# BAT750
# SOT23 Schottky barrier diode

## Summary

**$V_R$ = 40V**

**$I_F$ = 750mA**

**$V_F$ < 490mV @ 750mA**

## Description

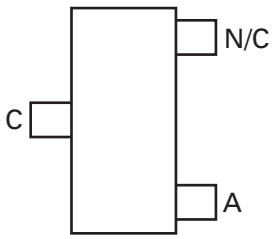
A high current Schottky barrier diode in a small outline surface mount package for applications where space is limited.


## Features

- Low $V_F$
- High current capability
- SOT23 package

## Applications

- DC-DC converters
- Mobile telecoms
- PCMIA




Top view

## Ordering information

| Device | Reel size (inches) | Tape width (mm) | Quantity per reel |
|---|---|---|---|
| BAT750TA | 7 | 8 | 3000 |

## Device marking

1G1

## Absolute maximum ratings

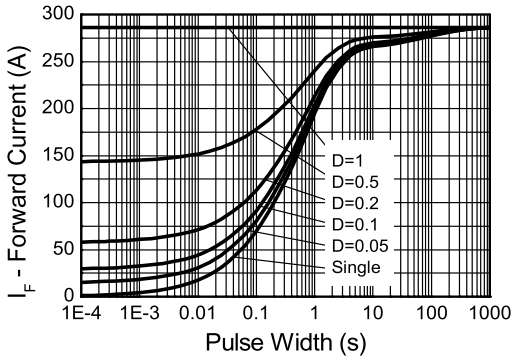
| Parameter | Symbol | Limit | Unit |
|---|---|---|---|
| Collector reverse voltage | $V_R$ | 40 | V |
| RMS reverse voltage | $V_{R(RMS)}$ | 28 | V |
| Forward current (continuous) | $I_F$ | 750 | mA |
| Forward voltage @ $I_F$ = 750mA | $V_F$ | 490 | mV |
| Average peak forward current; DC = 50% | $I_{FAV}$ | 1500 | mA |
| Non repetitive forward current t≤100μS<br>t≤8.3ms | $I_{FSM}$ | 12<br>5.5 | A |
| Power dissipation @ $T_{amb}$ = 25°C | $P_{tot}$ | 350 | mW |
| Typical thermal resistance, junction to ambient air | $R_{\Theta JA}$ | 286 | °C/W |
| Storage temperature range | $T_{stg}$ | -55 to +150 | °C |
| Junction temperature | $T_j$ | 125 | °C |

## Electrical characteristics (@ $T_{amb}$ = 25°C unless otherwise stated)

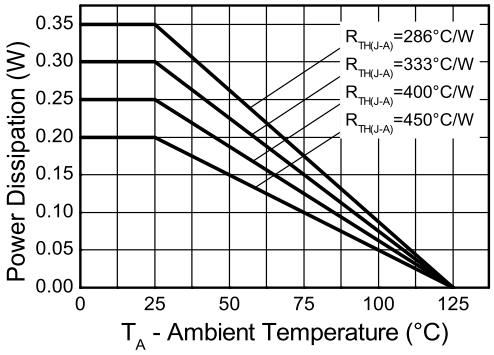
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|
| Reverse breakdown voltage | $V_{(BR)R}$ | 40 | 60 | | V | $I_R$ = 300μA |
| Forward voltage | $V_F$ | | 225 | 280 | mV | $I_F$ = 50mA (*) |
| | | | 235 | 310 | mV | $I_F$ = 100mA(*) |
| | | | 290 | 350 | mV | $I_F$ = 250mA(*) |
| | | | 340 | 420 | mV | $I_F$ = 500mA(*) |
| | | | 390 | 490 | mV | $I_F$ = 750mA(*) |
| | | | 440 | 540 | mV | $I_F$ = 1000mA(*) |
| | | | 530 | 650 | mV | $I_F$ = 1500mA(*) |
| Reverse current | $I_R$ | | 50 | 100 | μA | $V_R$ = 30V |
| Diode capacitance | $C_D$ | | 25 | - | pF | $V_R$ = 25V, f = 1.0MHz |
| Reverse recovery time | $t_{rr}$ | | 5 | - | ns | $I_F$ = $I_R$ = 100mA,<br>$I_{rr}$ = 10mA |

