



Micro Commercial Components



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BC847PN

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Ideally Suited for Automatic Insertion
- Ultra-Small Surface Mount Package
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

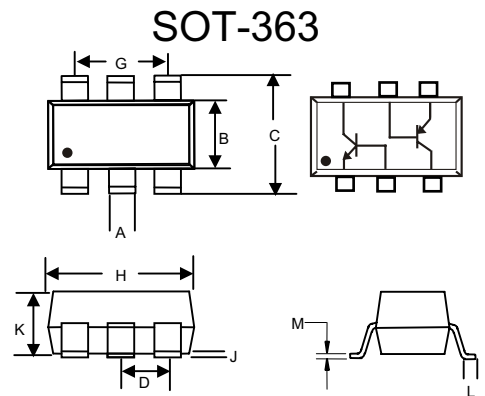
PNP and NPN Small Signal Transistor 200mW

Mechanical Data

- Case: SOT-363, Molded Plastic
- MAKING: 7P

Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Value	Units
OFF CHARACTERISTICS			
I_C	Collector Current	100	mAdc
I_{CM}	Peak Collector Current	200	mAdc
P_d	Power Dissipation @ $T_s=50^\circ\text{C}$	200	mW
T_J, T_{STG}	Operating & Storage Temperature	-55~+150	°C



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.006	.014	0.15	0.35	
B	.045	.053	1.15	1.35	
C	.085	.096	2.15	2.45	
D	.026		0.65Nominal		
G	.047	.055	1.20	1.40	
H	.071	.087	1.80	2.20	
J	---	.004	---	0.10	
K	.035	.043	0.90	1.10	
L	.010	.018	0.26	0.46	
M	.003	.006	0.08	0.15	

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CHARACTERISTICS of NPN Transistor ($T_{amb}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1\mu A, I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=30V, I_E=0$			15	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			100	nA
DC current gain	h_{FE1}	$V_{CE}=5V, I_C=2mA$	200		450	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10mA, I_B=0.5mA$			0.25	V
	$V_{CE(sat)}$	$I_C=100mA, I_B=5mA$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=10mA, I_B=0.5mA$		0.7		V
	$V_{BE(sat)}$	$I_C=100mA, I_B=5mA$		0.9		V
Base-emitter voltage	V_{BEon}	$V_{CE}=5V, I_C=2mA$	0.58		0.7	V
	V_{BEon}	$V_{CE}=5V, I_C=10mA$			0.72	V
Collector output capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$			6.0	pF
Transition frequency	f_T	$V_{CE}=5V, I_C=10mA, f=100MHz$	100			MHz
Noise figure	NF	$V_{CE}=5V, I_C=0.2mA,$ $f=1kHz, R_g=2K\Omega, \Delta f=200Hz$			10	dB

CHARACTERISTICS of PNP Transistor ($T_{amb}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-10mA, I_B=0$	-45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-1\mu A, I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-30V, I_E=0$			-15	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5V, I_C=0$			-100	nA
DC current gain	h_{FE1}	$V_{CE}=-5V, I_C=-2mA$	220		475	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-10mA, I_B=-0.5mA$			-0.3	V
	$V_{CE(sat)}$	$I_C=-100mA, I_B=-5mA$			-0.65	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-10mA, I_B=-0.5mA$		-0.7		V
	$V_{BE(sat)}$	$I_C=-100mA, I_B=-5mA$			-0.95	V
Base-emitter voltage	V_{BEon}	$V_{CE}=-5V, I_C=-2mA$	-0.6		-0.75	V
	V_{BEon}	$V_{CE}=-5V, I_C=-10mA$			-0.82	V
Collector output capacitance	C_{ob}	$V_{CB}=-10V, I_E=0, f=1MHz$			4.5	pF
Transition frequency	f_T	$V_{CE}=-5V, I_C=-10mA, f=100MHz$	100			MHz
Noise figure	NF	$V_{CE}=-5V, I_C=-0.2mA,$ $f=1kHz, R_g=2K\Omega, \Delta f=200Hz$			10	dB

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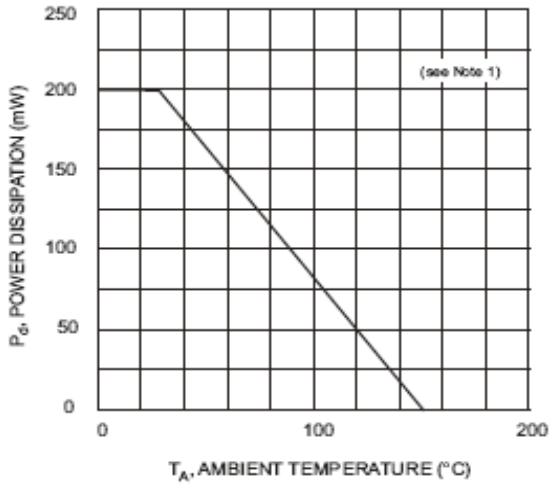


Fig. 1, Power Derating Curve (Total Device)

