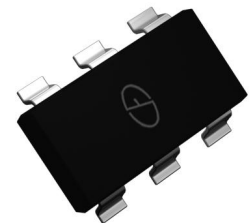


Dual-NPN+NPN Type Bipolar Transistor

Features

- Low Profile Package
- Ideal for Automated Placement
- Power Dissipation of 200mW
- High Stability and High Reliability
- RoHS Compliant



SOT-363

Applications

- amplifying signal
- Electronic switch
- Oscillating circuit
- variable resistance

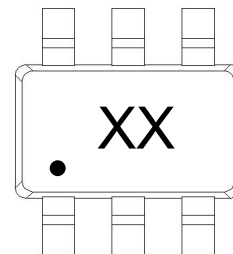
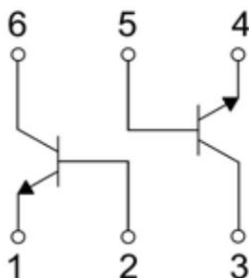
Pin definition



Mechanical Data

- Package: SOT-363
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020

Equivalent circuit



XX= Marking Code

BC846DW-A: 1A; BC846DW-B: 1B;

BC847DW-A: 1E; BC847DW-B: 1F; BC847DW-C: 1G;

BC848DW-A: 1J; BC848DW-B :1K; BC848DW-C :1L;

Maximum Ratings & Electrical Characteristics (T_A=25°C unless otherwise noted)