**NOTES:**
(*) Measured under pulsed conditions. Pulse width = 300μ duty cycle ≤2%.

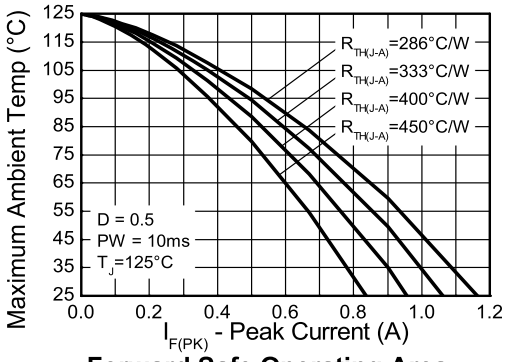
## Thermal data



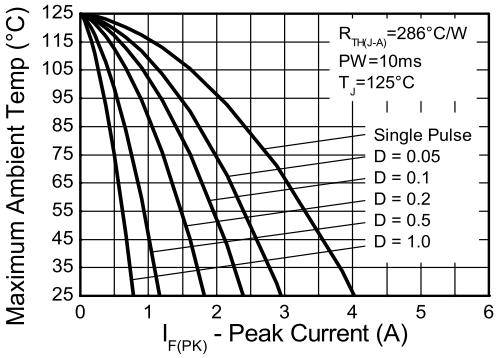

**Transient Thermal Impedance**



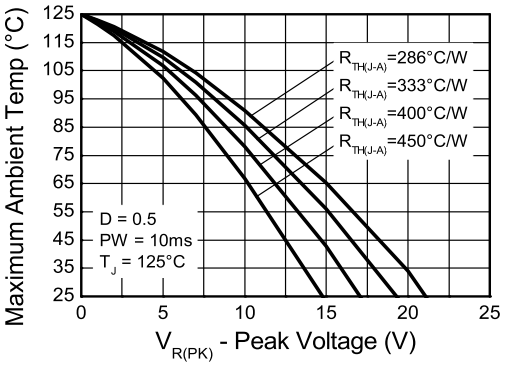

**Derating Curves**



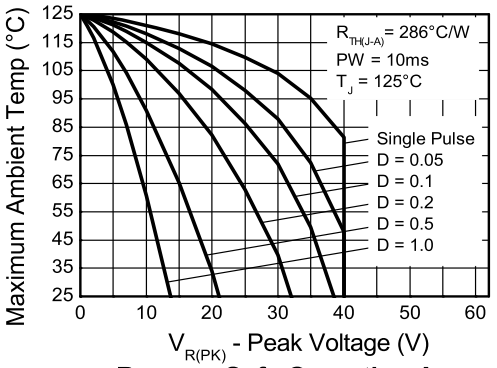

**Forward Safe Operating Area**




**Forward Safe Operating Area**

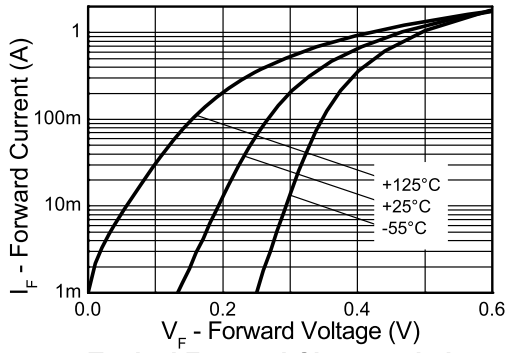



**Reverse Safe Operating Area**

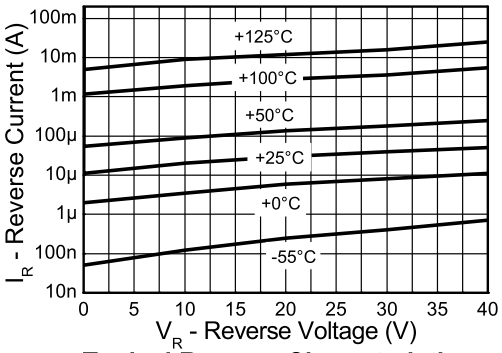



**Reverse Safe Operating Area**

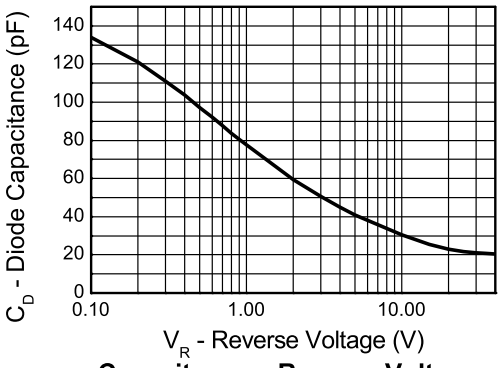
## Typical characteristics




**Typical Forward Characteristics**

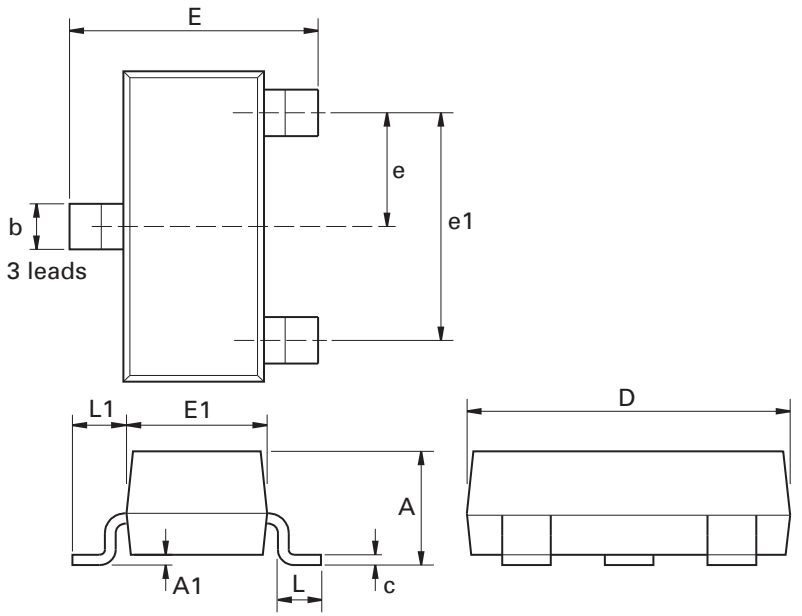



**Typical Reverse Characteristics**




**Capacitance v Reverse Voltage**

## Package outline - SOT23




| Dim. | Millimeters | | Inches | | Dim. | Millimeters | | Inches | |
|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Max. | Max. |
| A | - | 1.12 | - | 0.044 | e1 | 1.90 NOM | | 0.075 NOM | |
| A1 | 0.01 | 0.10 | 0.0004 | 0.004 | E | 2.10 | 2.64 | 0.083 | 0.104 |
| b | 0.30 | 0.50 | 0.012 | 0.020 | E1 | 1.20 | 1.40 | 0.047 | 0.055 |
| C | 0.085 | 0.120 | 0.003 | 0.008 | L | 0.25 | 0.62 | 0.018 | 0.024 |
| D | 2.80 | 3.04 | 0.110 | 0.120 | L1 | 0.45 | 0.62 | 0.018 | 0.024 |
| e | 0.95 NOM | | 0.0375 NOM | | - | - | - | - | - |

**Note:** Controlling dimensions are in millimeters. Approximate dimensions are provided in inches

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| | |
|---|---|
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| | |
|---|---|
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