



BC857B

SMALL SIGNAL PNP TRANSISTOR

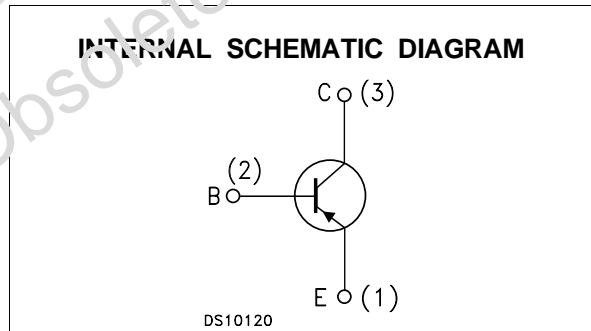
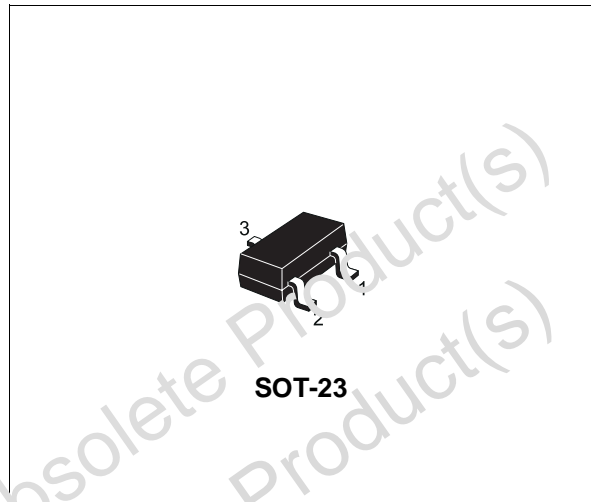
PRELIMINARY DATA

| Type | Marking |
|--------|---------|
| BC857B | 3F |

- SILICON EPITAXIAL PLANAR PNP TRANSISTOR
- MINIATURE SOT-23 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- THE NPN COMPLEMENTARY TYPE IS BC847B

APPLICATIONS

- WELL SUITABLE FOR PORTABLE EQUIPMENT
- SMALL LOAD SWITCH TRANSISTOR WITH HIGH GAIN AND LOW SATURATION VOLTAGE



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|---|------------|------------------|
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | -50 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | -45 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | -5 | V |
| I_C | Collector Current | -100 | mA |
| I_{CM} | Collector Peak Current | -200 | mA |
| P_{tot} | Total Dissipation at $T_C = 25\text{ }^\circ\text{C}$ | 250 | mW |
| T_{stg} | Storage Temperature | -65 to 150 | $^\circ\text{C}$ |
| T_j | Max. Operating Junction Temperature | 150 | $^\circ\text{C}$ |

BC857B

THERMAL DATA

| | | | | |
|---------------|-------------------------------------|-----|-----|-----------------------------|
| $R_{thj-amb}$ | Thermal Resistance Junction-Ambient | Max | 500 | $^{\circ}\text{C}/\text{W}$ |
|---------------|-------------------------------------|-----|-----|-----------------------------|

• Device mounted on a PCB area of 1 cm^2 .

