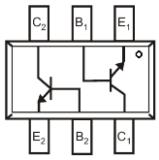
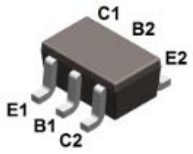
BC846DW-BC848DW

Dual Bipolar Transistor(NPN+NPN)

Features

- High current gain
- Excellent h_{FE} linearity
- Low noise





SOT-363

Mechanical Data

- Case: SOT-363
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Maximum Ratings (@ T_A = 25℃ unless otherwise specified)

Parameter	Symbol	BC846	BC847	BC848	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	6	5	V
Collector Current (Continuous)	I_C	100			mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (Collector)	P_D	300	mW
Thermal Resistance (Junction-to-Ambient)	$R_{\theta JA}$	417	°C/W
Operating Junction Temperature	T_J	-55 ~ +150	℃
Storage Temperature Range	T_{STG}	-55 ~ +150	℃

BC846DW-BC848DW

Dual Bipolar Transistor(NPN+NPN)

Electrical Characteristics (@ T_A = 25℃ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage BC846	$V_{(BR)CBO}$	I_C = 10μA, I_E = 0	80	-	-	V
Collector-Base Breakdown Voltage BC847			50	-	-	
Collector-Base Breakdown Voltage BC848			30	-	-	
Collector-Emitter Breakdown Voltage BC846	$V_{(BR)CEO}$	I_C = 10mA, I_B = 0	65	-	-	V
Collector-Emitter Breakdown Voltage BC847			45	-	-	V
Collector-Emitter Breakdown Voltage BC848			30	-	-	V
Emitter-Base Breakdown Voltage BC846	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	6	-	-	V
Emitter-Base Breakdown Voltage BC847			6	-	-	V
Emitter-Base Breakdown Voltage BC848			5	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 30V, I_E = 0	-	-	15	nA
		V_{CB} = 30V, I_E = 0 T_J = 150℃	-	-	5	μA
Emitter-base Cut-off Current	I_{EBO}	V_{EB} = 5V, I_C = 0	-	-	100	nA
Collector-emitter Cut-off Current	I_{CEO}	V_{CE}= 30V, I_B = 0	-	-	1	mA
DC Current Gain BC846/847/848ADW	h_{FE}	V_{CE} = 5V, I_C = 10μA	-	110	-	-
DC Current Gain BC846/847/848BDW			-	250	-	-
DC Current Gain BC847/848CDW			-	480	-	-
DC Current Gain BC846/847/848ADW		V_{CE} = 5V, I_C = 2mA	110	-	220	-
DC Current Gain BC846/847/848BDW			200	-	450	-
DC Current Gain BC847/848CDW			420	-	800	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 10mA, I_B = 0.5mA	-	0.09	0.25	V
		I_C = 100mA, I_B = 5mA	-	0.20	0.60	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 10mA, I_B = 0.5mA	-	0.70	0.90	V
		I_C = 100mA, I_B = 5mA	-	0.90	1.10	V
Base-Emitter Voltage	$V_{BE(ON)}$	V_{CE} = 5V, I_C= 2mA	0.58	0.66	0.70	V
		V_{CE} = 5V, I_C= 10mA	-	-	0.77	V
Transition Frequency	f_T	V_{CE} = 5V, I_C= 10mA f = 100MHz	100	-	-	MHz

Ratings and Characteristic Curves-BC846/847/848A (@ T_A = 25℃ unless otherwise specified)

