Plastic-Encapsulate Transistors

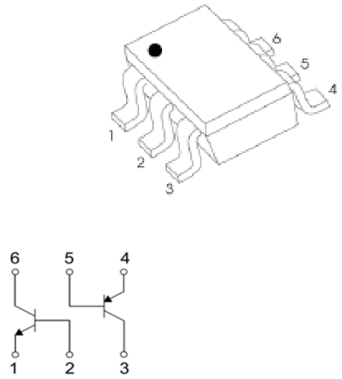
DUAL TRANSISTOR (NPN+PNP)

FEATURES

- Epitaxial Die Construction
- Two isolated NPN/PNP(BC817W+BC807W) Transistors in one package

MAKING: N4

SOT-363



MAXIMUM RATINGS TR1 (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
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
P_C	Collector Dissipation	0.2	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	625	℃/W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~+150	℃

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	5			V
Collector cut-off current	I_{CBO}	V_{CB}=20V,I_E=0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=1V,I_C=100mA	160		400	
	$h_{FE(2)}$	V_{CE}=1V,I_C=500mA	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500mA,I_B=50mA			0.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=500mA,I_B=50mA			1.2	V
Base-emitter voltage	$V_{BE(ON)}$	V_{CE}=1V,I_C= 500mA			1.2	V
Transition frequency	f_T	V_{CE}=5V,I_C=10mA,f=100MHz	100			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V,f=1MHz			5	pF

MAXIMUM RATINGS TR2 (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
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	-500	mA
P_C	Collector Power Dissipation	200	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	417	℃/W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55～+150	℃

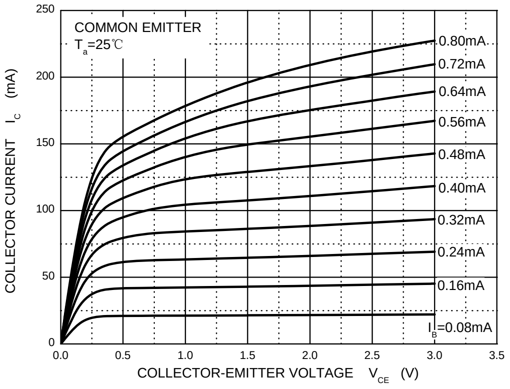
CHARACTERISTICS of TR2 (PNP Transistor) (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V_{CBO}	I_C=-10μA,I_E=0	-50		V
Collector-emitter breakdown voltage	V_{CEO}	I_C=-10mA,I_B =0	-45		V
Emitter-base breakdown voltage	V_{EBO}	I_E=-1μA,I_C=0	-5		V
Collector cut-off current	I_{CBO}	V_{CB}=-20 V , I_E=0		-0.1	μA
Collector cut-off current	I_{CEO}	V_{CE}=-20 V , I_B=0		-0.2	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-5 V , I_C=0		-0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=-1V,I_C= -100mA	160	400	
	$h_{FE(2)}$	V_{CE}=-1V,I_C= -500mA	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-500mA,I_B=-50 mA		-0.7	V
Base-emitter voltage	$V_{BE(on)}$	V_{CE}= -1V,I_C= -500mA		-1.2	V
Transition frequency	f_T	V_{CE}=-5 V, I_C= -10mA f=100MHz	80		MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V,f=1MHz		10	pF

