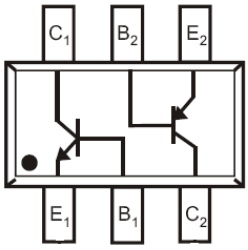
BC846BPN

Dual Bipolar Transistor(NPN+PNP)

FEATURES

- Low collector capacitance
- Low collector-emitter saturation voltage
- Closely matched current gain
- Reduces number of components and board space
- No mutual interference between the transistors



SOT-363

APPLICATIONS

- General-purpose switching and amplification

ORDERING INFORMATION

Type No.	Marking	Package Code
BC846BPN	PJ	SOT-363

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter	NPN	PNP	Unit
V_{CBO}	Collector-Base Voltage	80	-80	V
V_{CEO}	Collector-Emitter Voltage	65	-65	V
V_{EBO}	Emitter-Base Voltage	6	-6	V
I_C	Collector Current -Continuous	100	-100	mA
I_{CM}	Collector Current -Peak	200	-200	mA
I_{BM}	Base Current -Peak	200	-200	mA
P_D	Power Dissipation	200		mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	625		℃/W
T_j, T_{stg}	Operating and Storage Temperature	-65 to +150		℃

BC846BPN

Dual Bipolar Transistor(NPN+PNP)

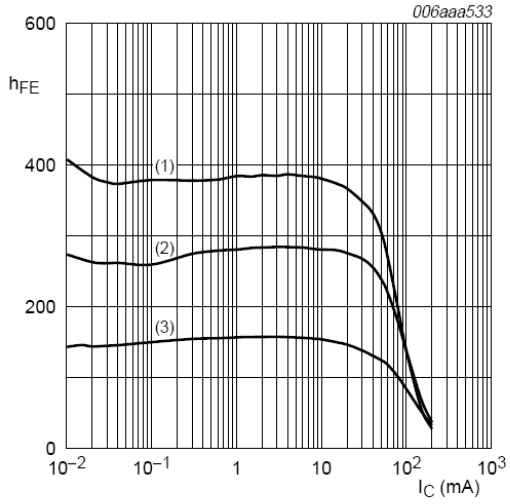
Electrical Characteristics Of TR1 NPN Transistor @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN.	TYP.	MAX.	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA I_E=0	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}=50V I_E=0			15	nA
Emitter cut-off current	I_{EBO}	V_{EB}=6V I_C=0			100	nA
DC current gain	h_{FE}	V_{CE}=5V I_C=10uA V_{CE}=5V I_C=2mA	 200	280 290	 450	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA I_B=0.5mA I_C=100mA I_B=5mA		0.05 0.2	0.1 0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA I_B=0.5mA I_C=100mA I_B=5mA		0.755 1	0.85	V
Base-emitter voltage	$V_{BE(on)}$	V_{CE}=5V, I_C=2mA V_{CE}=5V, I_C=10mA	0.58	0.65	0.7 0.77	V
Transition frequency	f_T	V_{CE}=5V,I_C=10mA ,f=100MHz	100			MHz
collector capacitance	C_c	V_{CB}=10V,f=1.0MHz		1.9		pF
emitter capacitance	C_e	V_{CB}=0.5V,f=1.0MHz		11		pF

Electrical Characteristics Of TR2 PNP Transistor @ Ta=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	-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}=-50V I_E=0			-15	nA
Emitter cut-off current	I_{EBO}	V_{EB}=-6V I_C=0			-100	nA
DC current gain	h_{FE}	V_{CE}=-5V I_C=-10uA V_{CE}=-5V I_C=-2mA	 200	280 290	 450	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-10mA I_B=-0.5mA I_C=-100mA I_B=-5mA		-0.055 -0.2	-0.1 -0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=-10mA I_C=-0.5mA I_C=-100mA I_C=-5mA		-0.755 -0.9	-0.85	V
Base-emitter on voltage	$V_{BE(on)}$	V_{CE}=-5V I_B=-2.0mA V_{CE}=-5V I_B=-10mA	-0.6	-0.65	-0.75 -0.82	V
Transition frequency	f_T	V_{CE}=-5V,I_C=-10mA ,f=100MHz	100			MHz
collector capacitance	C_c	V_{CB}=-10V,f=1.0MHz		2.3		pF
emitter capacitance	C_e	V_{CB}=-0.5V,f=1.0MHz		10		pF

