODE | 3. DRAIN |

| | | |
|-------------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| DESCRIPTION: | SOT-723 1.20x0.80x0.50, 0.40P | PAGE 1 OF 1 |

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