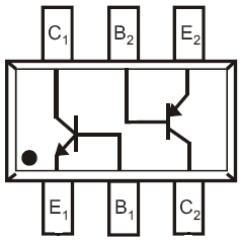
Small Surface Mount Transistor BC847PN

FEATURES

- Epitaxial planar die construction.
- Two internal isolated NPN/PNP Transistors In one package.
- Ultra-small surface mount package.

Lead-free



SOT-363

APPLICATIONS

- Ideal for low power amplification and switching.

ORDERING INFORMATION

Type No.	Marking	Package Code
BC847PN	7P	SOT-363

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter	NPN	PNP	Unit
V_{CBO}	Collector-Base Voltage	50	-50	V
V_{CEO}	Collector-Emitter Voltage	45	-45	V
V_{EBO}	Emitter-Base Voltage	6	-5	V
I_C	Collector Current -Continuous	100	-100	mA
I_{CM}	Collector Current -Peak	200	-200	mA
I_{EM}	Emitter 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		℃

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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	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=1μA I_C=0	6			V
Collector cut-off current	I_{CBO}	V_{CB}=30V I_E=0			15	nA
DC current gain	h_{FE}	V_{CE}=5V I_C=2mA	200	290	450	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA I_B=0.5mA I_C=100mA I_B=5mA		0.09 0.2	0.25 0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA I_B=0.5mA I_C=100mA I_B=5mA		0.7 0.9		V
Base-emitter voltage	$V_{BE(on)}$	V_{CE}=5V, I_C=2mA V_{CE}=5V, I_C=10mA	0.58	0.66	0.7 0.72	V
Transition frequency	f_T	V_{CE}=5V,I_C=10mA ,f=100MHz	100	300		MHz
Output Capacitance	C_{obo}	V_{CB}=10V,f=1.0MHz		3.5	6.0	pF
Noise Figure	NF	V_{CE}=5V,f=1.0MHz,I_C=200μA R_g=2KΩ		2.0	10	dB

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	-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=-1μA I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-30V I_E=0			-15	nA
DC current gain	h_{FE}	V_{CE}=-5V I_C=-2mA	200	290	450	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-10mA I_B=-0.5mA I_C=-100mA I_B=-5mA		-0.075 -0.25	-0.3 -0.65	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=-10mA I_C=-0.5mA I_C=-100mA I_C=-5mA		-0.7 -0.85	 -0.95	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	200		MHz
Output Capacitance	C_{obo}	V_{CB}=-10V,f=1.0MHz		3	4.5	pF
Noise Figure	NF	V_{CE}=-5V,f=1.0kHz,I_C=-0.2mA R_g=2KΩ,			10	dB

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TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

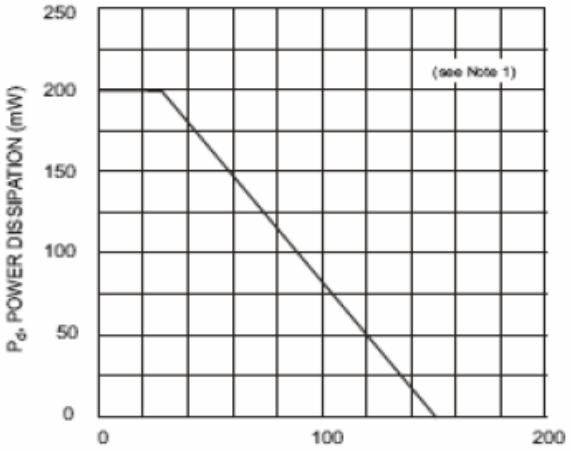

Fig. 1, Power Derating Curve (Total Device)

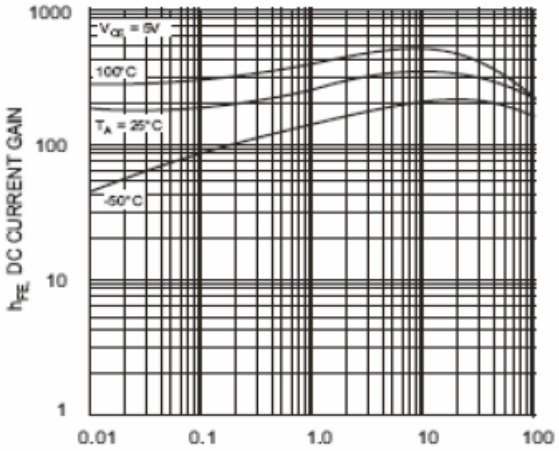

Fig. 2, DC Current Gain vs Collector Current (BC847B)

