



BC847B
BC847C

SMALL SIGNAL NPN TRANSISTORS

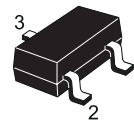
PRELIMINARY DATA

Type	Marking
BC847B	1F
BC847C	1G

- SILICON EPITAXIAL PLANAR NPN TRANSISTORS
- MINIATURE SOT-23 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- BC847B - THE PNP COMPLEMENTARY TYPE IS BC857B

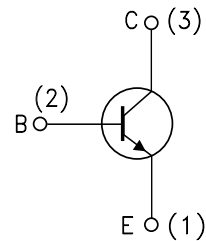
APPLICATIONS

- 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 ($I_C = 0$)	6	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	$^\circ\text{C}$

BC847B / BC847C

THERMAL DATA

R _{thj-amb} •	Thermal Resistance Junction-Ambient	Max	500	°C/W
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• Device mounted on a PCB area of 1 cm².

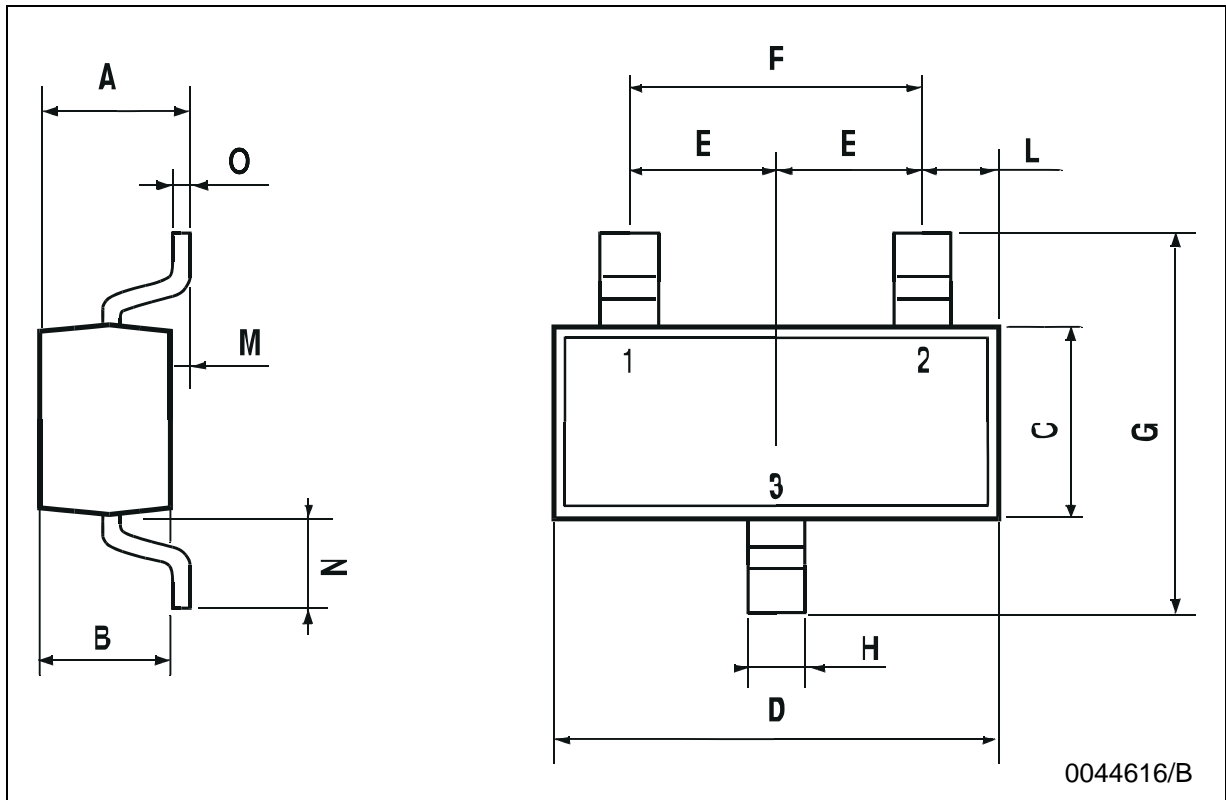
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 30 V V _{CB} = 30 V T _C = 150 °C			15 5	nA μA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			100	nA
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _E = 0)	I _C = 10 μA	50			V
V _{(BR)CEO*}	Collector-Emitter Breakdown Voltage (I _B = 0)	I _C = 2 mA	45			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage (I _C = 0)	I _E = 10 μA	6			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 10 mA I _B = 0.5 mA I _C = 100 mA I _B = 5 mA		0.09 0.2	0.25 0.6	V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 10 mA I _B = 0.5 mA I _C = 100 mA I _B = 5 mA		0.7 0.9		V V
V _{BE(on)*}	Base-Emitter On Voltage	I _C = 2 mA V _{CE} = 5 V I _C = 10 mA V _{CE} = 5 V	0.58	0.66	0.7 0.77	V V
h _{FE*}	DC Current Gain	I _C = 10 μA V _{CE} = 5 V for BC847B for BC847C I _C = 2 mA V _{CE} = 5 V for BC847B for BC847C		150 270 200 420	450 800	
f _T	Transition Frequency	I _C = 10 mA V _{CE} = 5 V f = 100MHz	100			MHz
C _{CBO}	Collector-Base Capacitance	I _E = 0 V _{CB} = 10 V f = 1 MHz		2.5		pF
NF	Noise Figure	V _{CE} = 5 V I _C = 0.2 mA f = 1KHz Δf = 200 Hz R _G = 2 KΩ		2	10	dB

* 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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