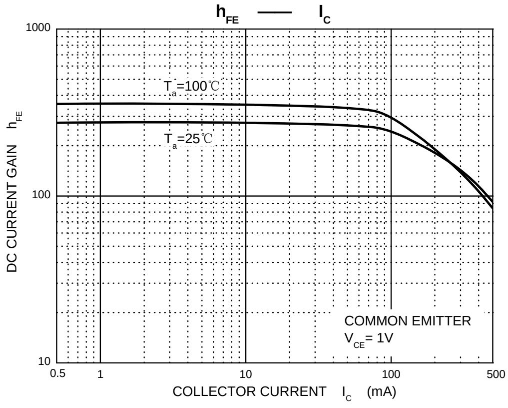
Typical Characteristics

BC817PN/TR1

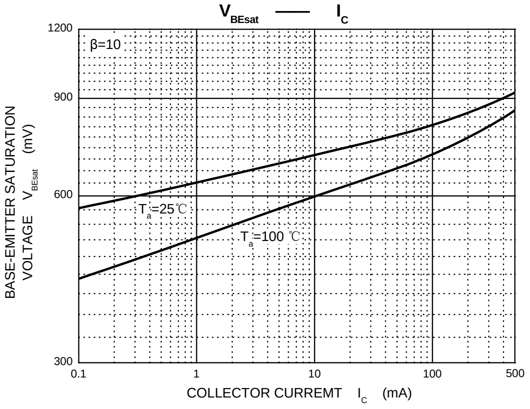
Static Characteristic



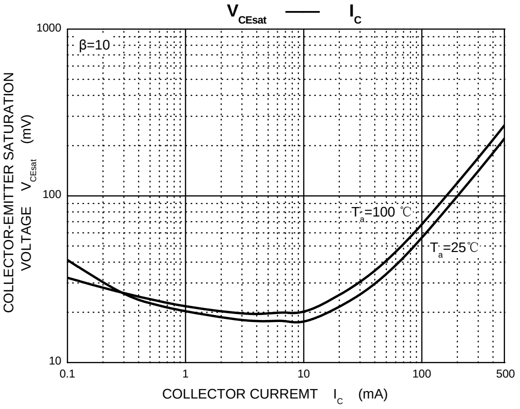
h_{FE} —— I_C



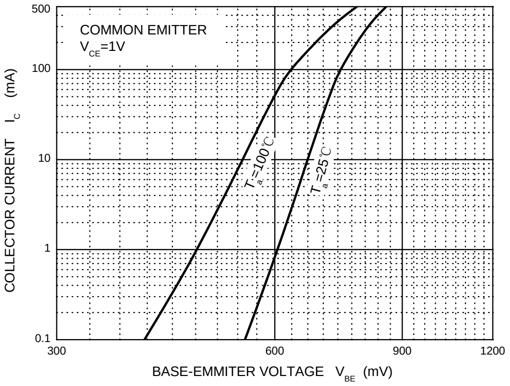
V_{BEsat} —— I_C



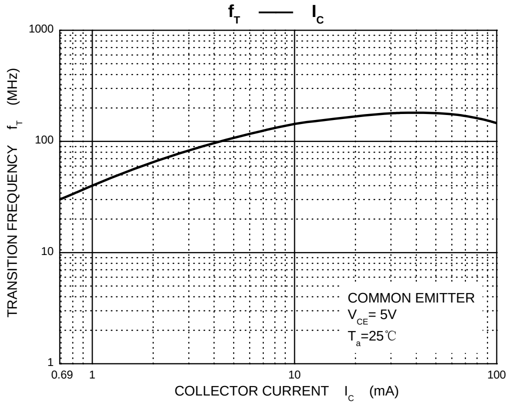
V_{CEsat} —— I_C



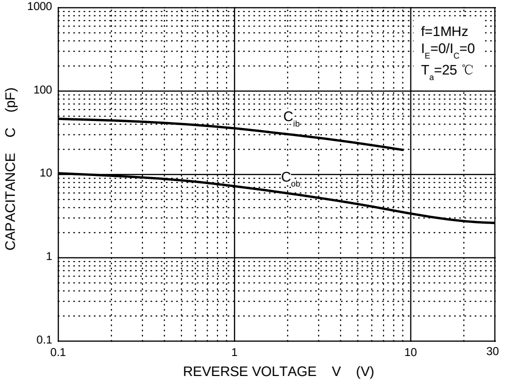
I_C —— V_{BE}



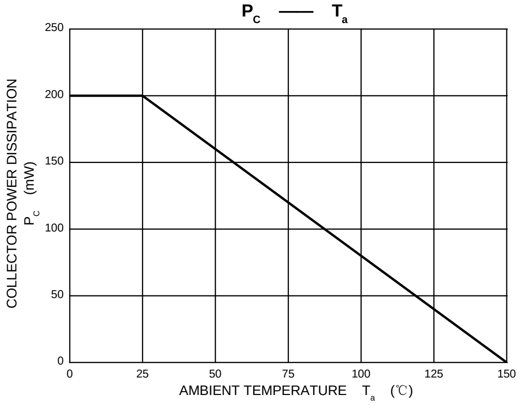
f_T —— I_C



C_{ob}/C_{ib} —— V_{CB}/V_{EB}

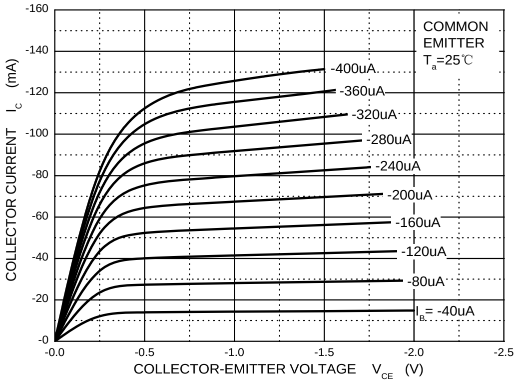


