



BC847BW
BC847CW

SMALL SIGNAL NPN TRANSISTORS

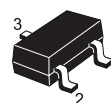
PRELIMINARY DATA

Type	Marking
BC847BW	1FW
BC847CW	1GW

- SILICON EPITAXIAL PLANAR NPN TRANSISTORS
- MINIATURE SOT-323 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- BC847BW - THE PNP COMPLEMENTARY TYPE IS BC857BW

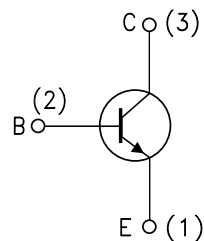
APPLICATIONS

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



SOT-323

INTERNAL SCHEMATIC DIAGRAM



DS10130

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 $T_C = 25\text{ }^{\circ}\text{C}$	200	mW
T_{stg}	Storage Temperature	-65 to 150	$^{\circ}\text{C}$
T_j	Max. Operating Junction Temperature	150	$^{\circ}\text{C}$

BC847BW / BC847CW

THERMAL DATA

R _{thj-amb} •	Thermal Resistance Junction-Ambient	Max	625	°C/W
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• Device mounted on a PCB area of 1 cm².

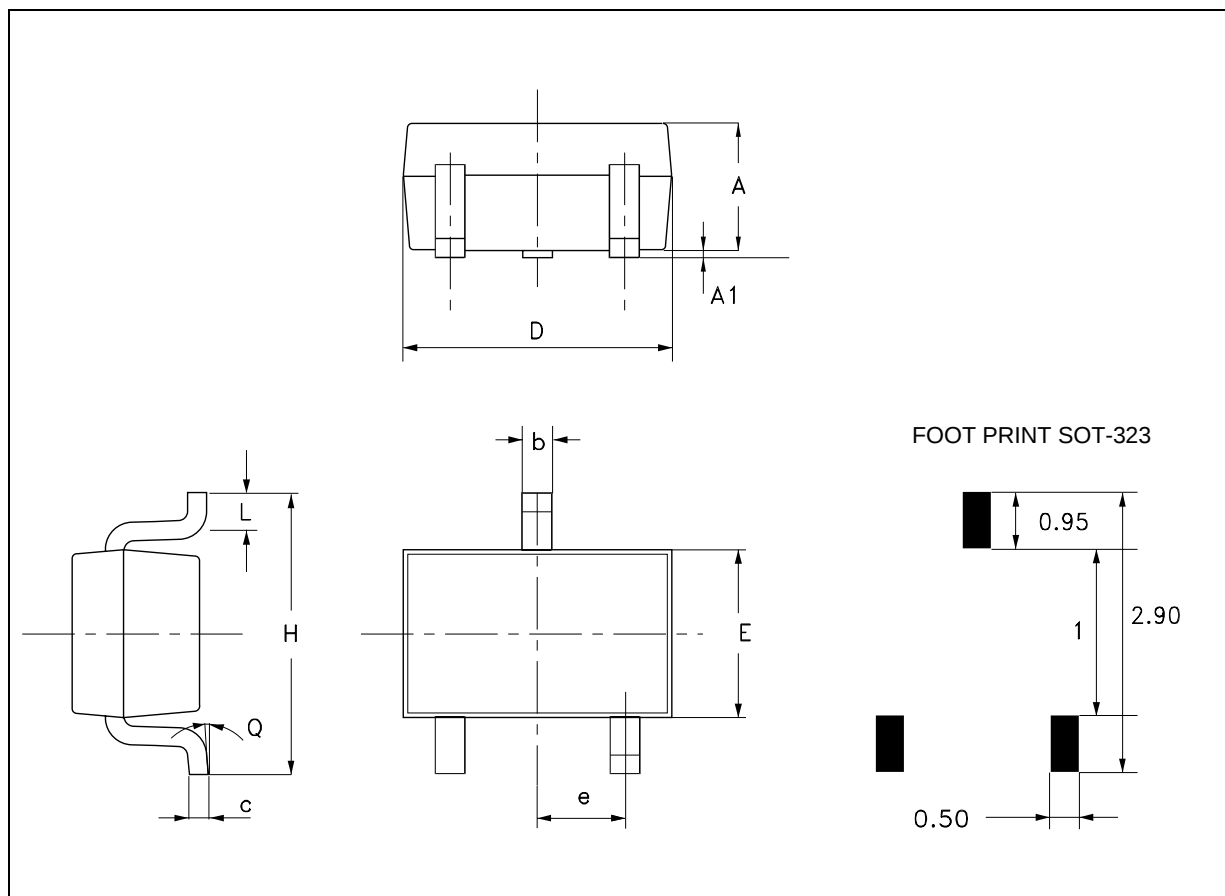
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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 BC847BW for BC847CW I _C = 2 mA V _{CE} = 5 V for BC847BW for BC847CW		150 270 200 420		
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-323 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	0.8		1.1	0.031		0.043
A1	0		0.1	0		0.003
b	0.25		0.4	0.009		0.015
c	0.1		0.26	0.004		0.010
D	1.8	2.0	2.2	0.070	0.078	0.086
E	1.15	1.25	1.35	0.045	0.049	0.053
e		0.65			0.025	
H	1.8	2.1	2.4	0.070	0.082	0.094
L	0.1	0.2	0.3	0.004	0.007	0.011
Q	0		10°	0		10°



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