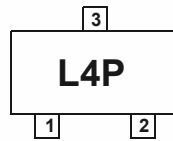
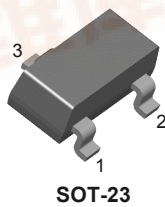




February 2005

# BAT54/A/C/S

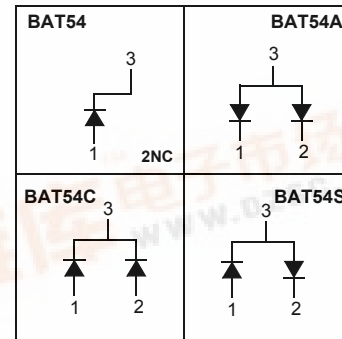
## Schottky Diodes



### MARKING

BAT54 = L4P BAT54A = L42  
BAT54C = L43 BAT54S = L44

### Connection Diagram



### Absolute Maximum Ratings \*

$T_a = 25^\circ\text{C}$  unless otherwise noted

| Symbol      | Parameter                                                             | Value       | Unit             |
|-------------|-----------------------------------------------------------------------|-------------|------------------|
| $V_{RRM}$   | Maximum Repetitive Reverse Voltage                                    | 30          | V                |
| $I_{F(AV)}$ | Average Rectified Forward Current                                     | 200         | mA               |
| $I_{FSM}$   | Non-repetitive Peak Forward Surge Current<br>Pulse Width = 1.0 second | 600         | mA               |
| $T_{STG}$   | Storage Temperature Range                                             | -55 to +150 | $^\circ\text{C}$ |
| $T_J$       | Operating Junction Temperature                                        | -55 to +150 | $^\circ\text{C}$ |

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### Thermal Characteristics

| Symbol          | Parameter                               | Value | Unit               |
|-----------------|-----------------------------------------|-------|--------------------|
| $P_D$           | Power Dissipation                       | 290   | mW                 |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 430   | $^\circ\text{C/W}$ |

### Electrical Characteristics

$T_C = 25^\circ\text{C}$  unless otherwise noted

| Symbol   | Parameter             | Conditions                                                                                                       | Min. | Max.                            | Units                     |
|----------|-----------------------|------------------------------------------------------------------------------------------------------------------|------|---------------------------------|---------------------------|
| $V_R$    | Breakdown Voltage     | $I_R = 10\mu\text{A}$                                                                                            | 30   |                                 | V                         |
| $V_F$    | Forward Voltage       | $I_F = 0.1\text{mA}$<br>$I_F = 1\text{mA}$<br>$I_F = 10\text{mA}$<br>$I_F = 30\text{mA}$<br>$I_F = 100\text{mA}$ |      | 240<br>320<br>400<br>500<br>0.8 | mV<br>mV<br>mV<br>mV<br>V |
| $I_R$    | Reverse Leakage       | $V_R = 25\text{V}$                                                                                               |      | 2                               | $\mu\text{A}$             |
| $C_T$    | Total Capacitance     | $V_R = 1\text{V}$ , $f = 1.0\text{MHz}$                                                                          |      | 10                              | pF                        |
| $t_{rr}$ | Reverse Recovery Time | $I_F = I_R = 10\text{mA}$ , $I_{RR} = 1.0\text{mA}$ ,<br>$R_L = 100\Omega$                                       |      | 5.0                             | ns                        |

## Typical Performance Characteristics

Figure 1. Forward Voltage vs Temperature

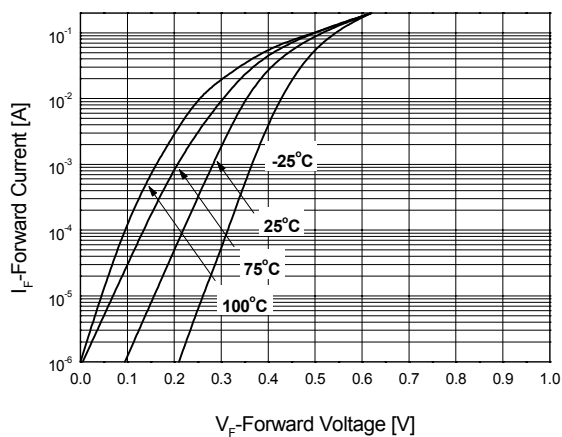


Figure 2. Reverse Leakage Current vs Temperature

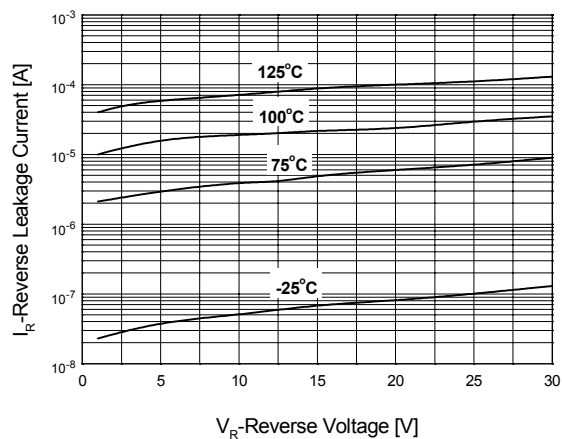
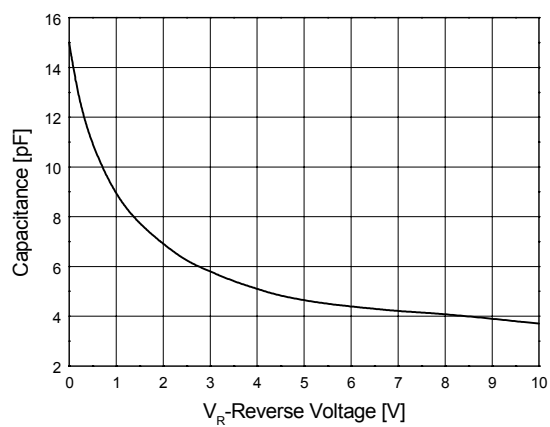


Figure 3. Capacitance vs Reverse Bias Voltage



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| ActiveArray™                         | FASTr™              | ISOPLANAR™    | Power247™           | Stealth™        |
| Bottomless™                          | FPS™                | LittleFET™    | PowerEdge™          | SuperFET™       |
| CoolFET™                             | FRFET™              | MICROCOUPLER™ | PowerSaver™         | SuperSOT™-3     |
| CROSSVOLT™                           | GlobalOptoisolator™ | MicroFET™     | PowerTrench®        | SuperSOT™-6     |
| DOME™                                | GTO™                | MicroPak™     | QFET®               | SuperSOT™-8     |
| EcoSPARK™                            | HiSeC™              | MICROWIRE™    | QS™                 | SyncFET™        |
| E <sup>2</sup> C MOS™                | I <sup>2</sup> C™   | MSX™          | QT Optoelectronics™ | TinyLogic®      |
| EnSigna™                             | i-Lo™               | MSXPro™       | Quiet Series™       | TINYOPTO™       |
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| FACT Quiet Series™                   |                     | OCXPro™       | RapidConnect™       | UHC™            |
| Across the board. Around the world.™ |                     | OPTOLOGIC®    | μSerDes™            | UltraFET®       |
| The Power Franchise®                 |                     | OPTOPLANAR™   | SILENT SWITCHER®    | UniFET™         |
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