

# Monolithic Dual Switching Diode

## Common Cathode

### FEATURES

- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

### ORDERING INFORMATION

| Device                     | Marking | Shipping          |
|----------------------------|---------|-------------------|
| LBAV70TT1G<br>S-LBAV70TT1G | A4      | 3000 Tape & Reel  |
| LBAV70TT3G<br>S-LBAV70TT3G | A4      | 10000 Tape & Reel |

### MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

| Rating                     | Symbol                 | Max | Unit |
|----------------------------|------------------------|-----|------|
| Reverse Voltage            | V <sub>R</sub>         | 70  | Vdc  |
| Forward Current            | I <sub>F</sub>         | 200 | mAdc |
| Peak Forward Surge Current | I <sub>FM(surge)</sub> | 500 | mAdc |

### THERMAL CHARACTERISTICS

| Characteristic   | Symbol                            | Max         | Unit  |
|--|-----------------------------------|-------------|-------|
| Total Device Dissipation FR-5 Board <sup>(1)</sup><br>T <sub>A</sub> = 25°C        | P <sub>D</sub>                    | 225         | mW    |
| Derate above 25°C  |                                   | 1.8         | mW/°C |
| Thermal Resistance, Junction to Ambient  | R <sub>θJA</sub>                  | 555         | °C/W  |
| Total Device Dissipation<br>Alumina Substrate <sup>(2)</sup> T <sub>A</sub> = 25°C | P <sub>D</sub>                    | 300         | mW    |
| Derate above 25°C  |                                   | 2.9         | mW/°C |
| Thermal Resistance, Junction to Ambient  | R <sub>θJA</sub>                  | 345         | °C/W  |
| Junction and Storage Temperature   | T <sub>J</sub> , T <sub>stg</sub> | -55 to +150 | °C    |

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

### OFF CHARACTERISTICS

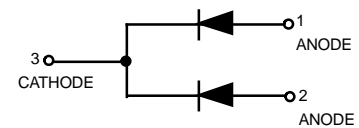
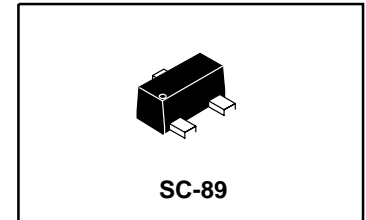
|   |                                  |                  |                            |              |
|---|----------------------------------|------------------|----------------------------|--------------|
| Reverse Breakdown Voltage<br>(I <sub>(BR)</sub> = 100 μAdc)   | V <sub>(BR)</sub>                | 70               | -                          | Vdc          |
| Reverse Voltage Leakage Current (3)<br>(V <sub>R</sub> = 70 Vdc)<br>(V <sub>R</sub> = 50 Vdc)   | I <sub>R</sub><br>I <sub>R</sub> | -<br>-           | 5.0<br>100                 | μAdc<br>nAdc |
| Diode Capacitance<br>(V <sub>R</sub> = 0, f = 1.0 MHz)  | C <sub>D</sub>                   | -                | 1.5                        | pF           |
| Forward Voltage<br>(I <sub>F</sub> = 1.0 mAdc)<br>(I <sub>F</sub> = 10 mAdc)<br>(I <sub>F</sub> = 50 mAdc)<br>(I <sub>F</sub> = 150 mAdc) | V <sub>F</sub>                   | -<br>-<br>-<br>- | 715<br>855<br>1000<br>1250 | mVdc         |
| Reverse Recovery Time<br>(I <sub>F</sub> = I <sub>R</sub> = 10 mAdc, R <sub>L</sub> = 100 Ω, I <sub>R(REC)</sub> = 1.0 mAdc) (Figure 1)   | t <sub>rr</sub>                  | -                | 6.0                        | ns           |
| Forward Recovery Voltage<br>(I <sub>F</sub> = 10 mAdc, t <sub>r</sub> = 20 ns) (Figure 2)   | V <sub>RF</sub>                  | -                | 1.75                       | V            |