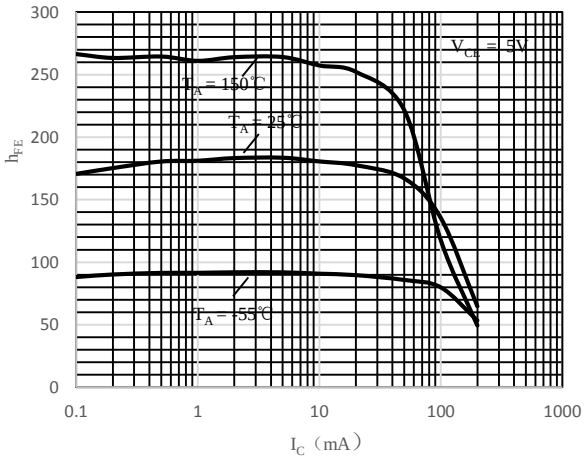


Fig 1 h_{FE} vs. I_C

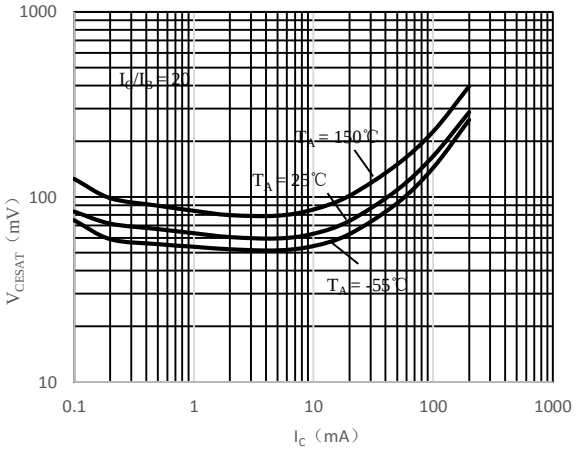


Fig 2 $V_{CE(sat)}$ vs. I_C

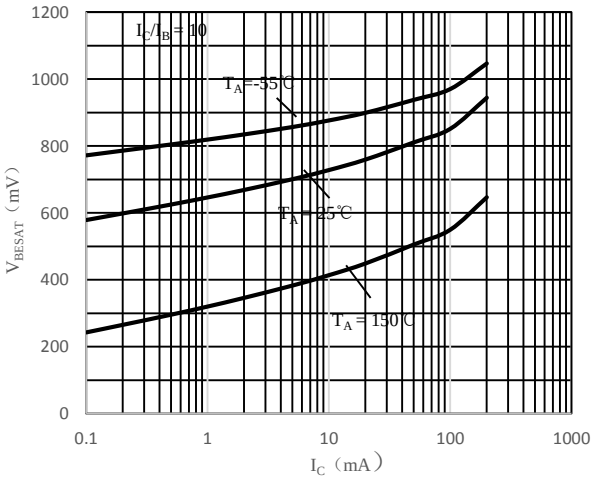


Fig 3 $V_{BE(sat)}$ vs. I_C

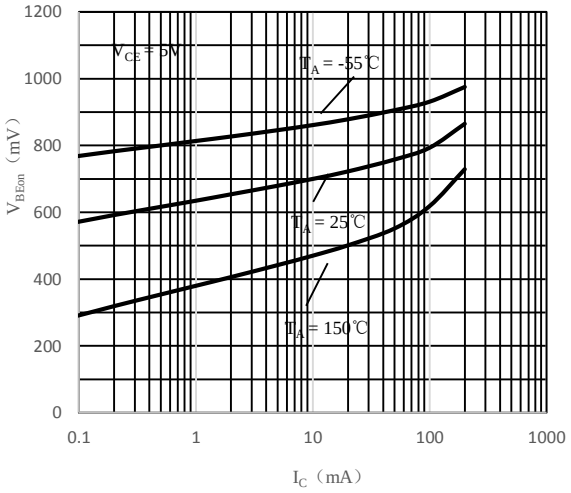


Fig 4 $V_{BE(ON)}$ vs. I_C

Ratings and Characteristic Curves-BC846/847/848B (@ T_A = 25℃ unless otherwise specified)

