# BAW56M3T5G

# Dual Switching Diode Common Anode

The BAW56M3T5G device is a spin−off of our popular SOT−23 three−leaded device. It is designed for switching applications and is housed in the SOT−723 surface mount package. This device is ideal for low−power surface mount applications where board space is at a premium.

**Features**

- Reduces Board Space
- This is a Halide−Free Device
- This is a Pb−Free Device

**ON Semiconductor®**

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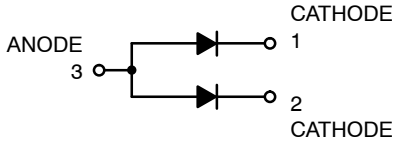
**70 V**
**DUAL COMMON ANODE**
**SWITCHING DIODE**




**MAXIMUM RATINGS** (EACH DIODE)

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Reverse Voltage | $V_R$ | 75 | Vdc |
| Forward Current | $I_F$ | 200 | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 500 | mAdc |

**THERMAL CHARACTERISTICS**

| Characteristic | Symbol | Max | Unit |
|---|---|---|---|
| Total Device Dissipation<br>FR−5 Board (Note 1)<br>$T_A$ = 25°C<br>Derate above 25°C | $P_D$ | <br>265<br><br>2.1 | mW<br><br>mW/°C |
| Thermal Resistance,<br>Junction−to−Ambient | $R_{\theta JA}$ | 470 | °C/W |
| Total Device Dissipation<br>Alumina Substrate, (Note 2) $T_A$ = 25°C<br>Derate above 25°C | $P_D$ | 640<br><br>5.1 | mW<br><br>mW/°C |
| Thermal Resistance,<br>Junction−to−Ambient | $R_{\theta JA}$ | 195 | °C/W |
| Junction and Storage Temperature | $T_J$, $T_{stg}$ | −55 to +150 | °C |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR−5 = 1.0 × 0.75 × 0.062 in.
2. Alumina = 0.4 × 0.3 × 0.024 in. 99.5% alumina.

**MARKING DIAGRAM**

AN = Specific Device Code
M = Date Code

**ORDERING INFORMATION**

| Device | Package | Shipping† |
|---|---|---|
| BAW56M3T5G | SOT−723<br>(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.

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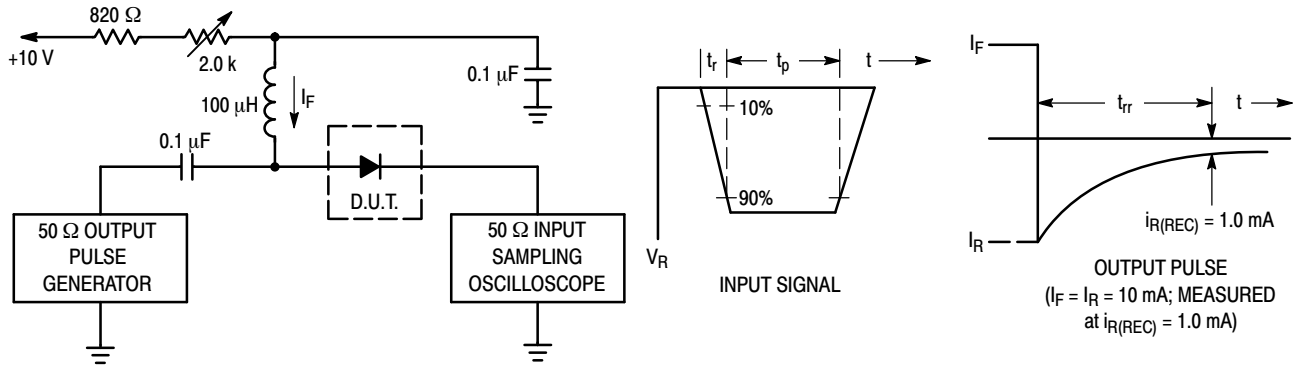
**ELECTRICAL CHARACTERISTICS** ($T_A$ = 25°C unless otherwise noted) (Each Diode)

| Characteristic | Symbol | Min | Max | Unit |
|---|---|---|---|---|
| Reverse Breakdown Voltage ($I_{(BR)}$ = 100 μA) | $V_{(BR)}$ | 70 | – | V |
| Reverse Voltage Leakage Current | $I_R$ | | | μA |
| ($V_R$ = 25 V, $T_J$ = 150°C) | | – | 30 | |
| ($V_R$ = 70 V) | | – | 2.5 | |
| ($V_R$ = 70 V, $T_J$ = 150°C) | | – | 50 | |
| Diode Capacitance ($V_R$ = 0 V, f = 1.0 MHz) | $C_D$ | – | 2.0 | pF |
| Forward Voltage | $V_F$ | | | mV |
| ($I_F$ = 1.0 mA) | | – | 715 | |
| ($I_F$ = 10 mA) | | – | 855 | |
| ($I_F$ = 50 mA) | | – | 1000 | |
| ($I_F$ = 150 mA) | | – | 1250 | |
| Reverse Recovery Time ($I_F$ = $I_R$ = 10 mA, $I_{R(REC)}$ = 1.0 mA) (Figure 1) $R_L$ = 100 Ω | $t_{rr}$ | – | 6.0 | ns |