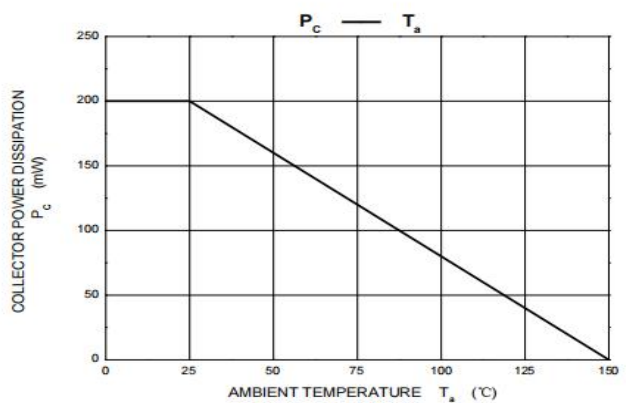
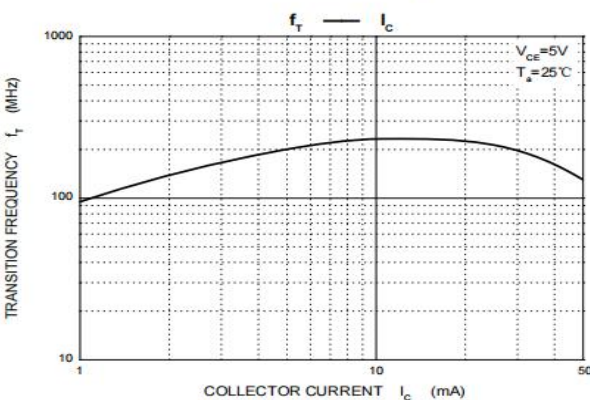
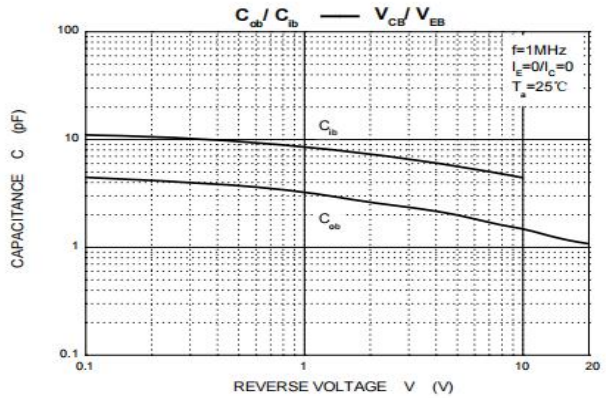
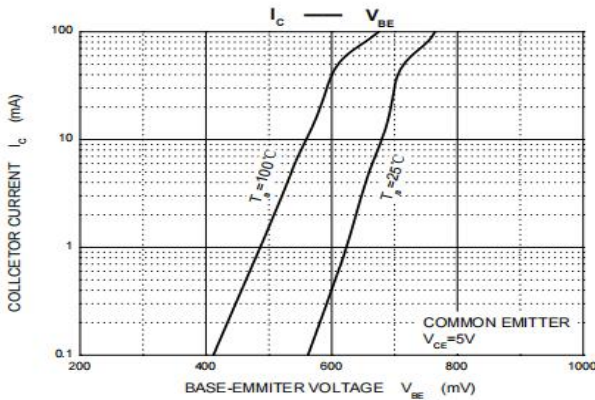
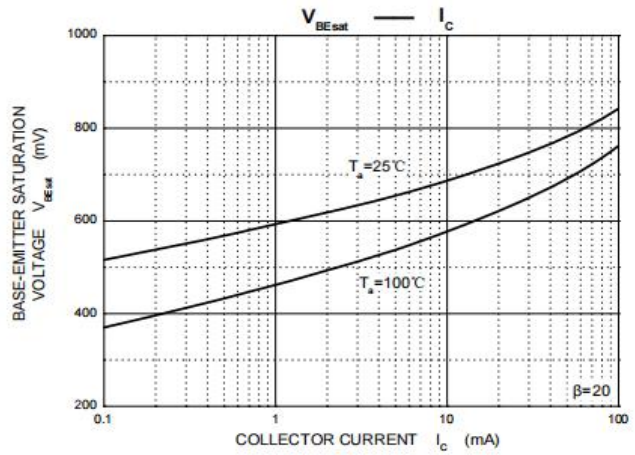
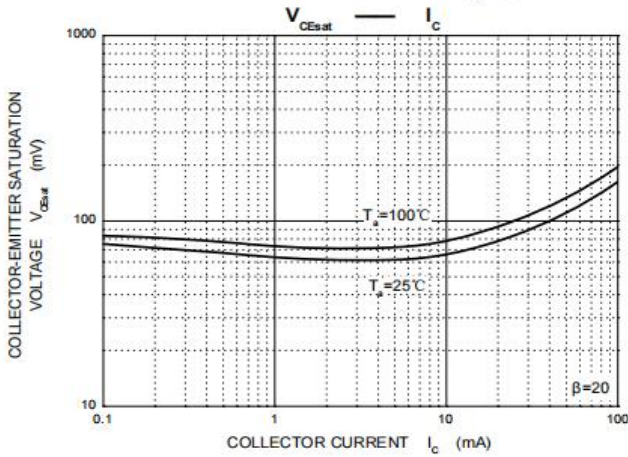
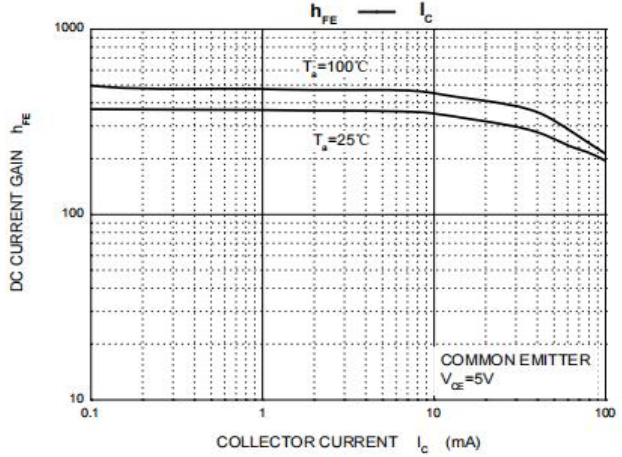
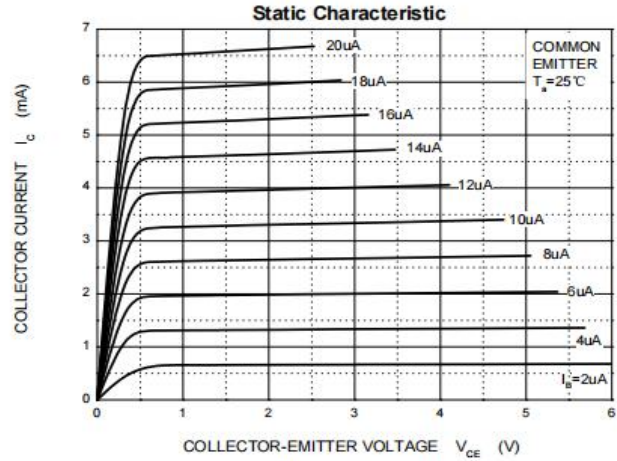
Parameter	Symbol	BC846DW	BC847DW	BC848DW	Unit
Collector-Base Voltage	V _{CBO}	80	50	30	V
Collector-Emitter Voltage	V _{CEO}	65	45	30	V
Emitter-Base Voltage	V _{EBO}	6			V
Collector Current Continuous	I _C	100			mA
Collector Power Dissipation	P _C	200			mW
Junction Temperature	T _J	-55 to +150			°C
Junction and Storage Temperature	T _{STG}	-55 to +150			°C