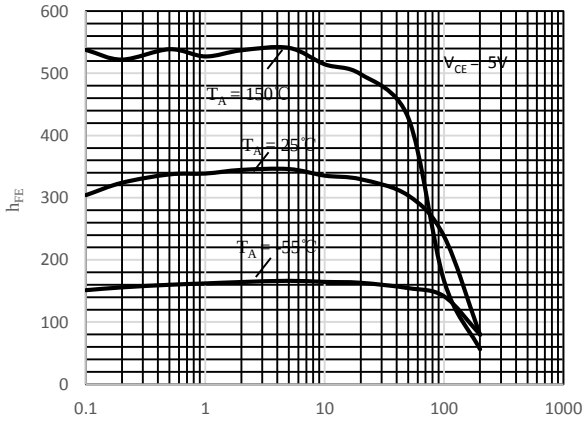


Fig 1 h_{FE} vs. I_C

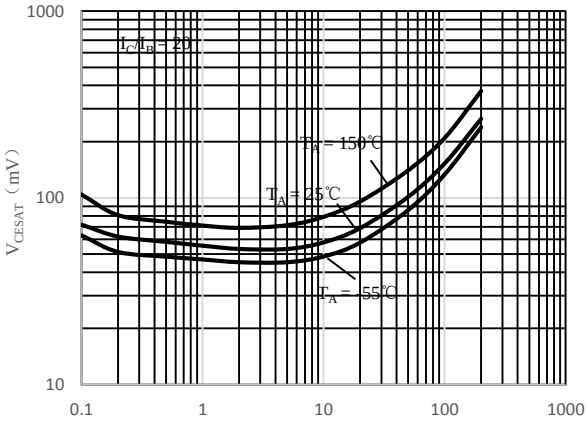


Fig 2 $V_{CE(sat)}$ vs. I_C

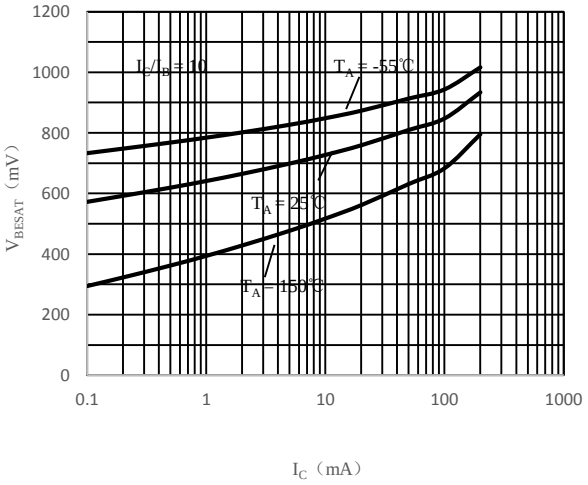


Fig 3 $V_{BE(sat)}$ vs. I_C

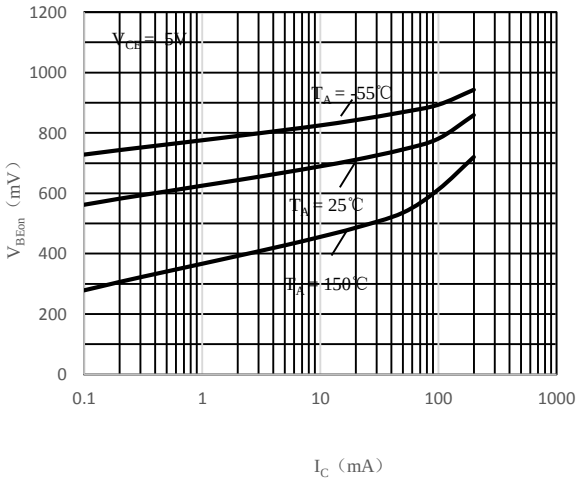
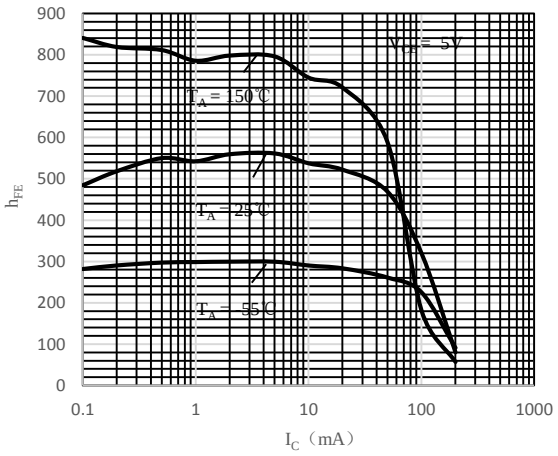


Fig 4 $V_{BE(ON)}$ vs. I_C

BC846DW-BC848DW

Dual Bipolar Transistor(NPN+NPN)

Ratings and Characteristic Curves-BC847/848C (@ T_A = 25℃ unless otherwise specified)



