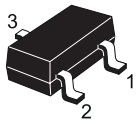
BC817-25
BC817-40

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

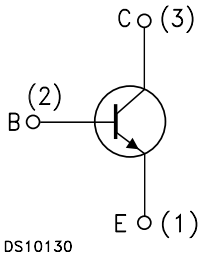


SOT-23

APPLICATIONS

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

INTERNAL SCHEMATIC DIAGRAM



Obsolete Product(s) - Obsolete Product(s)

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 ^oC	250	mW
T_{stg}	Storage Temperature	-65 to 150	^oC
T_j	Max. Operating Junction Temperature	150	^oC

THERMAL DATA

$R_{thj\text{-}amb}$ •	Thermal Resistance Junction-Ambient	Max	500	$^oC/W$

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

ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

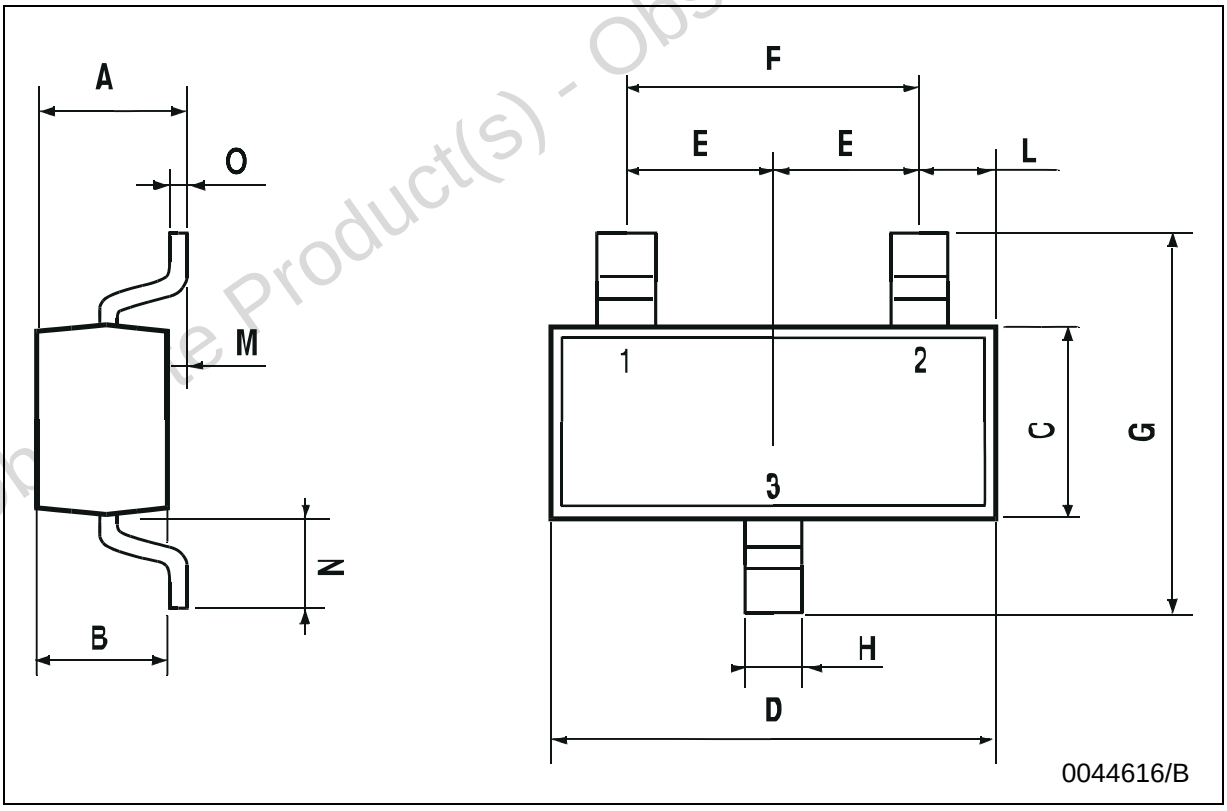
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CB} = 20 V V_{CB} = 20 V T_C = 150^oC			100 5	nA µA
I_{EBO}	Emitter Cut-off Current (I_E = 0)	V_{EB} = 5 V			100	nA
$V_{(BR)CEO}$*	Collector-Emitter Breakdown Voltage (I_B = 0)	I_C = 10 mA	45			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 500 mA I_B = 50 mA			0.7	V
$V_{BE(on)}$*	Base-Emitter On Voltage	I_C = 500 mA V_{CE} = 1 V			1.2	V
h_{FE}*	DC Current Gain	I_C = 100 mA V_{CE} = 1 V for **BC817-25** for **BC817-40**	 160 250		 400 600	
f_T	Transition Frequency	I_C = 10 mA V_{CE} = 5 V f =100 MHz	100			MHz
C_{CBO}	Collector-Base Capacitance	I_E = 0 V_{CB} = 10 V f = 1 MHz		8		pF

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

Obsolete Product(s) - Obsolete Product(s)

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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