

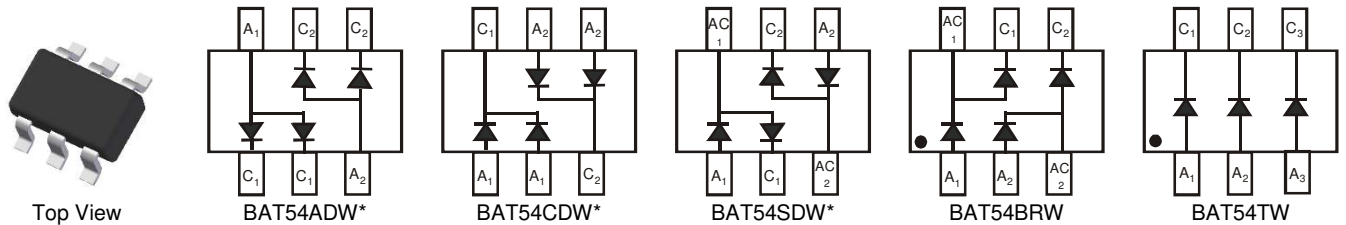
Features

- Low-Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface-Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **An automotive-compliant part is available under separate datasheet ([BAT54SDWQ/TWQ](#))**

Mechanical Data

- Package: SOT363
- Package Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208(③)
- Weight: 0.006 grams (Approximate)

SOT363 (Standard)



*Symmetrical configuration, no orientation indicator.

Ordering Information (Note 4)

| Part Number | Package | Packing | |
|--------------|-------------------|---------|-------------|
| | | Qty. | Carrier |
| BAT54ADW-7-F | SOT363 (Standard) | 3,000 | Tape & Reel |
| BAT54CDW-7-F | SOT363 (Standard) | 3,000 | Tape & Reel |
| BAT54SDW-7-F | SOT363 (Standard) | 3,000 | Tape & Reel |
| BAT54BRW-7-F | SOT363 (Standard) | 3,000 | Tape & Reel |
| BAT54TW-7-F | SOT363 (Standard) | 3,000 | Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information

| Part Number | Marking Information | |
|--|---------------------|---|
| BAT54BRW-7-F BAT54TW-7-F | | <p>Kxx = Product Type Marking Code KLB = BAT54BRW KLA = BAT54TW</p> <p>YM & YM = Date Code Marking Y & Y = Year (ex: K = 2023) M = Month (ex: 9 = September)</p> |
| BAT54ADW-7-F BAT54CDW-7-F BAT54SDW-7-F | | <p>Kxx = Product Type Marking Code KL6 = BAT54ADW KL7 = BAT54CDW KL8 = BAT54SDW</p> <p>YM & YM = Date Code Marking Y & Y = Year (ex: K = 2023) M = Month (ex: 9 = September)</p> |

Date Code Key

| Year | 2001 | - | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|------|------|---|------|------|------|------|------|------|------|------|------|------|
| Code | N | - | K | L | M | N | O | P | R | S | T | U |

| 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_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|--|------------------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | | |
| Working Peak Reverse Voltage | V _{RWM} | 30 | V |
| DC Blocking Voltage | V _R | | |
| Forward Continuous Current (Note 5) | I _F | 200 | mA |
| Repetitive Peak Forward Current (Note 5) | I _{FRM} | 300 | mA |
| Forward Surge Current (Note 5) | I _{FSM} | 600 | mA |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Power Dissipation (Note 5) | P _D | 200 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 5) | R _{θJA} | 625 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|-----|-----------------------------------|------|--|
| Reverse Breakdown Voltage (Note 6) | V _{(BR)R} | 30 | — | — | V | I _R = 100μA |
| Forward Voltage (Note 6) | V _F | — | — | 240 320 400 500 1,000 | mV | I _F = 0.1mA I _F = 1mA I _F = 10mA I _F = 30mA I _F = 100mA |
| Reverse Leakage Current (Note 6) | I _R | — | — | 2.0 | μA | V _R = 25V |
| Total Capacitance | C _T | — | — | 10 | pF | V _R = 1.0V, f = 1.0MHz |
| Reverse Recovery Time | t _{RR} | — | — | 5.0 | ns | I _F = 10mA through I _R = 10mA to I _R = 1.0mA, R _L = 100Ω |

Notes: 5. Device mounted on 1*MRP FR-4 PC board, 2oz PCB, pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
 6. Short duration pulse test used to minimize self-heating effect.

