

**SURFACE MOUNT SCHOTTKY BARRIER DIODE ARRAYS**
**Features**

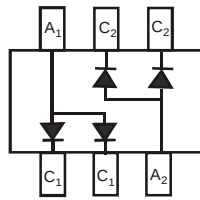
- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- **Lead Free/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3 and 4)**

**Mechanical Data**

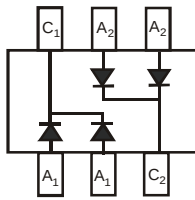
- Case: SOT-363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Orientation: See Diagrams Below
- Marking Information: See Page 3
- Ordering Information: See Page 2
- Weight: 0.006 grams (approximate)



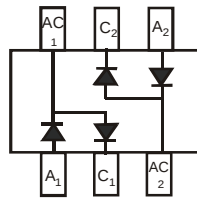
Top View



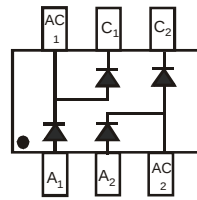
BAT54ADW\*



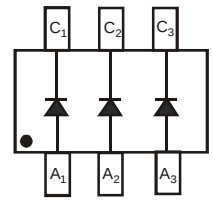
BAT54CDW\*



BAT54SDW\*



BAT54BRW



BAT54TW

\*Symmetrical configuration, no orientation indicator.

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

| Characteristic                           | Symbol           | Value | Unit |
|------------------------------------------|------------------|-------|------|
| Peak Repetitive Reverse Voltage          | V <sub>RRM</sub> | 30    | V    |
| Working Peak Reverse Voltage             | V <sub>RWM</sub> |       |      |
| DC Blocking Voltage                      | V <sub>R</sub>   |       |      |
| Forward Continuous Current (Note 1)      | I <sub>F</sub>   | 200   | mA   |
| Repetitive Peak Forward Current (Note 1) | I <sub>FRM</sub> | 300   | mA   |
| Forward Surge Current (Note 1)           | I <sub>FSM</sub> | 600   | mA   |

**Thermal Characteristics**

| Characteristic                                       | Symbol                            | Value       | Unit |
|------------------------------------------------------|-----------------------------------|-------------|------|
| Power Dissipation (Note 1)                           | P <sub>D</sub>                    | 200         | mW   |
| Thermal Resistance, Junction to Ambient Air (Note 1) | R <sub>θJA</sub>                  | 625         | °C/W |
| Operating and Storage Temperature Range              | T <sub>J</sub> , T <sub>STG</sub> | -65 to +125 | °C   |

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

| Characteristic                     | Symbol             | Min | Typ | Max                              | Unit | Test Condition                                                                                                             |
|------------------------------------|--------------------|-----|-----|----------------------------------|------|----------------------------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage (Note 5) | V <sub>(BR)R</sub> | 30  | —   | —                                | V    | I <sub>R</sub> = 100μA                                                                                                     |
| Forward Voltage (Note 5)           | V <sub>F</sub>     | —   | —   | 240<br>320<br>400<br>500<br>1000 | mV   | I <sub>F</sub> = 0.1mA<br>I <sub>F</sub> = 1mA<br>I <sub>F</sub> = 10mA<br>I <sub>F</sub> = 30mA<br>I <sub>F</sub> = 100mA |
| Reverse Leakage Current (Note 5)   | I <sub>R</sub>     | —   | —   | 2.0                              | μA   | V <sub>R</sub> = 25V                                                                                                       |
| Total Capacitance                  | C <sub>T</sub>     | —   | —   | 10                               | pF   | V <sub>R</sub> = 1.0V, f = 1.0MHz                                                                                          |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | —   | 5.0                              | ns   | I <sub>F</sub> = 10mA through I <sub>R</sub> = 10mA to I <sub>R</sub> = 1.0mA, R <sub>L</sub> = 100Ω                       |

- Notes:
1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. No purposefully added lead.
  3. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  4. Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants
  5. Short duration pulse test used to minimize self-heating effect.

