



# BC817-25 BC817-40

## SMALL SIGNAL NPN TRANSISTORS

PRELIMINARY DATA

Type	Marking
BC817-25	6B
BC817-40	6C

- SILICON EPITAXIAL PLANAR NPN TRANSISTORS
- MINIATURE SOT-23 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- THE PNP COMPLEMENTARY TYPES ARE BC807-25 AND BC817-40 RESPECTIVELY

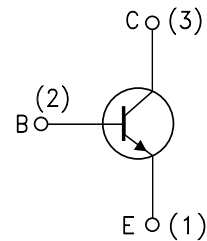
### APPLICATIONS

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



SOT-23

### INTERNAL SCHEMATIC DIAGRAM



### 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	0.5	A
$I_{CM}$	Collector Peak Current	1	A
$P_{tot}$	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	$^\circ\text{C}$

## BC817-25 / BC817-40

### 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>

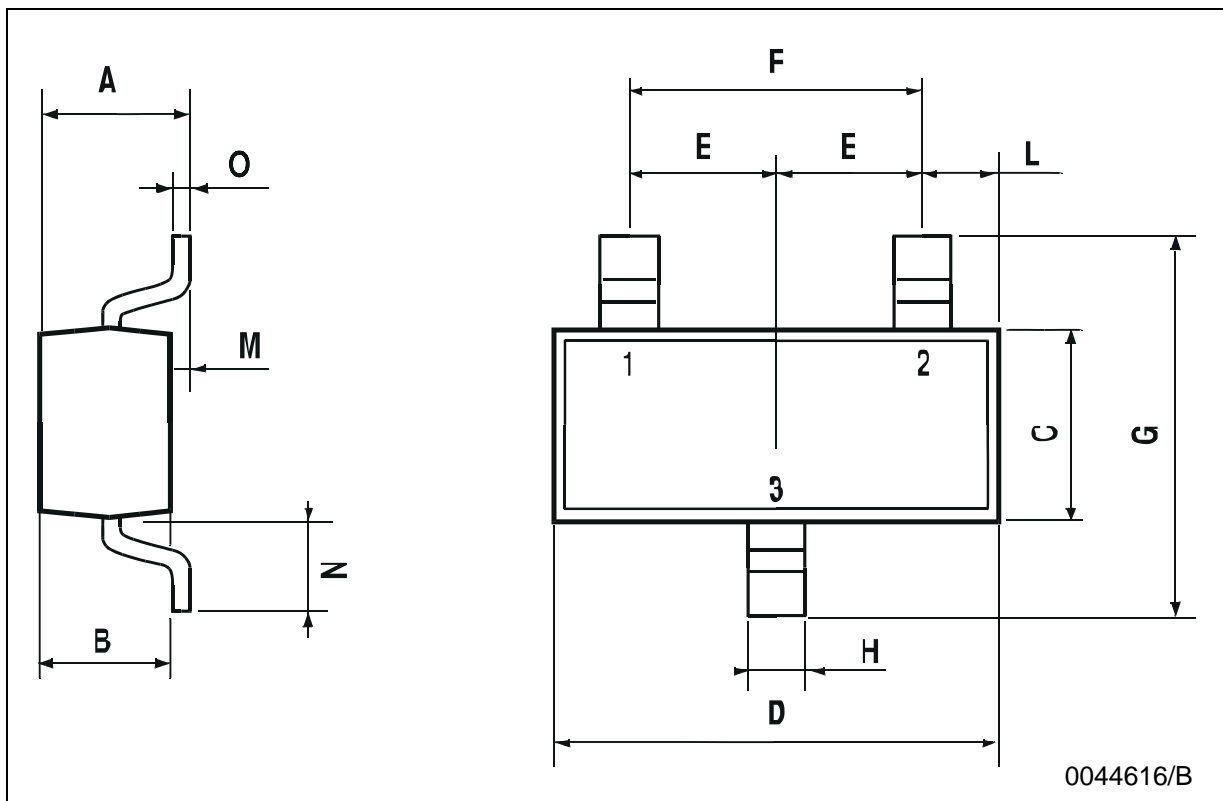
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

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> = 20 V V <sub>CB</sub> = 20 V      T <sub>C</sub> = 150°C			100 5	nA μA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>E</sub> = 0)	V <sub>EB</sub> = 5 V			100	nA
V <sub>(BR)CEO</sub> *	Collector-Emitter Breakdown Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 10 mA	45			V
V <sub>CE(sat)</sub> *	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 500 mA      I <sub>B</sub> = 50 mA			0.7	V
V <sub>BE(on)</sub> *	Base-Emitter On Voltage	I <sub>C</sub> = 500 mA      V <sub>CE</sub> = 1 V			1.2	V
h <sub>FE</sub> *	DC Current Gain	I <sub>C</sub> = 100 mA      V <sub>CE</sub> = 1 V for <b>BC817-25</b> for <b>BC817-40</b>	160 250		400 600	
f <sub>T</sub>	Transition Frequency	I <sub>C</sub> = 10 mA      V <sub>CE</sub> = 5 V      f = 100 MHz	100			MHz
C <sub>CB0</sub>	Collector-Base Capacitance	I <sub>E</sub> = 0      V <sub>CB</sub> = 10 V      f = 1 MHz		8		pF

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



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