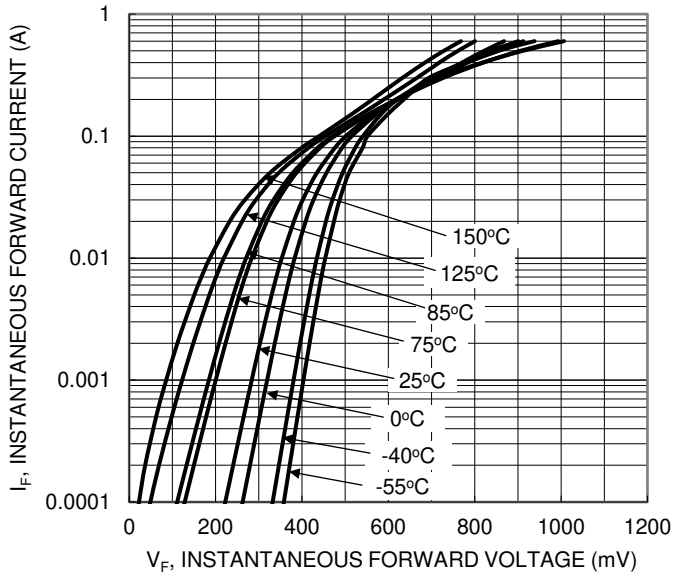


Fig.1 Typical Forward Characteristics

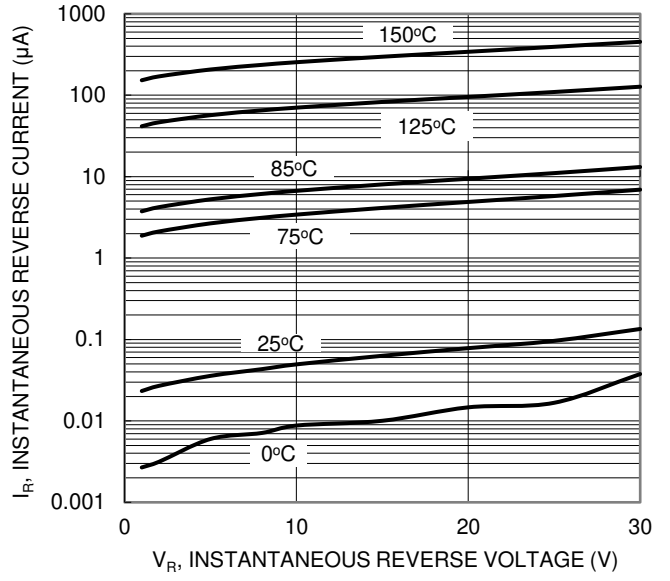


Fig.2 Typical Reverse Characteristics

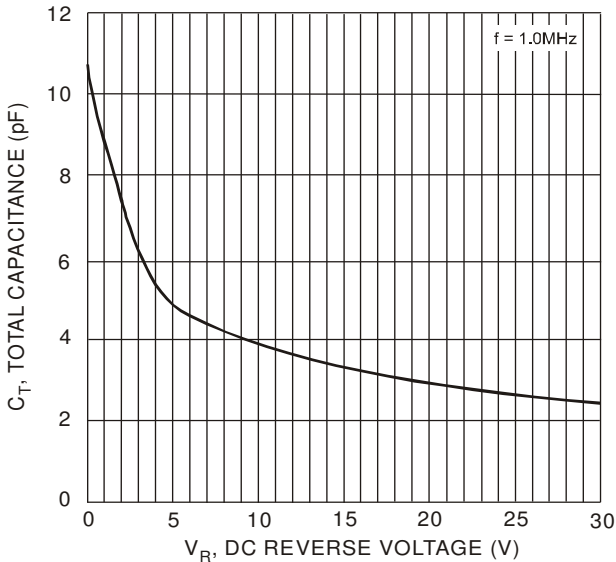


Fig.3 Total Capacitance vs. Reverse Voltage

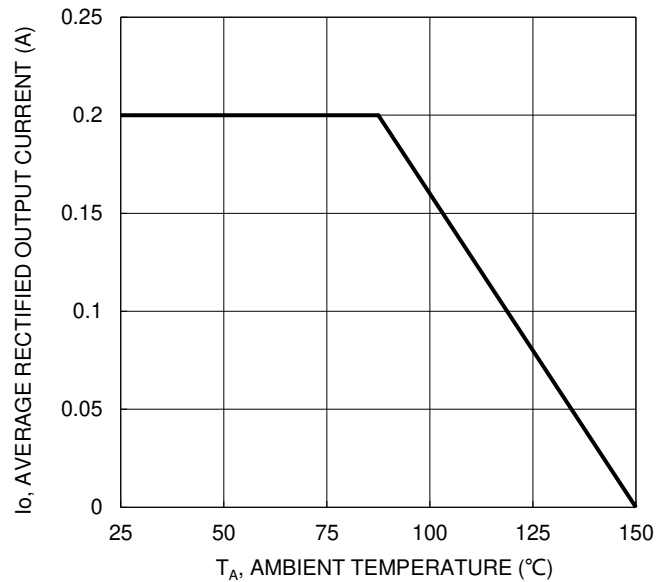
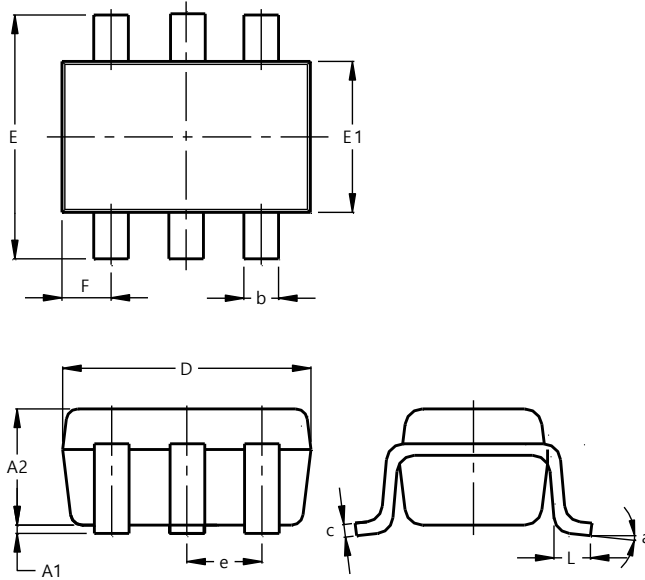


Fig.4 DC Forward Current Derating

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT363 (Standard)

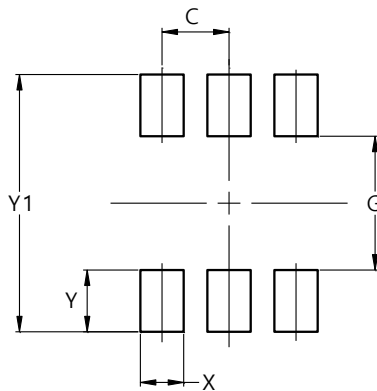


| SOT363 (Standard) | | | |
|-----------------------------|------|------|-------|
| Dim | Min | Max | Typ |
| A1 | 0.00 | 0.10 | 0.05 |
| A2 | 0.80 | 1.00 | 0.90 |
| b | 0.10 | 0.35 | 0.225 |
| c | 0.08 | 0.22 | 0.15 |
| D | 1.80 | 2.20 | 2.00 |
| E | 2.00 | 2.45 | 2.225 |
| E1 | 1.15 | 1.35 | 1.25 |
| e | -- | -- | 0.65 |
| F | 0.25 | 0.45 | 0.35 |
| L | 0.25 | 0.46 | 0.355 |
| a | 0° | 8° | -- |
| All Dimensions in mm | | | |

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT363 (Standard)



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 0.650 |
| G | 1.300 |
| X | 0.420 |
| Y | 0.600 |
| Y1 | 2.500 |

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