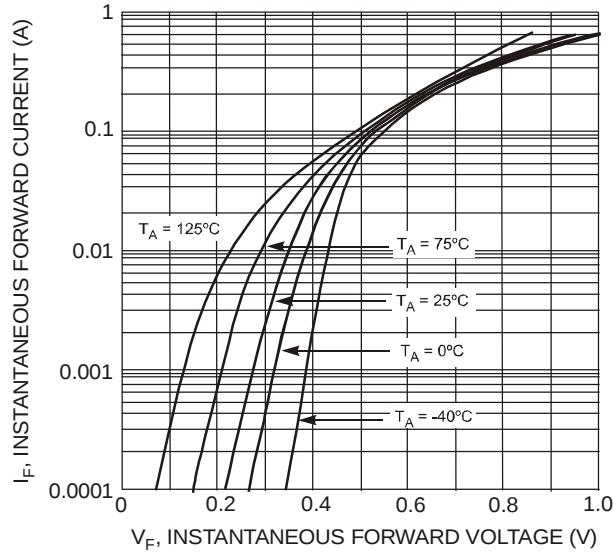


Fig. 1 Typical Forward Characteristics

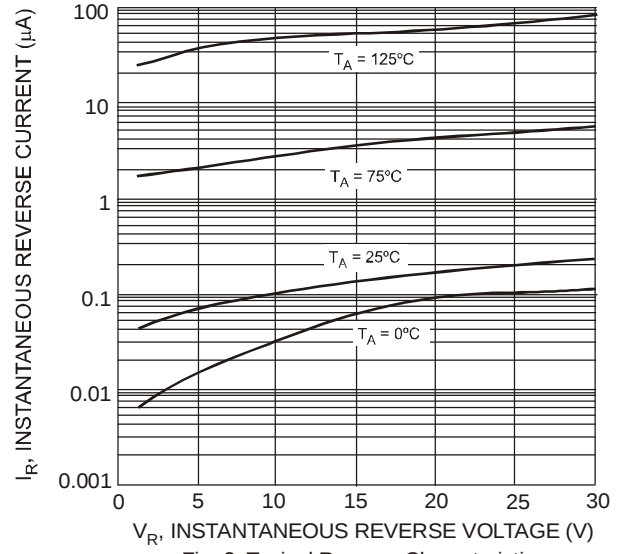


Fig. 2 Typical Reverse Characteristics

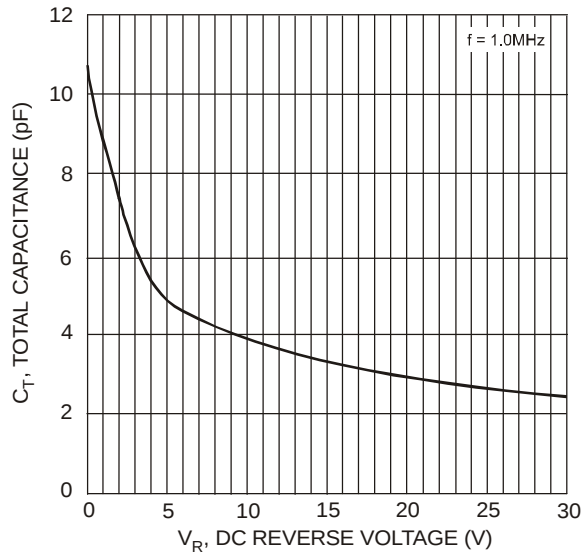


Fig. 3 Total Capacitance vs. Reverse Voltage

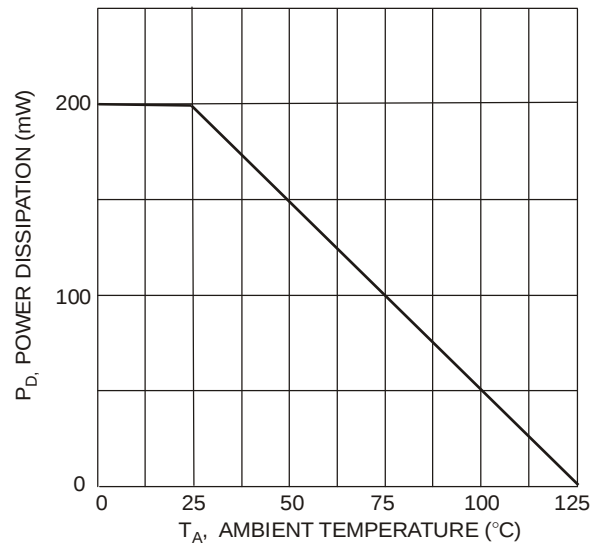


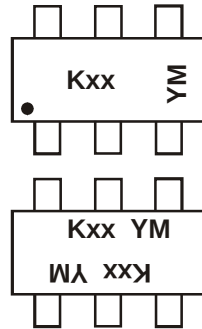
Fig. 4 Power Derating Curve

## Ordering Information (Note 6)

| Part Number  | Case    | Packaging        |
|--------------|---------|------------------|
| BAT54ADW-7-F | SOT-363 | 3000/Tape & Reel |
| BAT54CDW-7-F | SOT-363 | 3000/Tape & Reel |
| BAT54SDW-7-F | SOT-363 | 3000/Tape & Reel |
| BAT54BRW-7-F | SOT-363 | 3000/Tape & Reel |
| BAT54TW-7-F  | SOT-363 | 3000/Tape & Reel |

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



Kxx = Product Type Marking Code  
For Symmetrical Configuration, No Orientation Indicator  
KL6 = BAT54ADW  
KL7 = BAT54CDW  
KL8 = BAT54SDW  
KLB = BAT54BRW  
KLA = BAT54TW  
YM = Date Code Marking  
Y = Year (ex: N = 2002)  
M = Month (ex: 9 = September)

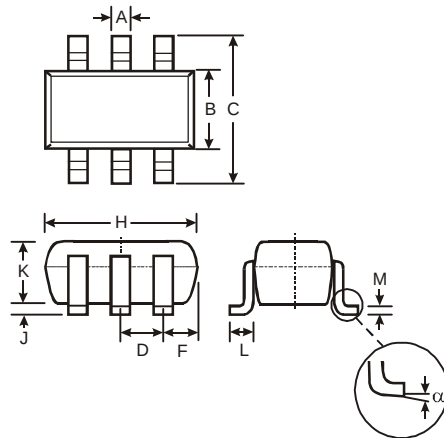
Date Code Key

| Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | M    | N    | P    | R    | S    | T    | U    | V    | W    | X    | Y    | Z    | A    | B    | C    |

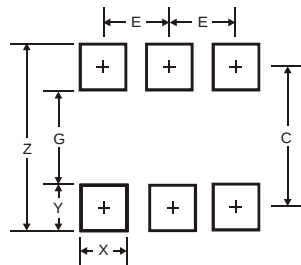
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |

## Package Outline Dimensions



| SOT-363              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 0.10         | 0.30 |
| B                    | 1.15         | 1.35 |
| C                    | 2.00         | 2.20 |
| D                    | 0.65 Nominal |      |
| 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 |
| α                    | 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           |
| C          | 1.9           |
| E          | 0.65          |

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