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

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

**Curves Applicable to Each Cathode**

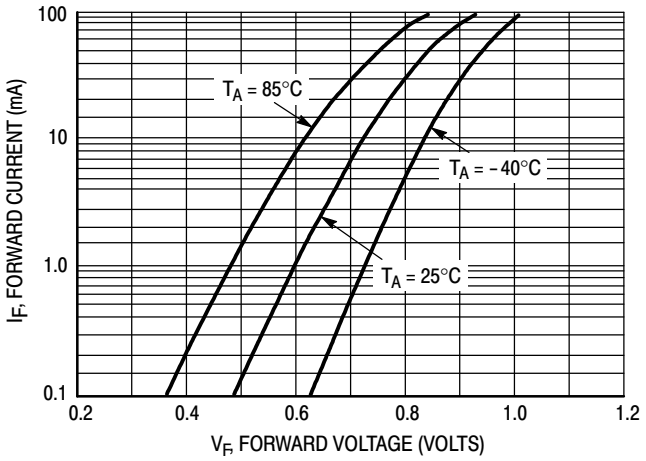



**Figure 2. Forward Voltage**

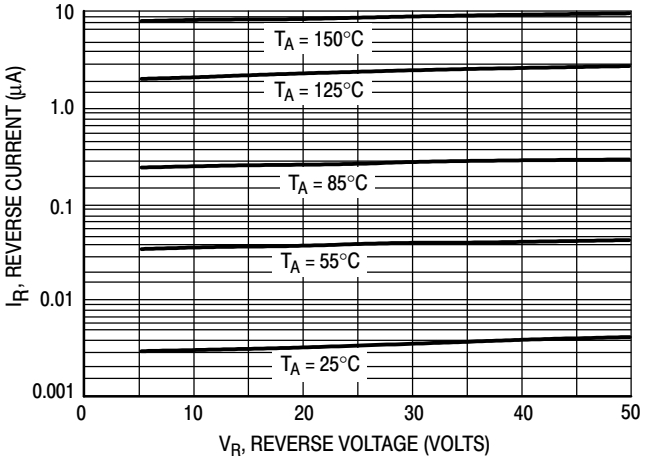



**Figure 3. Leakage Current**

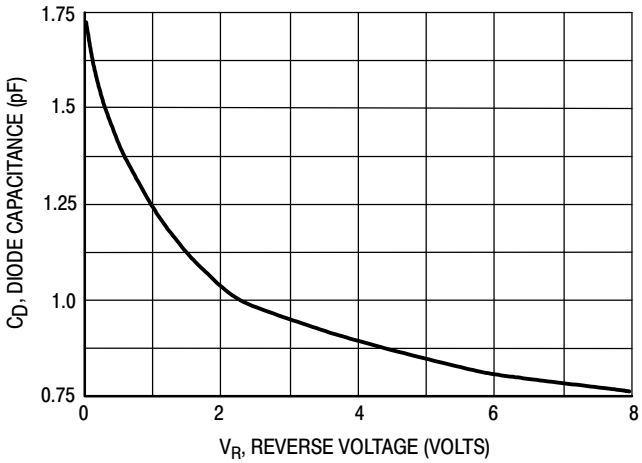
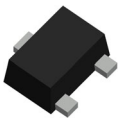



**Figure 4. Capacitance**

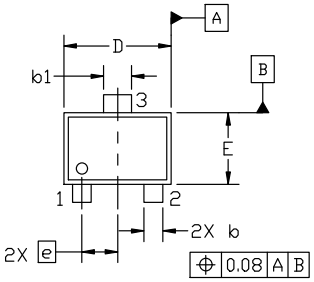


**SOT−723 1.20x0.80x0.50, 0.40P**
CASE 631AA
ISSUE E

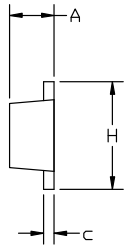
DATE 24 JAN 2024

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.

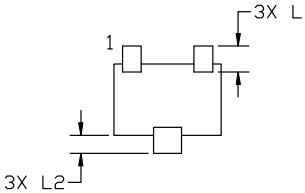
| DIM | MILLIMETERS | | |
|---|---|---|---|
| | MIN. | NOM. | MAX. |
| A | 0.45 | 0.50 | 0.55 |
| b | 0.15 | 0.21 | 0.27 |
| b1 | 0.25 | 0.31 | 0.37 |
| c | 0.07 | 0.12 | 0.17 |
| D | 1.15 | 1.20 | 1.25 |
| E | 0.75 | 0.80 | 0.85 |
| e | 0.40 BSC | | |
| H | 1.15 | 1.20 | 1.25 |
| L | 0.29 REF | | |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



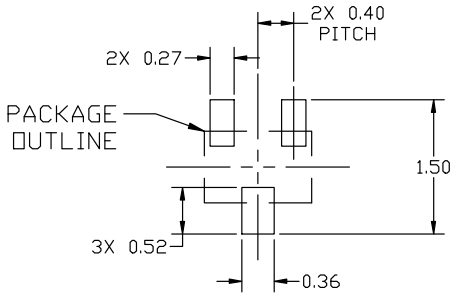
TOP VIEW



SIDE VIEW



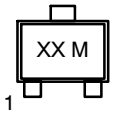
BOTTOM VIEW



RECOMMENDED MOUNTING FOOTPRINT

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

**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.

STYLE 1:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 2:
PIN 1. ANODE
2. N/C
3. CATHODE

STYLE 3:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

STYLE 5:
PIN 1. GATE
2. SOURCE
3. DRAIN

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

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