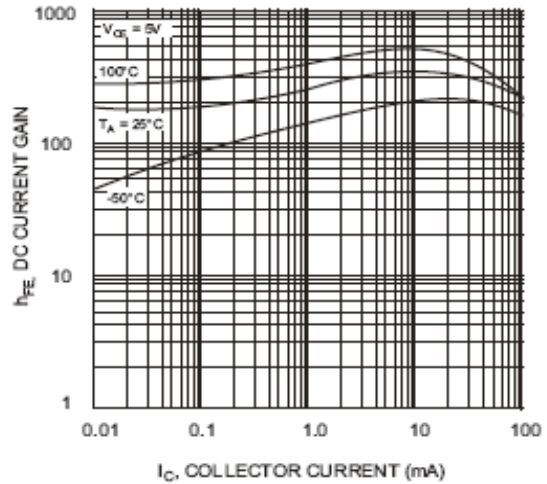


Fig. 2, DC Current Gain vs Collector Current (BC847B)

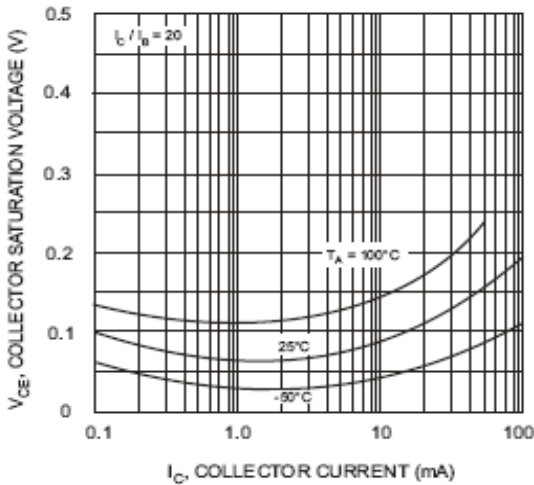


Fig. 3, Collector Saturation Voltage vs Collector Current (BC847B)

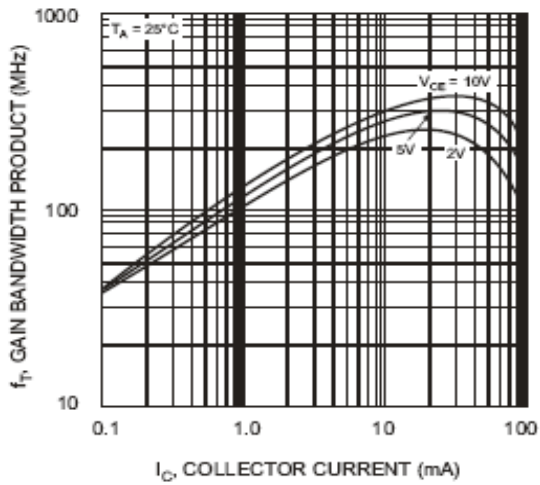


Fig. 4, Gain Bandwidth Product vs Collector Current (BC847B)

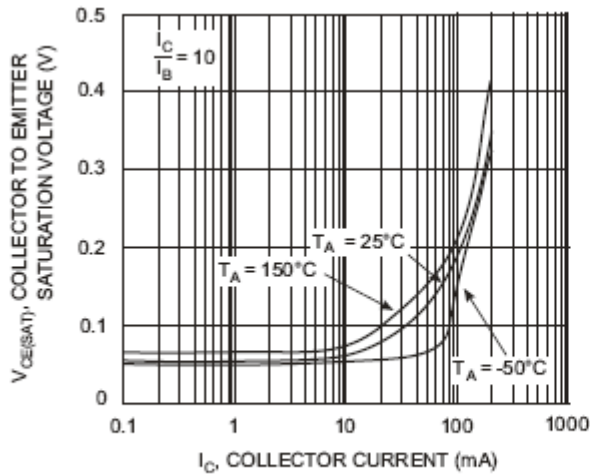


Fig. 5, Collector-Emitter Saturation Voltage vs. Collector Current (BC857B)

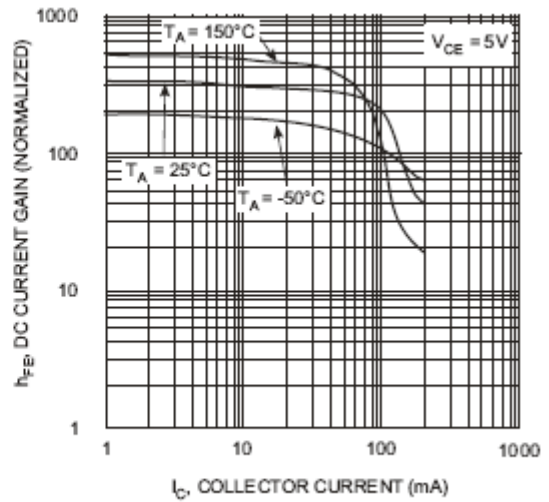


Fig. 6, DC Current Gain vs. Collector Current (BC857B)

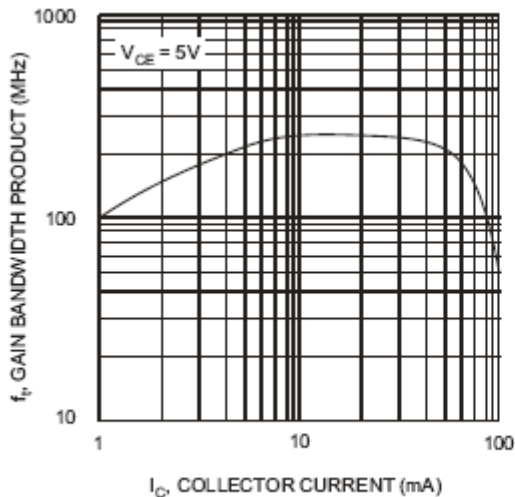


Fig. 7, Gain Bandwidth Product vs Collector Current (BC857B)



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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 3Kpcs/Reel

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