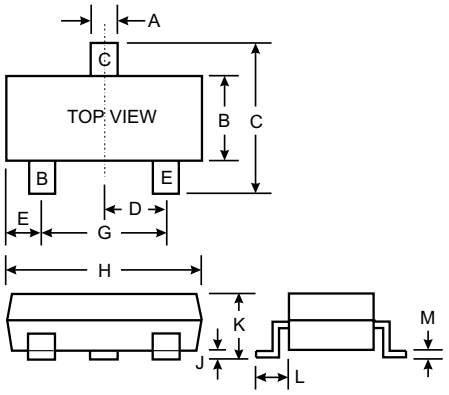
BC846AW - BC848CW

NPN SURFACE MOUNT SMALL SIGNAL TRANSISTOR

NEW PRODUCT

Features

- Ideally Suited for Automatic Insertion
- Complementary PNP Types Available (BC856W-BC858W)
- For Switching and AF Amplifier Applications



SOT-323		
Dim	**Min**	**Max**
A	0.30	0.40
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
All Dimensions in mm		

Mechanical Data

- Case: SOT-323, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Pin Connections and Marking Codes (See Table & Diagram)
- Approx. Weight: 0.006 grams

Marking Code (Note 2)			
Type	**Marking**	**Type**	**Marking**
BC846AW	K1Q	BC847CW	K1M
BC846BW	K1R	BC848AW	K1J, K1E, K1Q
BC847AW	K1E, K1Q	BC848BW	K1K, K1F, K1R
BC847BW	K1F, K1R	BC848CW	K1L, K1M

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Collector-Base Voltage	BC846 BC847 BC848	V_{CBO}	80 50 30	V
Collector-Emitter Voltage	BC846 BC847 BC848	V_{CEO}	65 45 30	V
Emitter-Base Voltage	BC846, BC847 BC848	V_{EBO}	6.0 5.0	V
Collector Current		I_C	100	mA
Peak Collector Current		I_{CM}	200	mA
Peak Emitter Current		I_{EM}	200	mA
Power Dissipation (Note 1)		P_d	200	mW
Operating and Storage Temperature Range		T_j, T_{STG}	-65 to +150	°C

Notes: 1. Package mounted on FR4 printed circuit board.
2. Current gain subgroup “C” is not available for BC846W.

NEW PRODUCT

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage (Note 3)	BC846 BC847 BC848	$V_{(BR)CBO}$	80 50 30	— — —	— — —	V	I_C = 10μA, I_B = 0
Collector-Emitter Breakdown Voltage (Note 3)	BC846 BC847 BC848	$V_{(BR)CEO}$	65 45 30	— — —	— — —	V	I_C = 10mA, I_B = 0
Emitter-Base Breakdown Voltage (Note 3)	BC846, BC847 BC848	$V_{(BR)EBO}$	6 5	—	—	V	I_E = 1μA, I_C = 0
DC Current Gain (Note 3)	Current Gain Group A B C	h_{FE}	110 200 420	180 290 520	220 450 800	—	V_{CE} = 5.0V, I_C = 2.0mA
Thermal Resistance, Junction to Ambient Air		$R_{\theta JA}$	—	—	625	°C/W	Note 1
Collector-Emitter Saturation Voltage (Note 3)		$V_{CE(SAT)}$	—	90 200	250 600	mV	I_C = 10mA, I_B = 0.5mA I_C = 100mA, I_B = 5.0mA
Base-Emitter Saturation Voltage (Note 3)		$V_{BE(SAT)}$	—	700 900	—	mV	I_C = 10mA, I_B = 0.5mA I_C = 100mA, I_B = 5.0mA
Base-Emitter Voltage (Note 3)		$V_{BE(ON)}$	580 —	660 —	700 770	mV	V_{CE} = 5.0V, I_C = 2.0mA V_{CE} = 5.0V, I_C = 10mA
Collector-Cutoff Current (Note 3)		I_{CBO} I_{CBO}	— —	— —	15 5.0	nA μA	V_{CB} = 30V V_{CB} = 30V, T_A = 150°C
Gain Bandwidth Product		f_T	100	300	—	MHz	V_{CE} = 5.0V, I_C = 10mA, f = 100MHz
Collector-Base Capacitance		C_{CBO}	—	3.0	4.5	pF	V_{CB} = 10V, f = 1.0MHz
Noise Figure		NF	—	—	10	dB	V_{CE} = 5V, I_C = 200μA, R_S = 2.0kΩ, f = 1.0kHz, Δf = 200Hz

Notes: 1. Package mounted on FR4 printed circuit board.
2. Current gain subgroup “C” is not available for BC846W.
3. Short duration pulse test to minimize self-heating effect.