

## Features

- Fast Switching Speed: max. 50ns
- Continuous Reverse Voltage: max. 200V
- Repetitive Peak Reverse Voltage: max. 250V
- Repetitive Peak Forward Current: max. 1A
- Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- **Lead Free/RoHS Compliant (Note 1)**
- **"Green" Device (Notes 2 and 3)**

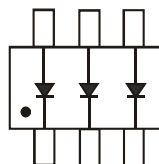
## Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound, Note 5. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Orientation: See Diagram
- Weight: 0.009 grams (approximate)

SOT363



Top View



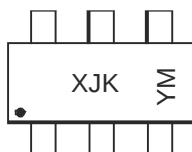
Top View  
Internal Schematic

## Ordering Information (Notes 3)

| Part Number | Case   | Packaging        |
|-------------|--------|------------------|
| BAS21TW-7   | SOT363 | 3000/Tape & Reel |

- Notes:
1. No purposefully added lead.
  2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
  3. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



XJK = Product Type Marking Code  
YM = Date Code Marking  
Y = Year (ex: T = 2011)  
M = Month (ex: 9 = September)

### Date Code Key

| Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|------|------|------|------|------|------|------|------|------|
| Code | Y    | Z    | A    | B    | C    | D    | E    | F    |

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                            | Symbol              | Value | Unit |
|-------------------------------------------|---------------------|-------|------|
| Non-Repetitive Peak Reverse Voltage       | V <sub>RM</sub>     | 250   | V    |
| Peak Repetitive Reverse Voltage           | V <sub>RRM</sub>    | 250   | V    |
| Working Peak Reverse Voltage              | V <sub>RWM</sub>    |       |      |
| DC Blocking Voltage                       | V <sub>R</sub>      |       |      |
| RMS Reverse Voltage                       | V <sub>R(RMS)</sub> | 177   | V    |
| Forward Continuous Current (Note 4)       | I <sub>FM</sub>     | 200   | mA   |
| Non-Repetitive Peak Forward Surge Current | I <sub>FSM</sub>    | 10    | A    |
|                                           |                     | 8     |      |
|                                           |                     | 2     |      |

**Thermal Characteristics**

| Characteristic                                      | Symbol                            | Value       | Unit |
|-----------------------------------------------------|-----------------------------------|-------------|------|
| Power Dissipation (Note 4)                          | P <sub>D</sub>                    | 300         | mW   |
| Thermal Resistance Junction to Ambient Air (Note 4) | R <sub>θJA</sub>                  | 417         | °C/W |
| Operating and Storage Temperature Range             | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150 | °C   |

**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                     | Symbol             | Min | Max  | Unit | Test Condition                                |
|------------------------------------|--------------------|-----|------|------|-----------------------------------------------|
| Reverse Breakdown Voltage (Note 5) | V <sub>(BR)R</sub> | 250 | —    | V    | I <sub>R</sub> = 100μA                        |
| Forward Voltage                    | V <sub>F</sub>     | —   | 1.05 | V    | I <sub>F</sub> = 100mA                        |
|                                    |                    | —   | 1.25 |      | I <sub>F</sub> = 200mA                        |
| Reverse Current (Note 5)           | I <sub>R</sub>     | —   | 100  | nA   | V <sub>R</sub> = 200V                         |
|                                    |                    |     | 100  | μA   | V <sub>R</sub> = 200V, T <sub>J</sub> = 150°C |
| Total Capacitance                  | C <sub>T</sub>     | —   | 5    | pF   | V <sub>R</sub> = 6V, f = 1.0MHz               |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | 50   | ns   | V <sub>R</sub> = 6V, I <sub>F</sub> = 5mA     |

Notes: 4. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.  
 5. Short duration pulse test used to minimize self-heating effect.