1. FR-5 = 1.0 × 0.75 × 0.062 in.

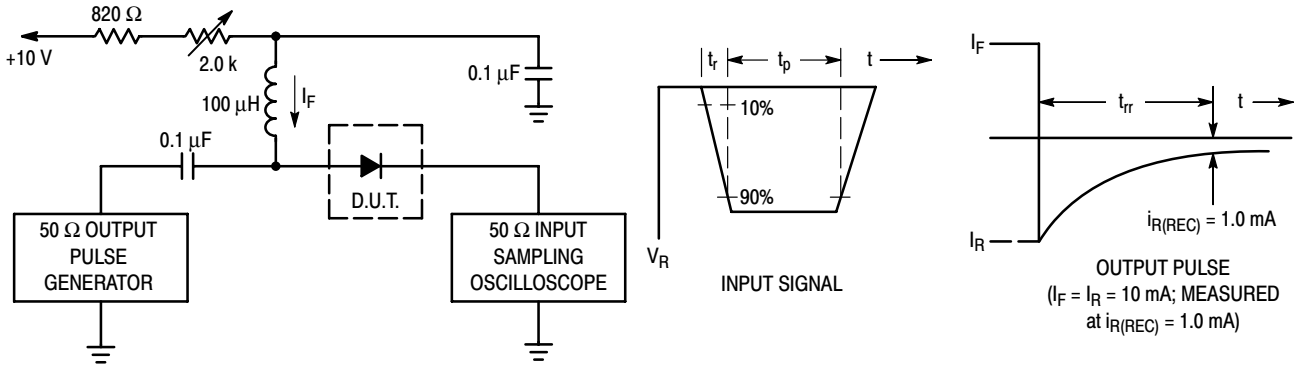
2. Alumina = 0.4 × 0.3 × 0.024 in. 99.5% alumina.

3. For each individual diode while the second diode is unbiased.

**LBAV70TT1G**  
**S-LBAV70TT1G**



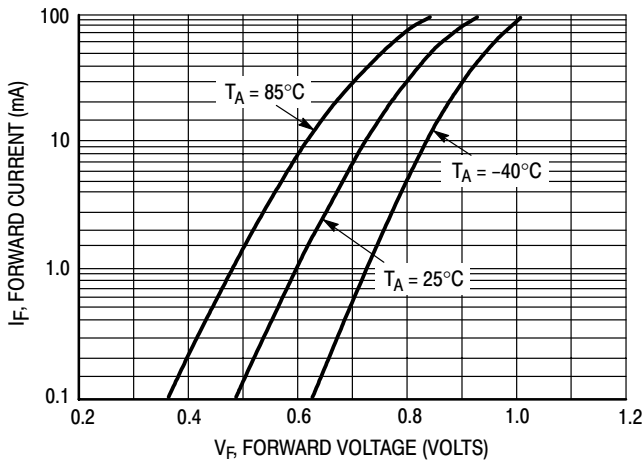
**LBAV70TT1G,S-LBAV70TT1G**



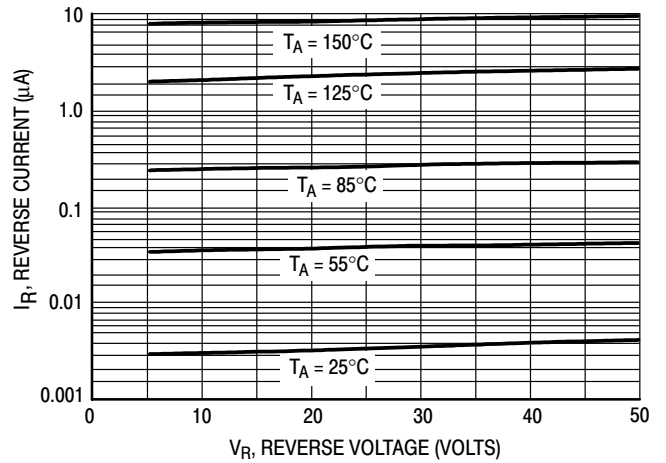
- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(peak)}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