P_C —— T_a

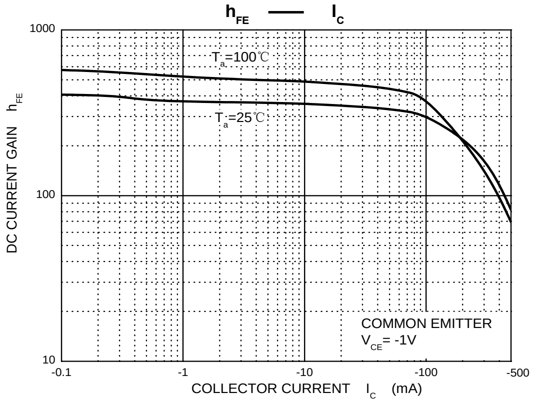


Typical Characteristics

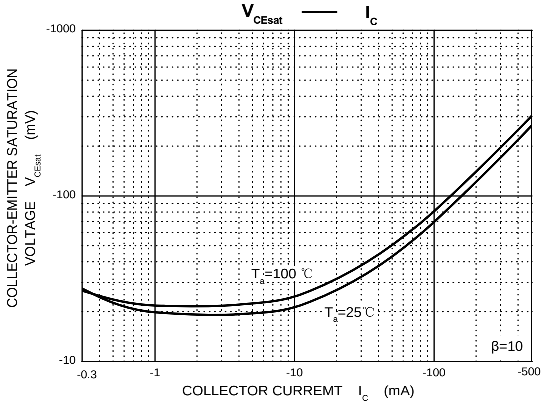
BC807PN/TR2



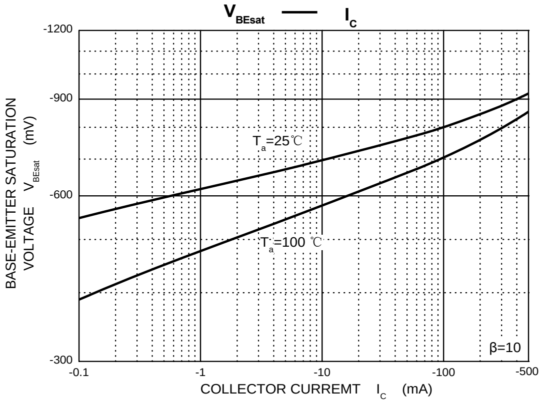
Static Characteristic



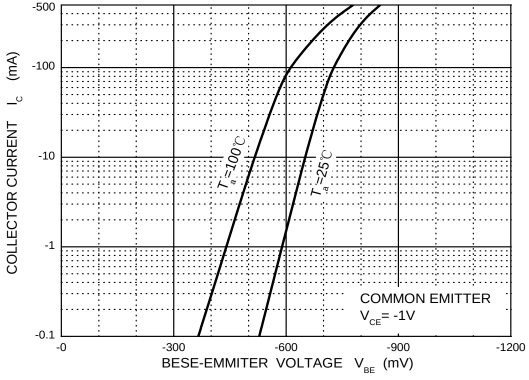
h_{FE} —— I_C



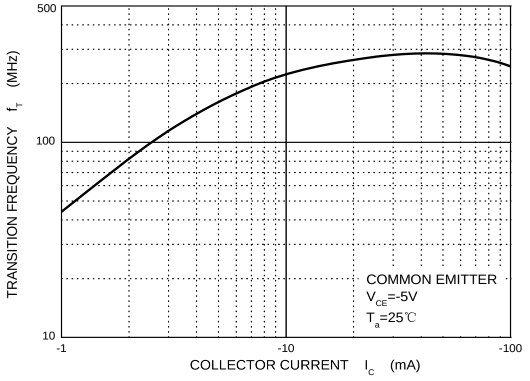
V_{CEsat} —— I_C



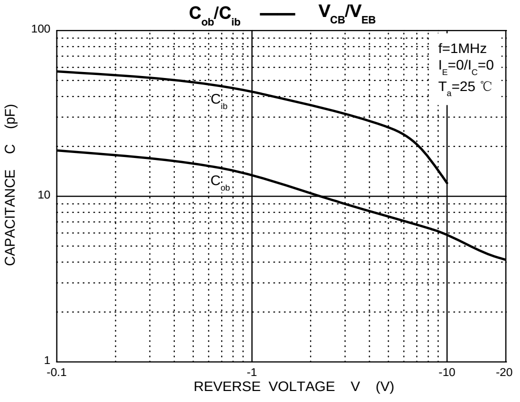
V_{BEsat} —— I_C



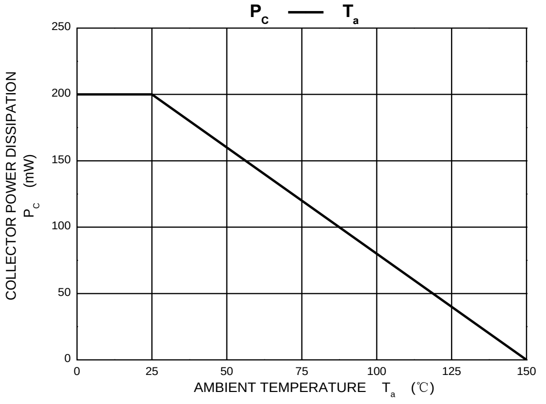
I_C —— V_{BE}



f_T —— I_C



C_{ob}/C_{ib} —— V_{CB}/V_{EB}



P_C —— T_a