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified



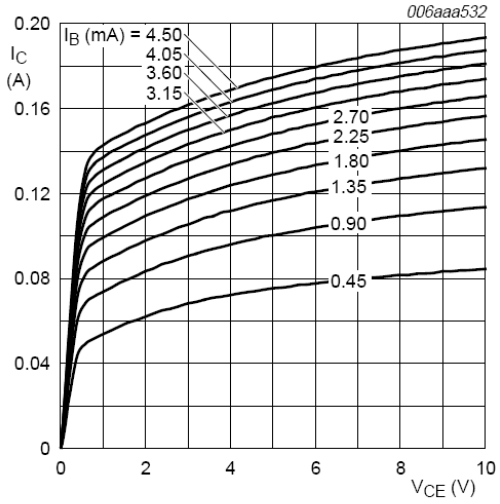
V_{CE} = 5 V

(1) T_{amb} = 100 °C

(2) T_{amb} = 25 °C

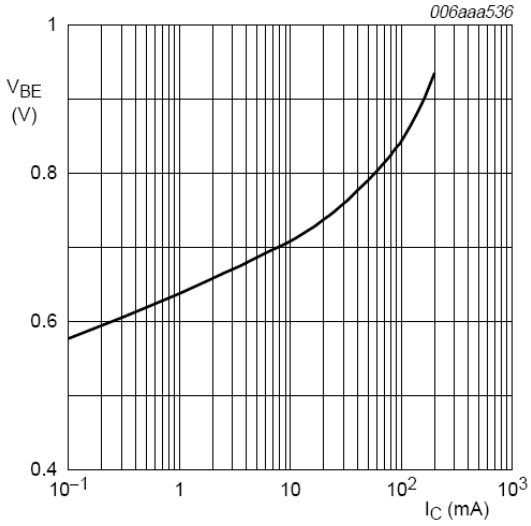
(3) T_{amb} = –55 °C

Fig1 . TR1（NPN）:DC current gain as a function of collector current; typical values



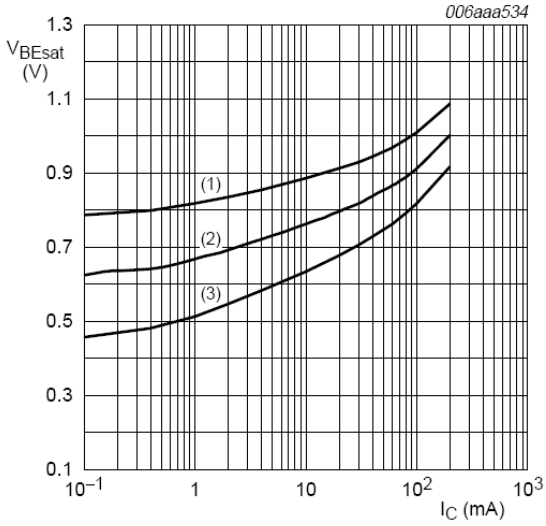
T_{amb} = 25 °C

Fig 2. TR1 (NPN): Collector current as a function of collector-emitter voltage; typical values



V_{CE} = 5 V; T_{amb} = 25 °C

Fig 3. TR1 (NPN): Base-emitter voltage as a function of collector current; typical values



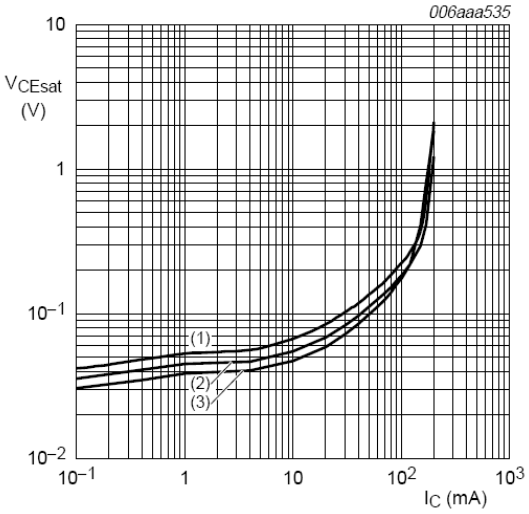
I_C/I_B = 20

(1) T_{amb} = –55 °C

(2) T_{amb} = 25 °C

(3) T_{amb} = 100 °C

Fig 4. TR1 (NPN): Base-emitter saturation voltage as a function of collector current; typical values