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

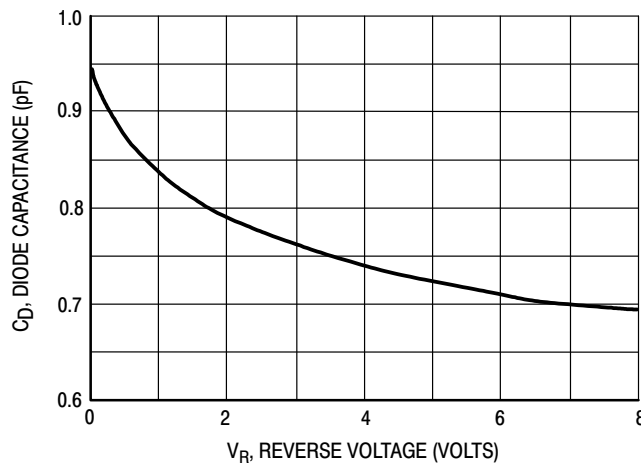
**Curves Applicable to Each Anode**



**Figure 2. Forward Voltage**



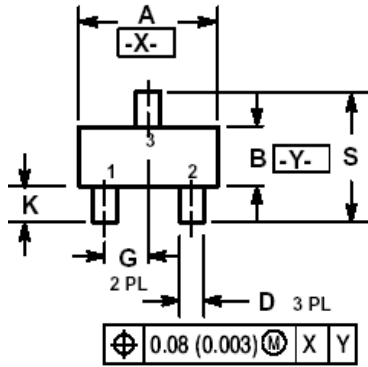
**Figure 3. Leakage Current**



**Figure 4. Capacitance**

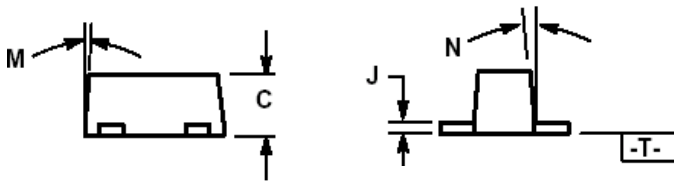
LBAV70TT1G,S-LBAV70TT1G

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NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 463C-01 OBSOLETE, NEW STANDARD 463C-02.



| DIM | MILLIMETERS |      |      | INCHES    |       |       |
|-----|-------------|------|------|-----------|-------|-------|
|     | MIN         | NOM  | MAX  | MIN       | NOM   | MAX   |
| A   | 1.50        | 1.60 | 1.70 | 0.059     | 0.063 | 0.067 |
| B   | 0.75        | 0.85 | 0.95 | 0.030     | 0.034 | 0.040 |
| C   | 0.60        | 0.70 | 0.80 | 0.024     | 0.028 | 0.031 |
| D   | 0.23        | 0.28 | 0.33 | 0.009     | 0.011 | 0.013 |
| G   | 0.50 BSC    |      |      | 0.020 BSC |       |       |
| H   | 0.53 REF    |      |      | 0.021 REF |       |       |
| J   | 0.10        | 0.15 | 0.20 | 0.004     | 0.006 | 0.008 |
| K   | 0.30        | 0.40 | 0.50 | 0.012     | 0.016 | 0.020 |
| L   | 1.10 REF    |      |      | 0.043 REF |       |       |
| M   | ---         | ---  | 10 ° | ---       | ---   | 10 °  |
| N   | ---         | ---  | 10 ° | ---       | ---   | 10 °  |
| S   | 1.50        | 1.60 | 1.70 | 0.059     | 0.063 | 0.067 |

