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# BC857B

## SMALL SIGNAL PNP TRANSISTOR

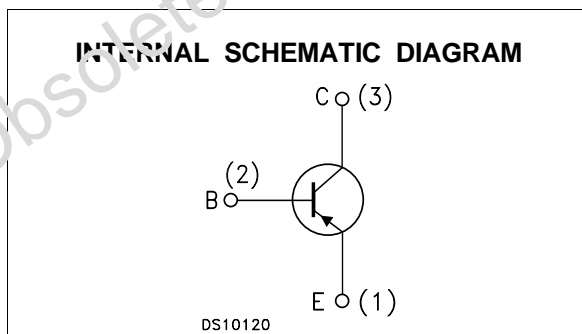
PRELIMINARY DATA

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	$^\circ\text{C}$

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### THERMAL DATA

R <sub>thj-amb</sub> •	Thermal Resistance Junction-Ambient	Max	500	°C/W
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• Device mounted on a PCB area of 1 cm<sup>2</sup>.

### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

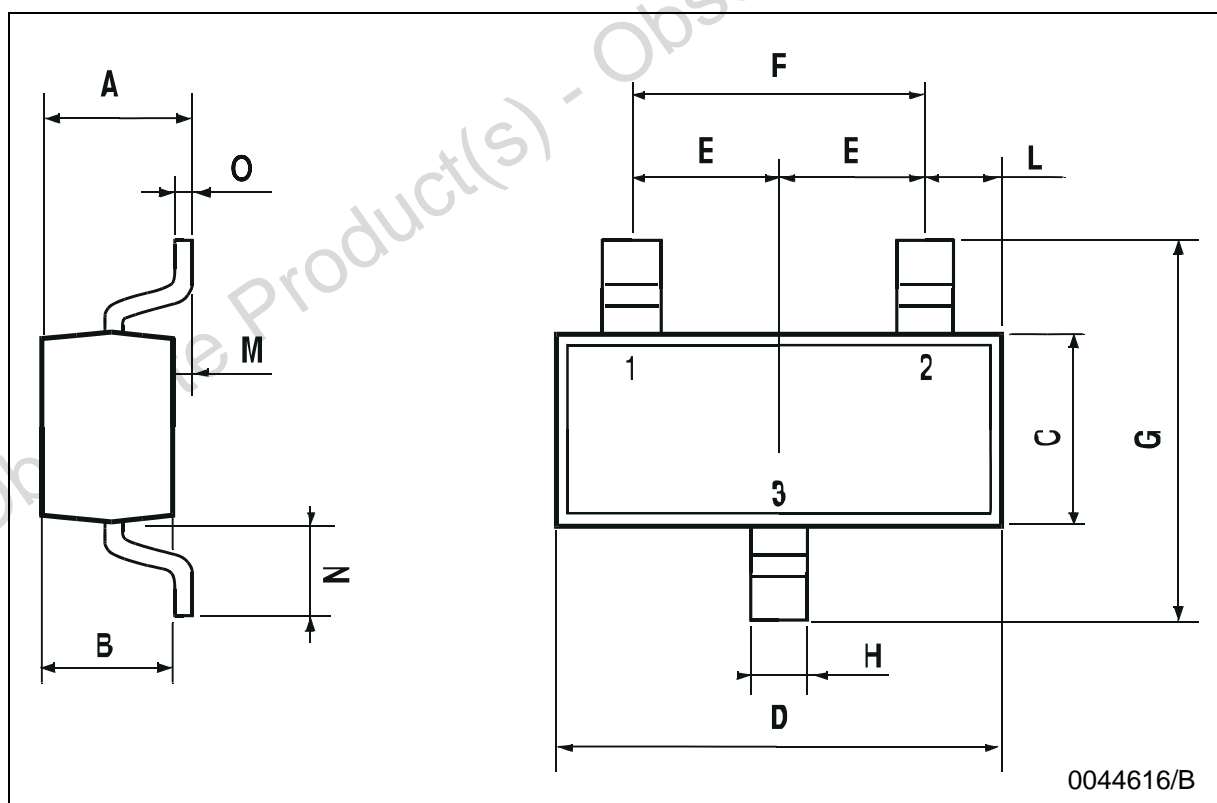
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	V <sub>CB</sub> = -30 V V <sub>CB</sub> = -30 V      T <sub>C</sub> = 150 °C		-1	-15 -5	nA μA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = -5 V			-100	nA
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage (I <sub>E</sub> = 0)	I <sub>C</sub> = -10 μA	-50			V
V <sub>(BR)CEO*</sub>	Collector-Emitter Breakdown Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = -2 mA	-45			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = -10 μA	-5			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -10 mA      I <sub>B</sub> = -0.5 mA I <sub>C</sub> = -100 mA      I <sub>B</sub> = -5 mA		-0.07 -0.25	-0.3 -0.65	V V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = -10 mA      I <sub>B</sub> = -0.5 mA I <sub>C</sub> = -100 mA      I <sub>B</sub> = -5 mA		-0.7 -0.85		V V
V <sub>BE(on)*</sub>	Base-Emitter On Voltage	I <sub>C</sub> = -2 mA      V <sub>CE</sub> = -5 V I <sub>C</sub> = -10 mA      V <sub>CE</sub> = -5 V	-0.6	-0.65	-0.75 -0.82	V V
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = -2 mA      V <sub>CE</sub> = -5 V	220		475	
f <sub>T</sub>	Transition Frequency	I <sub>C</sub> = -10 mA      V <sub>CE</sub> = -5 V      f = 100MHz	100			MHz
C <sub>CBO</sub>	Collector-Base Capacitance	I <sub>E</sub> = 0      V <sub>CB</sub> = -10 V      f = 1 MHz		4.5		pF
NF	Noise Figure	V <sub>CE</sub> = -5 V      I <sub>C</sub> = -0.2 mA      f = 1KHz Δf = 200 Hz      R <sub>G</sub> = 2 KΩ		2	10	dB

\* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 2 %

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**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



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