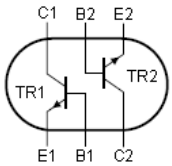
BC846DS

Dual Bipolar Transistor(NPN+NPN)

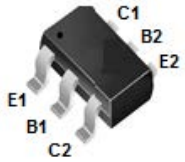
Features

- High current gain
- Excellent h_{FE} linearity
- Low noise between 30Hz and 15kHz



Mechanical Data

- Case: SOT-23-6L
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



SOT-23-6L

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	65	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current (Continuous)	I_C	100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T_A = 25°C) *1	P_D	200	mW
Thermal Resistance (Junction-to-Ambient) *1	$R_{\theta JA}$	625	°C/W
Operating Junction Temperature	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note 1: Device mounted on an FR4 board.(total rating)(25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 0.32 mm2 × 6)

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 10μA, I_E = 0	80	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA, I_B = 0	65	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	6	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 30V, I_E = 0	-	-	15	nA
		V_{CB} = 30V, I_E = 0 T_J = 150°C	-	-	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 BC846ADS	h_{FE}	V_{CE} = 5V, I_C = 2mA	120	-	240	-
DC Current Gain BC846BDS			200	-	400	-
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
Collector Capacitance	C_C	V_{CB} = 10V, I_E = I_e = 0 f = 100MHz	-	2.5	-	pF

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Ratings and Characteristic Curves-BC846ADS (@ T_A = 25℃ unless otherwise specified)

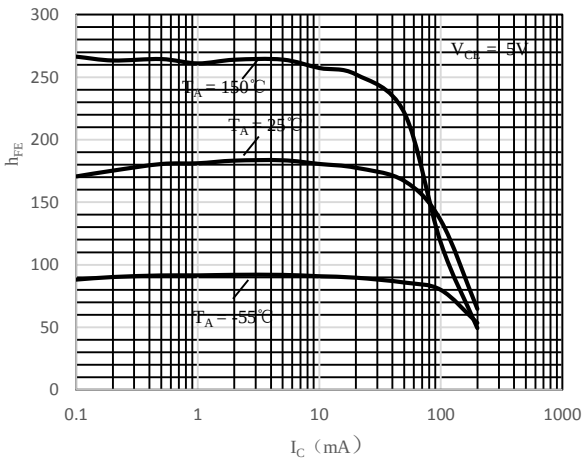

Fig 1 h_{FE} vs. I_C

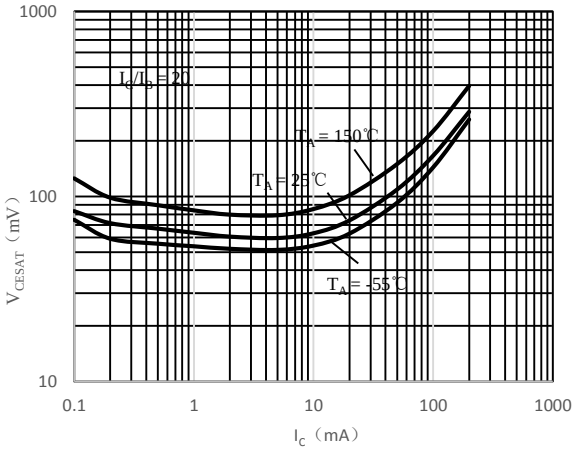

Fig 2 $V_{CE(sat)}$ vs. I_C

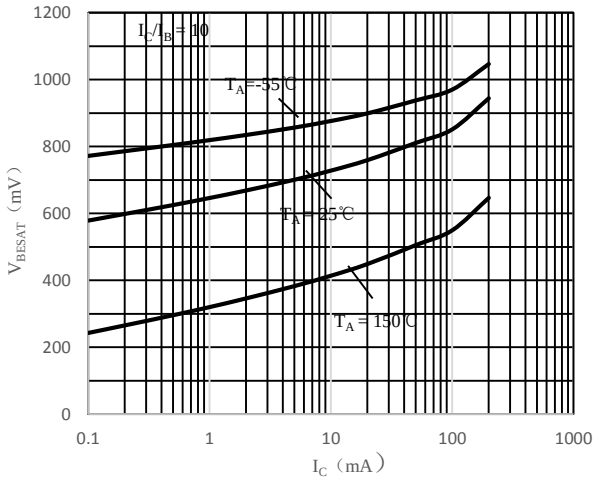

Fig 3 $V_{BE(sat)}$ vs. I_C

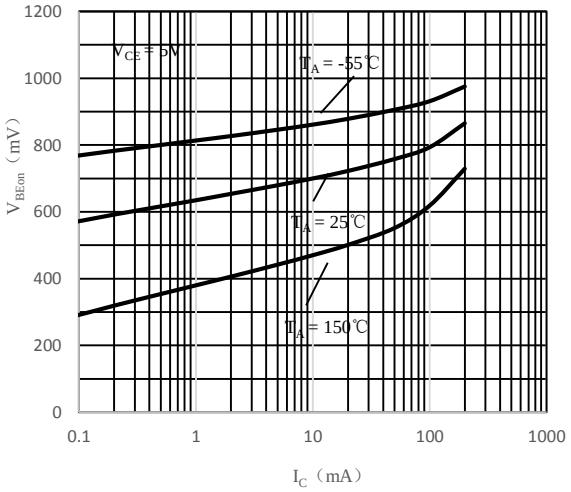

Fig 4 $V_{BE(ON)}$ vs. I_C

Ratings and Characteristic Curves-BC846BDS (@ T_A = 25℃ unless otherwise specified)

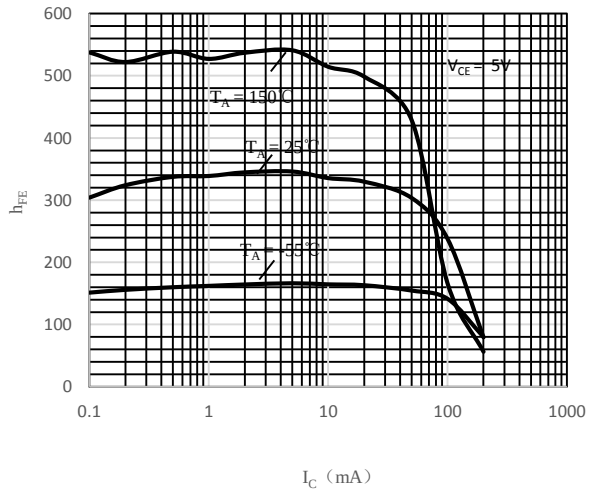

Fig 1 h_{FE} vs. I_C

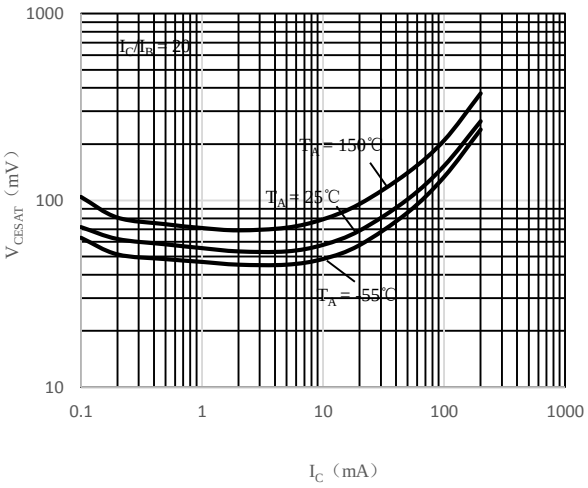

Fig 2 $V_{CE(sat)}$ vs. I_C

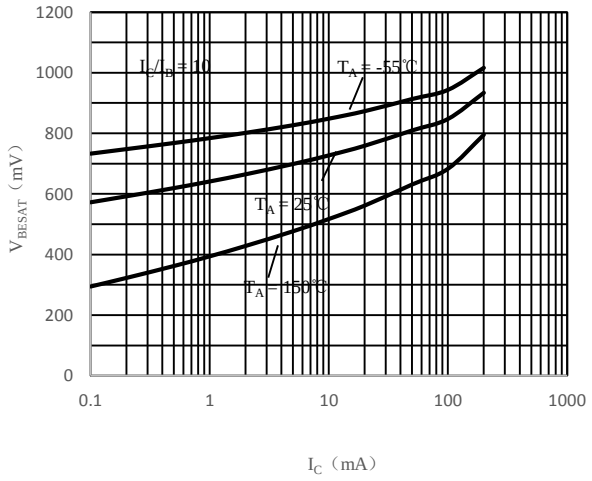

Fig 3 $V_{BE(sat)}$ vs. I_C

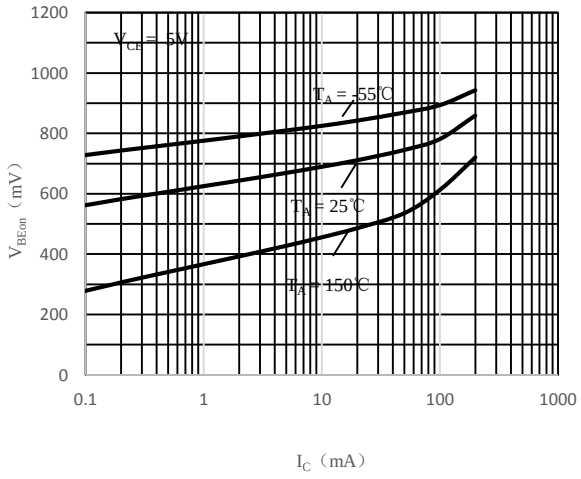

Fig 4 $V_{BE(ON)}$ vs. I_C

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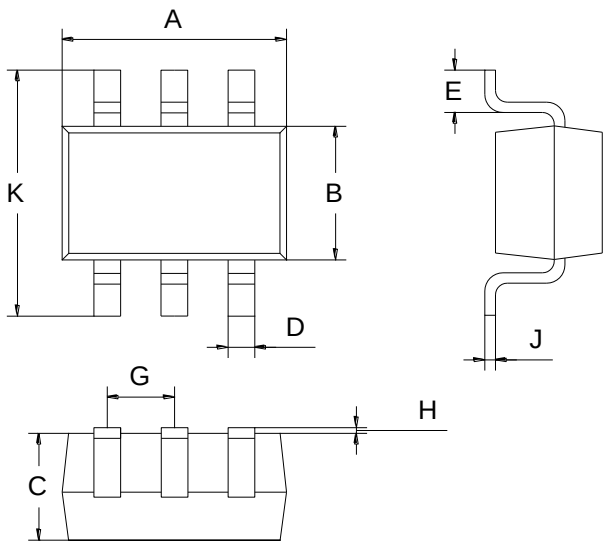
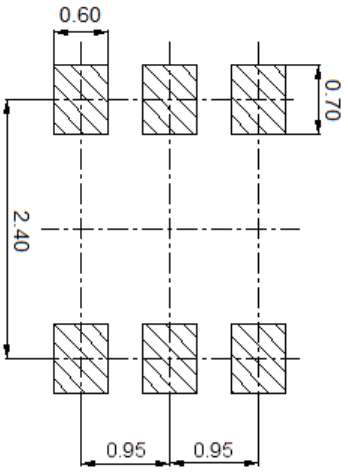
Package Outline Dimensions (Unit: mm)



SOT-23-6L		
Dimension	**Min.**	**Max.**
A	2.80	3.00
B	1.50	1.70
C	1.00	1.20
D	0.35	0.45
E	0.35	0.55
G	0.90	1.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00

Mounting Pad Layout (Unit: mm)

SOT-23-6L



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BC846A/BDS	SOT-23-6L	3000 pcs / Tape & Reel	1A/1B