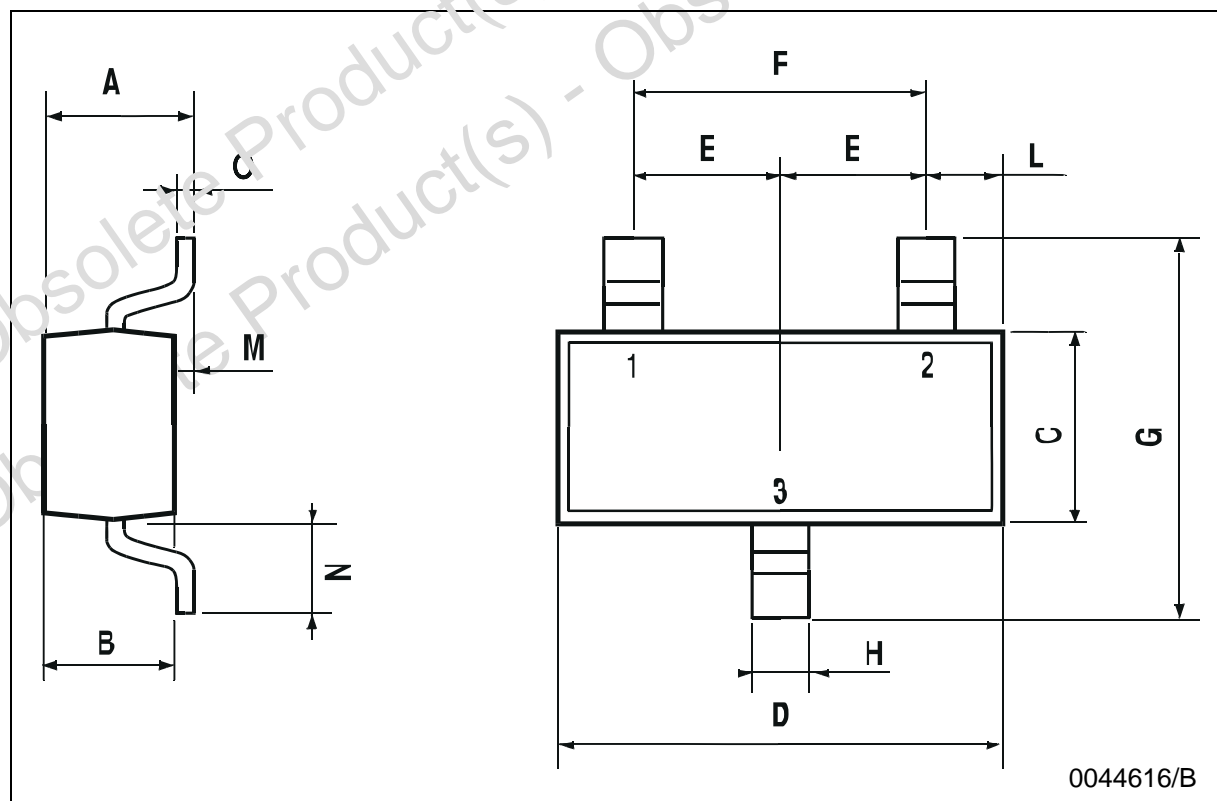
ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------|---|---|------|----------------|----------------|---------------------|
| I_{CBO} | Collector Cut-off Current ($I_E = 0$) | $V_{CB} = -30\text{ V}$ $V_{CB} = -30\text{ V}$ $T_C = 150\text{ }^{\circ}\text{C}$ | | -1 | -15 -5 | nA μA |
| I_{EBO} | Emitter Cut-off Current ($I_C = 0$) | $V_{EB} = -5\text{ V}$ | | | -100 | nA |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_E = 0$) | $I_C = -10\text{ }\mu\text{A}$ | -50 | | | V |
| $V_{(BR)CEO}^*$ | Collector-Emitter Breakdown Voltage ($I_B = 0$) | $I_C = -2\text{ mA}$ | -45 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage ($I_C = 0$) | $I_E = -10\text{ }\mu\text{A}$ | -5 | | | V |
| $V_{CE(sat)}^*$ | Collector-Emitter Saturation Voltage | $I_C = -10\text{ mA}$ $I_B = -0.5\text{ mA}$ $I_C = -100\text{ mA}$ $I_B = -5\text{ mA}$ | | -0.07 -0.25 | -0.3 -0.65 | V V |
| $V_{BE(sat)}^*$ | Base-Emitter Saturation Voltage | $I_C = -10\text{ mA}$ $I_B = -0.5\text{ mA}$ $I_C = -100\text{ mA}$ $I_B = -5\text{ mA}$ | | -0.7 -0.85 | | V V |
| $V_{BE(on)}^*$ | Base-Emitter On Voltage | $I_C = -2\text{ mA}$ $V_{CE} = -5\text{ V}$ $I_C = -10\text{ mA}$ $V_{CE} = -5\text{ V}$ | -0.6 | -0.65 | -0.75 -0.82 | V V |
| h_{FE} | DC Current Gain | $I_C = -2\text{ mA}$ $V_{CE} = -5\text{ V}$ | 220 | | 475 | |
| f_T | Transition Frequency | $I_C = -10\text{ mA}$ $V_{CE} = -5\text{ V}$ $f = 100\text{ MHz}$ | 100 | | | MHz |
| C_{CBO} | Collector-Base Capacitance | $I_E = 0$ $V_{CB} = -10\text{ V}$ $f = 1\text{ MHz}$ | | 4.5 | | pF |
| NF | Noise Figure | $V_{CE} = -5\text{ V}$ $I_C = -0.2\text{ mA}$ $f = 1\text{ KHz}$ $\Delta f = 200\text{ Hz}$ $R_G = 2\text{ K}\Omega$ | | 2 | 10 | dB |

* Pulsed: Pulse duration = $300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$

SOT-23 MECHANICAL DATA

| DIM. | mm | | | mils | | |
|------|------|------|------|-------|------|------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 0.85 | | 1.1 | 33.4 | | 43.3 |
| B | 0.65 | | 0.95 | 25.6 | | 37.4 |
| C | 1.20 | | 1.4 | 47.2 | | 55.1 |
| D | 2.80 | | 3 | 110.2 | | 118 |
| E | 0.95 | | 1.05 | 37.4 | | 41.3 |
| F | 1.9 | | 2.05 | 74.8 | | 80.7 |
| G | 2.1 | | 2.5 | 82.6 | | 98.4 |
| H | 0.38 | | 0.48 | 14.9 | | 18.8 |
| L | 0.3 | | 0.6 | 11.8 | | 23.6 |
| M | 0 | | 0.1 | 0 | | 3.9 |
| N | 0.3 | | 0.65 | 11.8 | | 25.6 |
| O | 0.09 | | 0.17 | 3.5 | | 6.7 |



Obsolete Product(s) - Obsolete Product(s)
Obsolete Product(s) - Obsolete Product(s)

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics

© 2002 STMicroelectronics – Printed in Italy – All Rights Reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[STMicroelectronics:](#)

[BC857B](#)