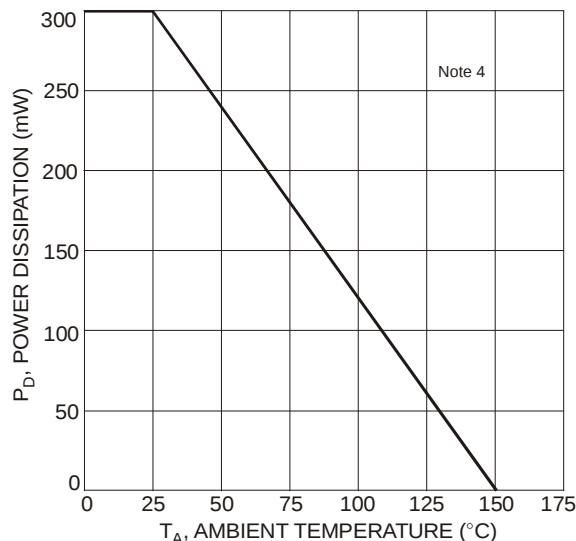


Fig. 1 Power Derating Curve, Total Package

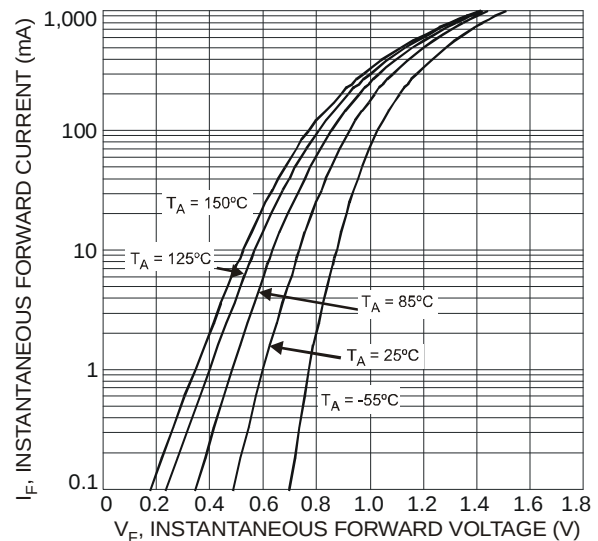


Fig. 2 Typical Forward Characteristics, Per Element

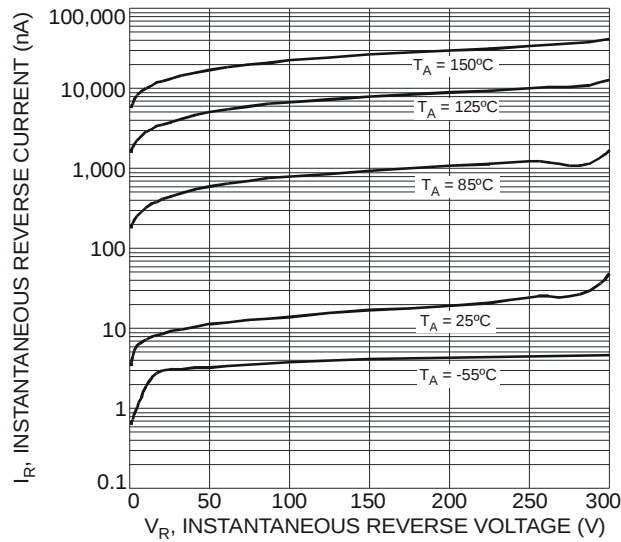


Fig. 3 Typical Reverse Characteristics, Per Element

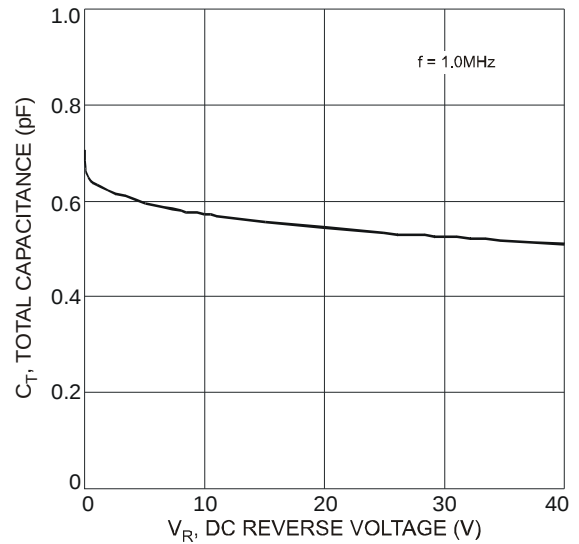
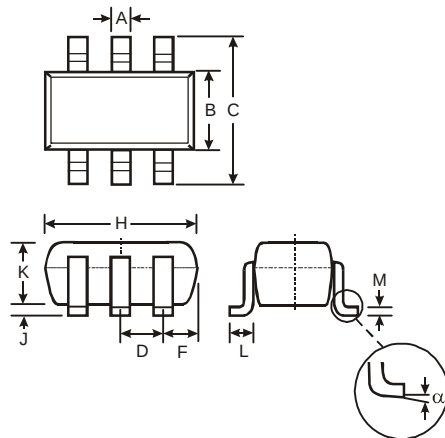


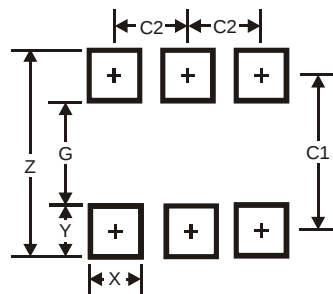
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

## Package Outline Dimensions



| SOT363               |          |      |
|----------------------|----------|------|
| Dim                  | Min      | Max  |
| A                    | 0.10     | 0.30 |
| B                    | 1.15     | 1.35 |
| C                    | 2.00     | 2.20 |
| D                    | 0.65 Typ |      |
| F                    | 0.40     | 0.45 |
| H                    | 1.80     | 2.20 |
| J                    | 0        | 0.10 |
| K                    | 0.90     | 1.00 |
| L                    | 0.25     | 0.40 |
| M                    | 0.10     | 0.22 |
| $\alpha$             | 0°       | 8°   |
| All Dimensions in mm |          |      |

## Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 2.5           |
| G          | 1.3           |
| X          | 0.42          |
| Y          | 0.6           |
| C1         | 1.9           |
| C2         | 0.65          |

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