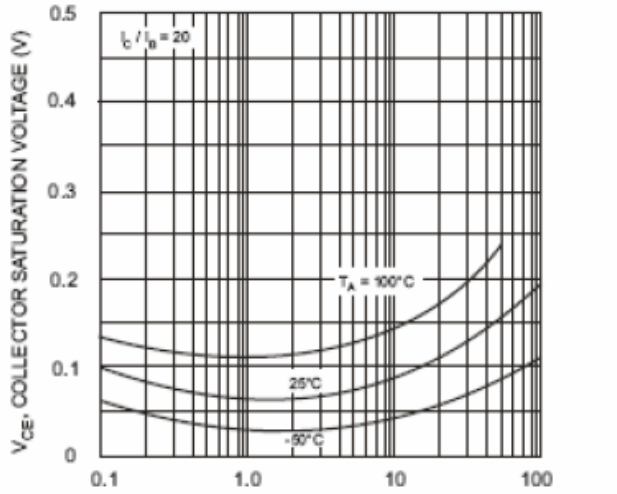

Fig. 3, Collector Saturation Voltage vs Collector Current (BC847B)

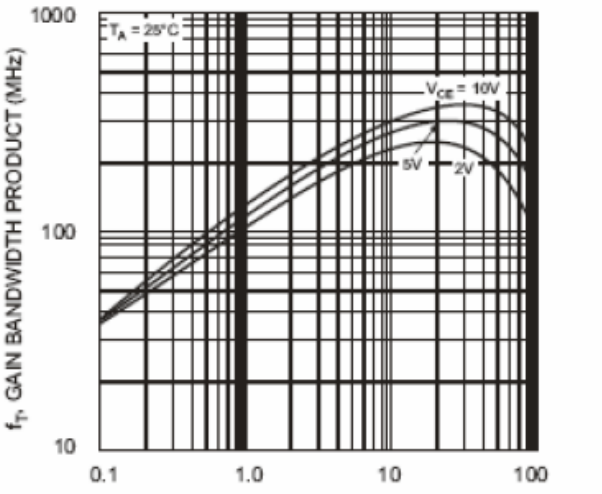

Fig. 4, Gain Bandwidth Product vs Collector Current (BC847B)

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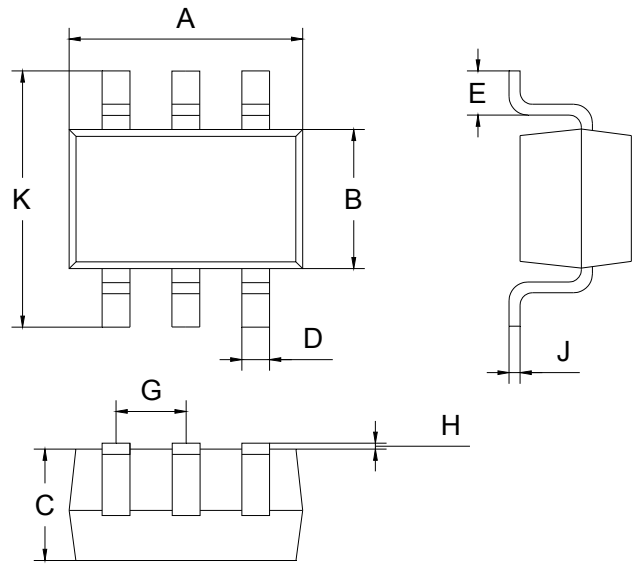
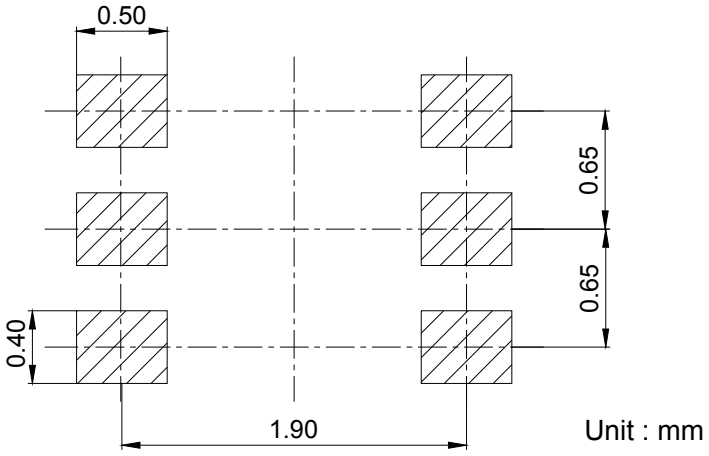
PACKAGE OUTLINE

Plastic surface mounted package SOT-363



SOT-363		
Dim	Min	Max
A	2.00	2.20
B	1.15	1.35
C	0.95 Typical	
D	0.25 Typical	
E	0.25	0.40
G	0.60	0.70
H	0.02	0.10
J	0.10 Typical	
K	2.2	2.4
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
BC847PN	SOT-363	3000/Tape&Reel