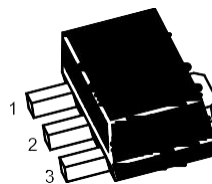


### PNP Silicon Epitaxial Planar Transistor

Medium power transistor

Marking ; P BCP  
Q BCQ  
R BCR



1.Base 2.Collector 3.Emitter  
SOT-89 Plastic Package

#### Absolute Maximum Ratings (T<sub>a</sub> = 25 °C)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	-40	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-32	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>c</sub>	Collector Current -Continuous	-2	A
P <sub>c</sub>	Collector Power Dissipation	500	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	250	°C/W
R <sub>θJC</sub>	Thermal Resistance From Junction To Case	45	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55~150	°C

#### Characteristics at T<sub>a</sub> = 25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at -V <sub>CE</sub> = 3 V, -I <sub>c</sub> = 500 mA Current Gain Group	P	h <sub>FE</sub>	82	-	180	-
	Q	h <sub>FE</sub>	120	-	270	-
	R	h <sub>FE</sub>	180	-	390	-
Collector Cutoff Current at -V <sub>CB</sub> = 20 V	-I <sub>CB0</sub>	-	-	1	μA	
Emitter Cutoff Current at -V <sub>EB</sub> = 4 V	-I <sub>EBO</sub>	-	-	1	μA	
Collector Base Breakdown Voltage at -I <sub>c</sub> = 50 μA	-V <sub>(BR)CB0</sub>	40	-	-	V	
Collector Emitter Breakdown Voltage at -I <sub>c</sub> = 1 mA	-V <sub>(BR)CEO</sub>	32	-	-	V	
Emitter Base Breakdown Voltage at -I <sub>E</sub> = 50 μA	-V <sub>(BR)EBO</sub>	5	-	-	V	
Collector Emitter Saturation Voltage at -I <sub>c</sub> = 2 A, -I <sub>B</sub> = 200 mA	-V <sub>CE(sat)</sub>	-	-	0.8	V	
Transition Frequency at -V <sub>CE</sub> = 5 V, I <sub>E</sub> = 0.5 A, f = 100 MHz	f <sub>T</sub>	-	100	-	MHz	
Output Capacitance at -V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	C <sub>ob</sub>	-	50	-	pF	

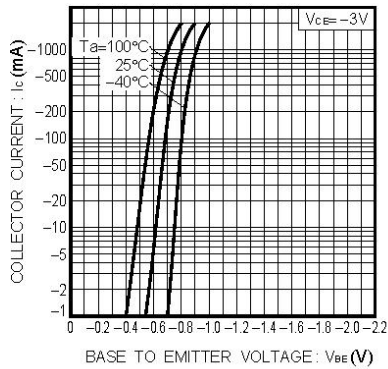


Fig.1 Grounded emitter propagation characteristics

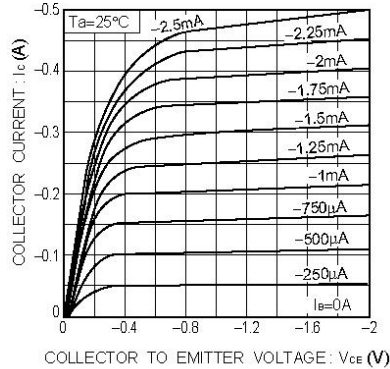


Fig.2 Grounded emitter output characteristics

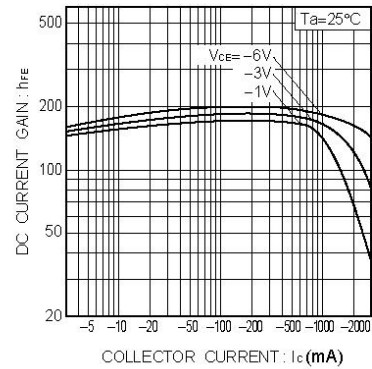


Fig.3 DC current gain vs. collector current ( I )

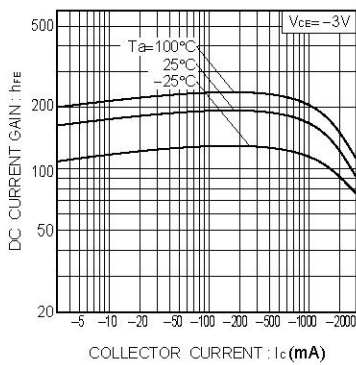


Fig.4 DC current gain vs. collector current (II)

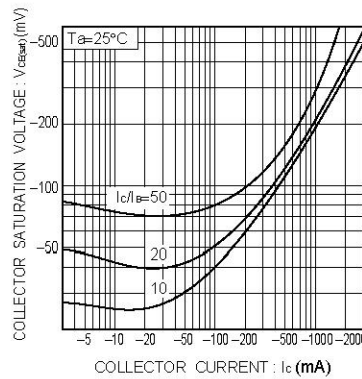


Fig.5 Collector-emitter saturation voltage vs. collector current ( I )

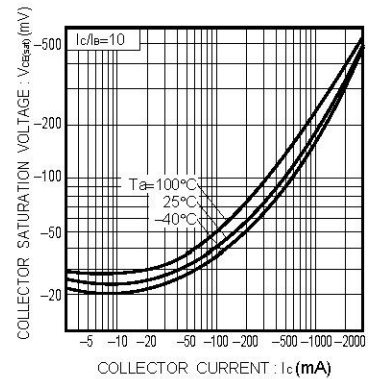


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

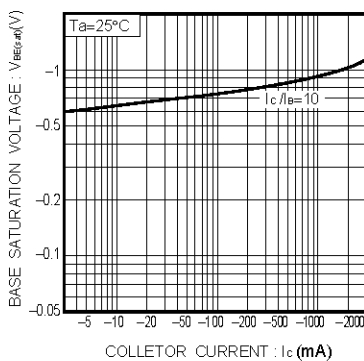


Fig.7 Base-emitter saturation voltage vs. collector current

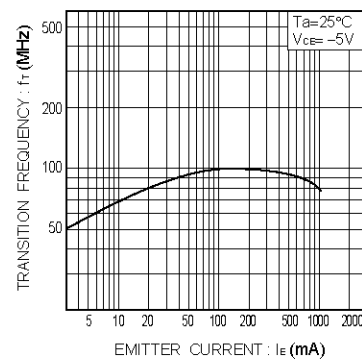


Fig.8 Gain bandwidth product vs. emitter current

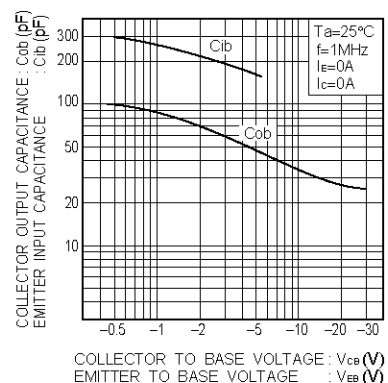


Fig.9 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage