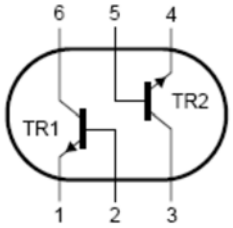
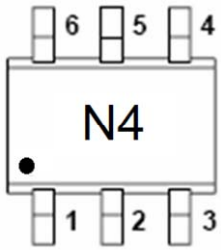
BC817DS-40

Dual Bipolar Transistor(NPN+NPN)

Features

- High current(500mA).
- 200mW total power dissipation.
- Replaces two SOT323 packaged transistors. On same PCB area.





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SOT-363

APPLICATIONS

- General purpose switching and amplification.
- Puse-pull amplifiers.
- Multi-phase stepper motor drivers.

Mechanical Data

- Case: SOT-363
- Molding compound, UL flammability classification rating 94V-0.
- Terminals: Matte tin plated leads, solderable per MIL-STD-202, Method 208.

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

Symbol	Parameter	Value	Units
MAXIMUM RATINGS			
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current - Continuous	0.5	A
I_{CM}	Peak Collector Cuurent	1	A
I_{BM}	Peak Base Current	0.2	A
Thermal Characteristic			
P_D	Power Dissipation	200	mW
T_J	Junction Temperature	-65 to +150	℃
T_{STG}	Junction and Storage Temperature	-65 to +150	℃

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA,I_E=0	50	-	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=10mA,I_B=0	45	-	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA,I_C=0	5	-	-	V
Collector cut-off current	I_{CBO}	V_{CB}=20V,I_E=0 V_{CB}=20V,I_E=0,T_j=150℃	-	-	100 5	nA μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0	-	-	0.1	μA
DC Current Gain (Note 1)	h_{FE}	V_{CE}=1V I_C=100mA	250	-	600	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500mA，I_B=50mA	-	-	0.7	V
Base-emitter on voltage	V_{BE}	I_C=500 mA ,V_{CE}=1.0V	-	-	1.2	V
Transition frequency	f_T	V_{CB}=5.0V,I_C=10mA,f=100MHz	100	-	-	MHz
Transition capacitance	C_c	V_{CB}=10V,f=1.0MHz	-	5	-	pF

Note1：Pulse test: pulse width ≤350μs, duty cycle≤ 2.0%.

Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

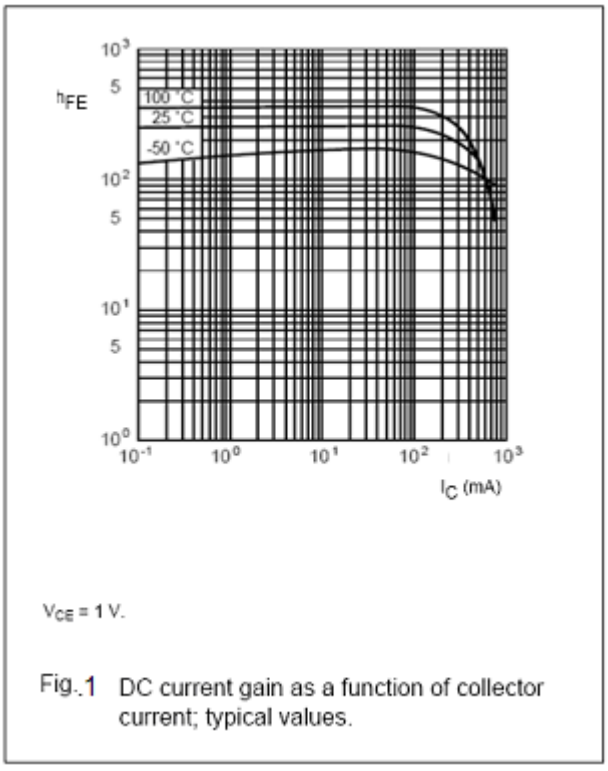


Fig.1 DC current gain as a function of collector current; typical values.

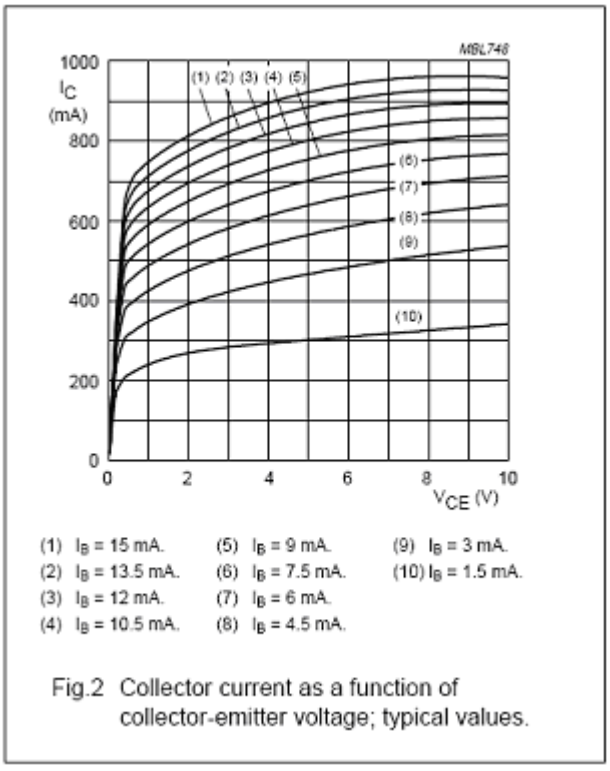
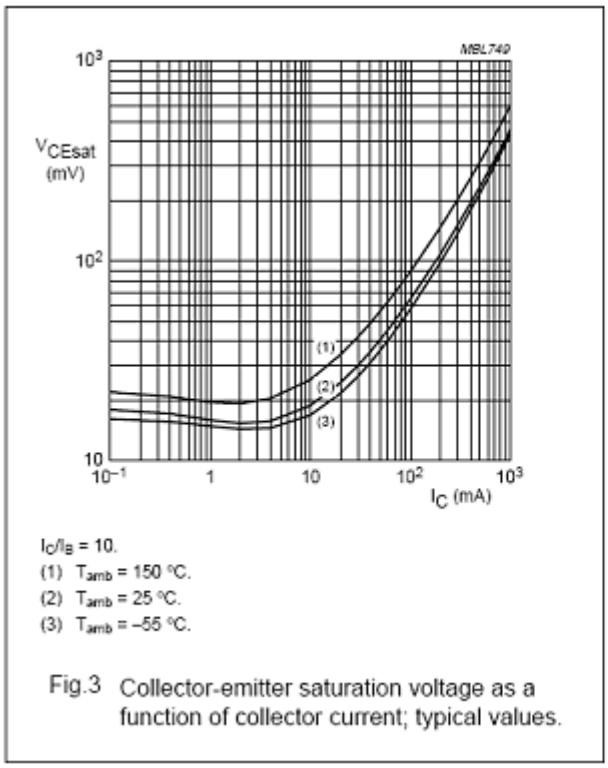
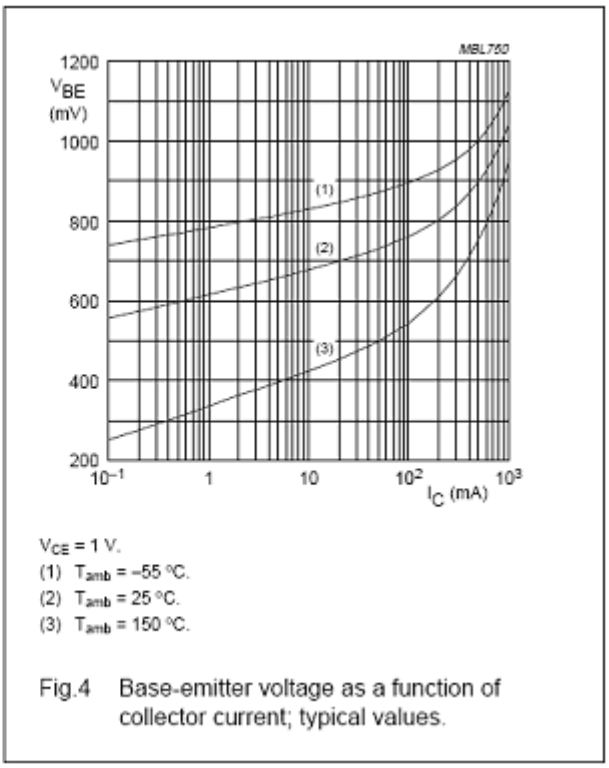


Fig.2 Collector current as a function of collector-emitter voltage; typical values.



I_C/I_B = 10.
(1) T_{amb} = 150 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = −55 °C.

Fig.3 Collector-emitter saturation voltage as a function of collector current; typical values.



V_{CE} = 1 V.
(1) T_{amb} = −55 °C.
(2) T_{amb} = 25 °C.
(3) T_{amb} = 150 °C.

Fig.4 Base-emitter voltage as a function of collector current; typical values.

Package Outline Dimensions(unit:mm)

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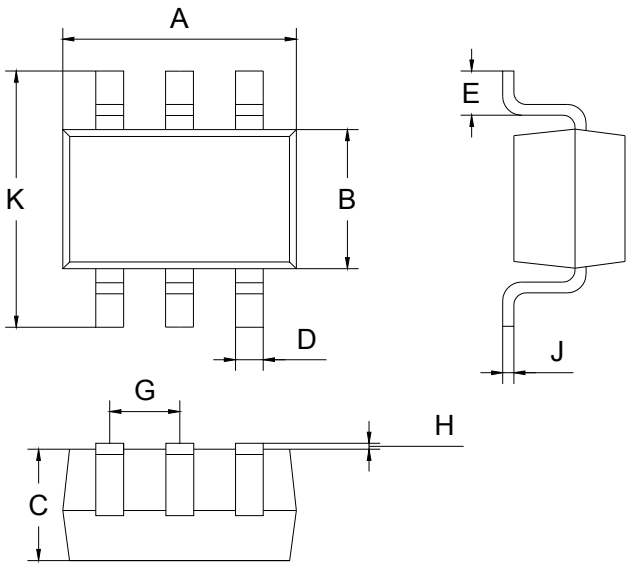

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Dim	Min	Max
A	2.00	2.20
B	1.15	1.35
C	0.85	1.05
D	0.15	0.35
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40

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SOLDERING FOOTPRINT(unit:mm)

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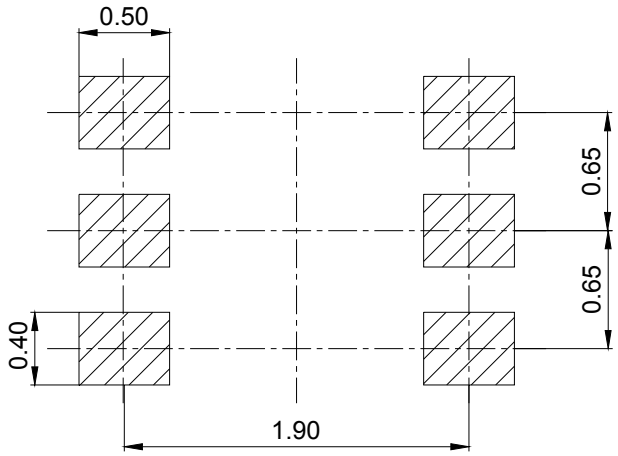

Ordering Information

Part Number	Package	Shipping	Marking Code
BC817DS-40	SOT-363	3000/Tape&Reel	N4