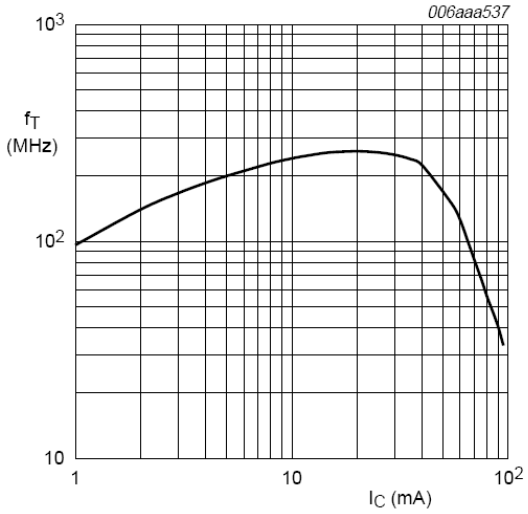
I_C/I_B = 20

(1) T_{amb} = 100 °C

(2) T_{amb} = 25 °C

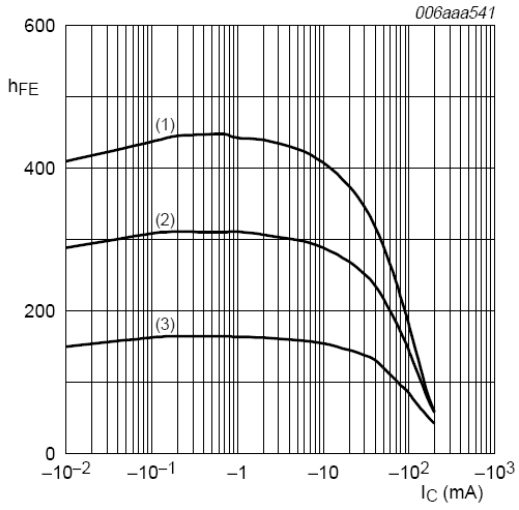
(3) T_{amb} = −55 °C

Fig 5. TR1 (NPN): Collector-emitter saturation voltage as a function of collector current; typical values



V_{CE} = 5 V; T_{amb} = 25 °C

Fig 6. TR1 (NPN): Transition frequency as a function of collector current; typical values



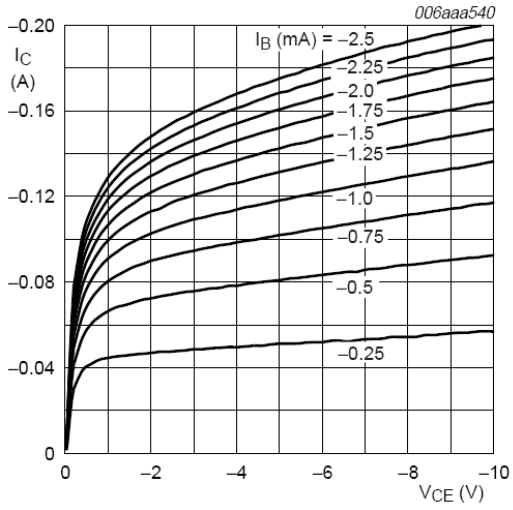
V_{CE} = −5 V

(1) T_{amb} = 100 °C

(2) T_{amb} = 25 °C

(3) T_{amb} = −55 °C

Fig 7. TR2 (PNP): DC current gain as a function of collector current; typical values



T_{amb} = 25 °C

Fig 8. TR2 (PNP): Collector current as a function of collector-emitter voltage; typical values

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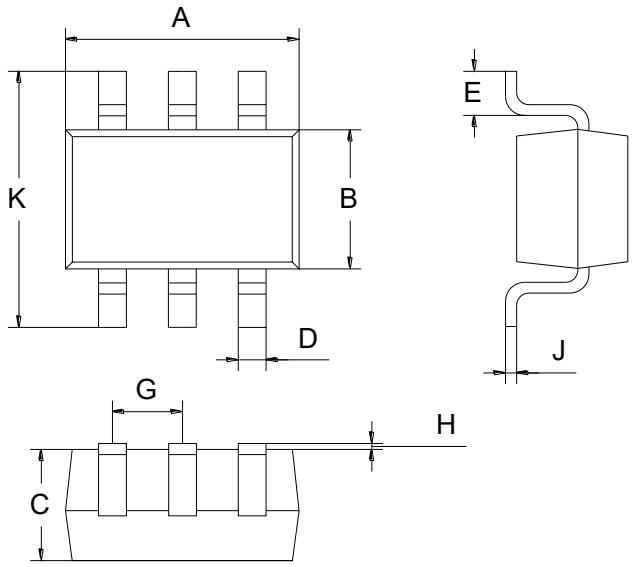
PACKAGE OUTLINE

Plastic surface mounted package



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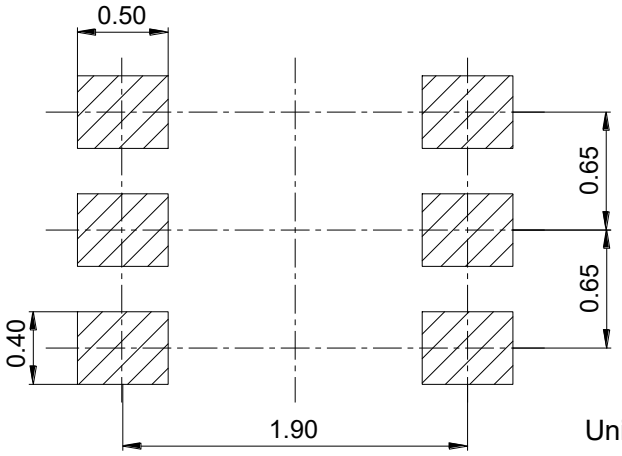
Dim	Min	Max
A	2.00	2.20
B	1.15	1.35
C	0.85	1.05
D	0.15	0.35
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
BC846BPN	SOT-363	3000 pcs / Tape & Reel