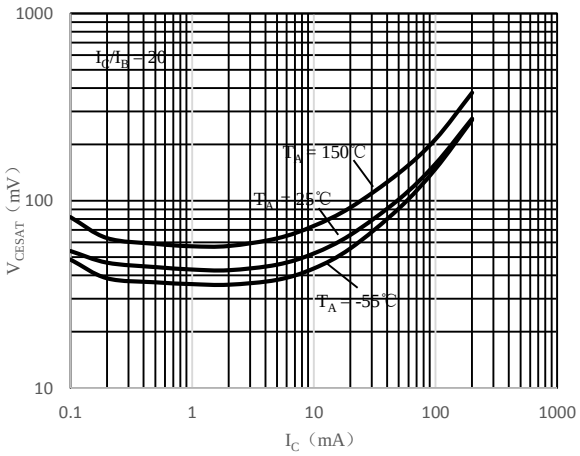


Fig 2 $V_{CE(sat)}$ vs. I_C

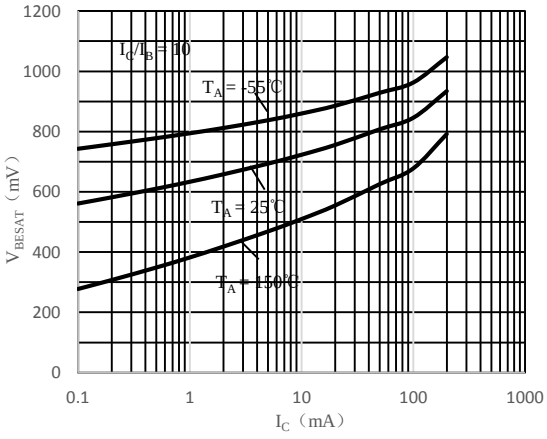


Fig 3 $V_{BE(sat)}$ vs. I_C

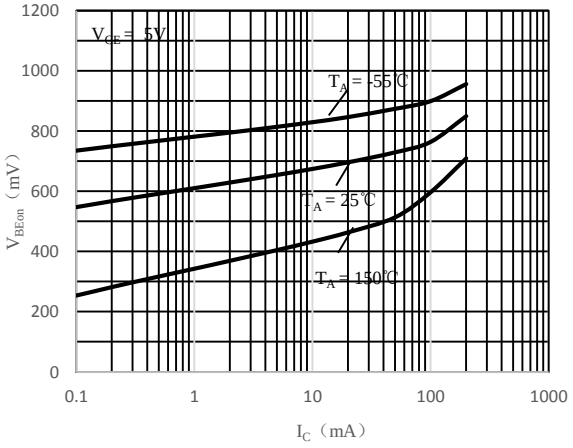
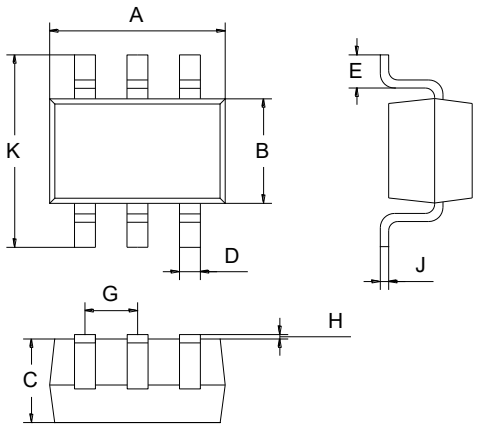


Fig 4 $V_{BE(ON)}$ vs. I_C

BC846DW-BC848DW

Dual Bipolar Transistor(NPN+NPN)

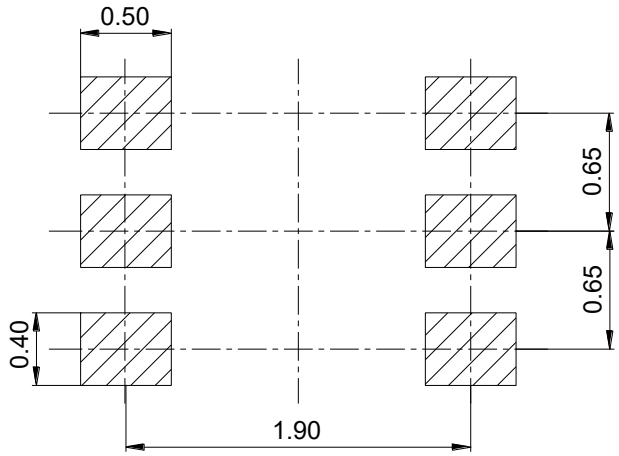
Package Outline Dimensions (Unit: mm)



SOT-363		
	Min.	**Max.**
A	2.00	2.20
B	1.15	1.35
C	0.85	1.05
D	0.15	0.35
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40

Package Outline Dimensions (Unit: mm)

SOT-363



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BC846A/BDW	SOT-363	3000 pcs / Tape & Reel	1A/1B
BC847A/B/CDW	SOT-363	3000 pcs / Tape & Reel	1E/1F/1G
BC848A/B/CDW	SOT-363	3000 pcs / Tape & Reel	1J/1K/1L