Electrical Specifications (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Collector-basebreakdown voltage	BC846DW	I _C =10uA	80			V
	BC847DW		50			V
	BC848DW		30			V
Collector-emitter breakdown voltage	BC846DW	I _C =10mA	65			V
	BC847DW		45			V
	BC848DW		30			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =10uA, I _C =0	6			V
Collector cut-off current	I _{CBO}	V _{CE} =30V, I _E =0			15	nA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _C =0			5	uA
DC current gain	BC846DW-A, BC847DW-A, BC848DW-A	V _{CE} =5V I _C =2mA	110		220	
	BC846DW-B, BC847DW-B, BC848DW-B		200		450	
	BC847DW-C, BC848DW-C		420		800	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =10mA, I _B =0.5mA			0.1	V
		I _C =100mA, I _B =5mA			0.3	V
Base -emitter saturation voltage	V _{BE(sat)}	I _C =10mA, I _B =0.5mA		0.77		V
Transition frequency	f _T	V _{CE} =5V, I _C =10mA, f=100MHz	100			MHz
Collector output capacitance	C _{ob}	V _{CB} =10V, f=1MHz, I _E =0			1.5	pF

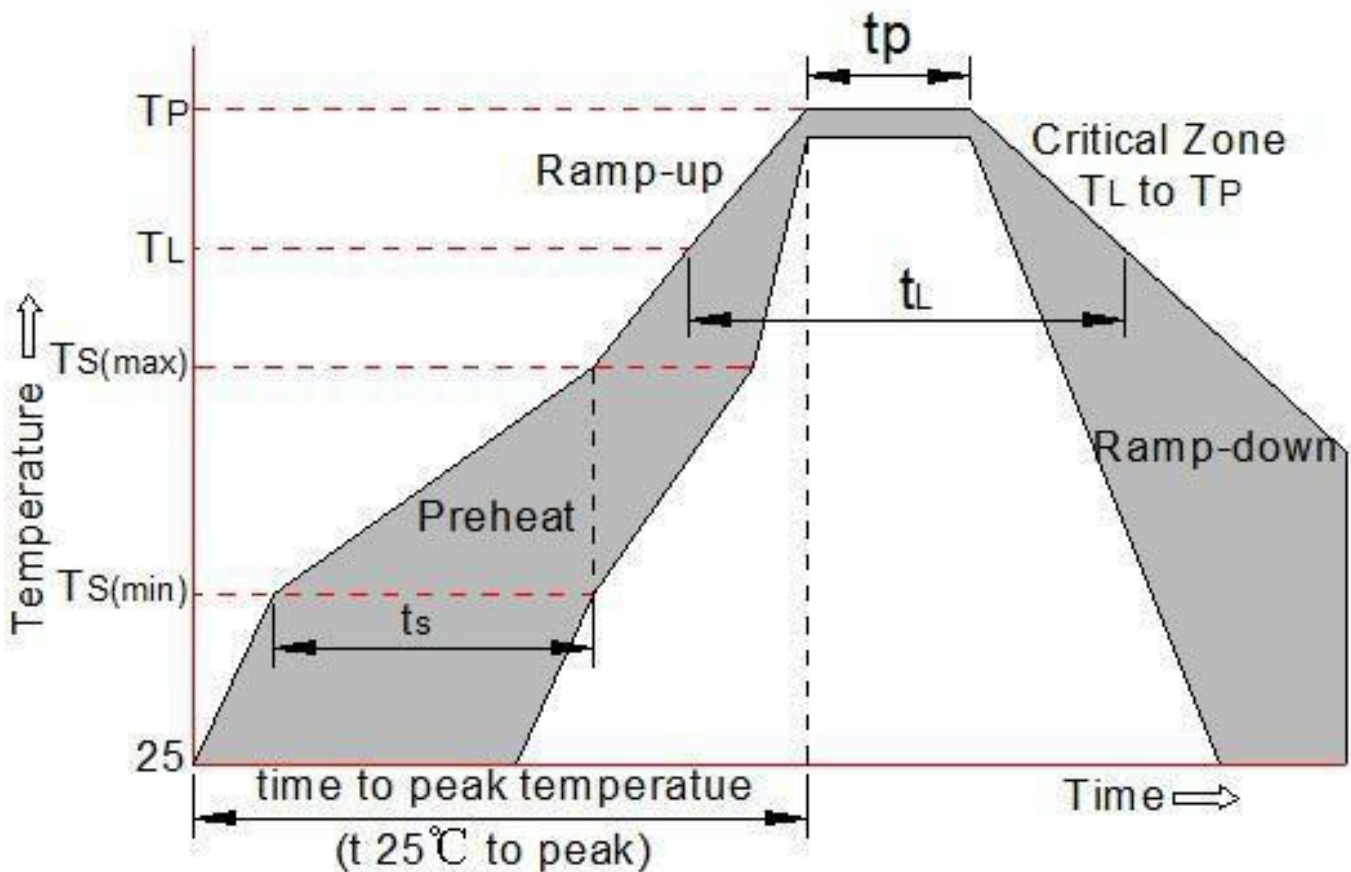
Ratings and Characteristics Curves

($T_A = 25^\circ\text{C}$ unless otherwise noted)



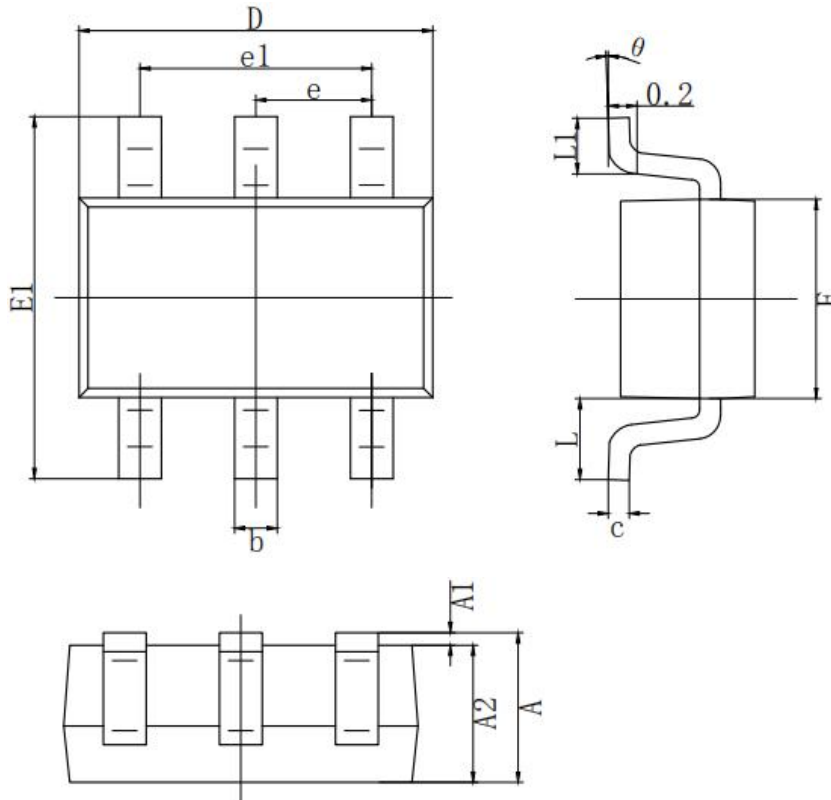
Soldering Parameters

Reflow Condition		Pb -Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max($T_{s(max)}$)	+200 °C
	-Time (Min to Max) (t_s)	60 -180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3 °C /sec. Max
$T_{s(max)}$ T_L - Ramp -up Rate		3 °C /sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217 °C
	-Temperature(t_L)	60 -150 secs.
Peak Temp (T_p)		+260(+0/ -5) °C
Time within 5 °C of actual Peak Temp (t_p)		30 secs. Max
Ramp -down Rate		6 °C /sec. Max
Time 25 °C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260 °C



Package Outline Dimensions

millimeters



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.460
θ	0°	8°

Revision History

Document Version	Date of release	Description of changes
Rev.A	2017.06.13	First issue

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