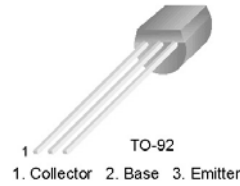


Switching and Amplifier Applications

.Low Noise:BC239



NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings Ta=25 unless otherwise noted

Symbol	Parameter	Value	Units
V _{CES}	Collector-Emitter Voltage	:BC237	50
		:BC238/239	30
V _{CEO}	Collector-Emitter Voltage	:BC237	45
		:BC238/239	25
V _{EBO}	Emitter-Base Voltage	:BC237	6
		:BC238/239	5
I _C	Collector Current(DC)	100	mA
P _C	Collector Power Dissipation	500	mW
T _J	Junction Temperature	150	
T _{STG}	Storage Temperature	-55~150	

Electrical Characteristics Ta=25 unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV _{CEO}	Collector-Emitter Breakdown	I _C =2mA, I _B =0				
			45			V
			25			V
BV _{EBO}	Emitter Base Breakdown Voltage	I _E =1μA, I _C =0				
			6			V
			5			V
I _{CES}	Collector Cut-off Current	V _{CE} =50V, V _{BE} =0 V _{CE} =30V, V _{BE} =0		0.2	15	nA
				0.2	15	nA
h _{FE}	DC Current Gain	V _{CE} =5V, I _C =2mA	120		800	
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C =10mA, I _B =0.5mA		0.07	0.2	V
		I _C =100mA, I _B =5mA		0.2	0.6	V
V _{BE(sat)}	Collector-Base Saturation Voltage	I _C =10mA, I _B =0.5mA		0.73	0.83	V
		I _C =100mA, I _B =5mA		0.87	1.05	V
V _{BE(on)}	Base-Emitter On Voltage	V _{CE} =5V, I _C =2mA	0.55	0.62	0.7	V
f _T	Current Gain Bandwidth Product	V _{CE} =3V, I _C =0.5mA, f=100MHz		85		MHz
		V _{CE} =5V, I _C =10mA, f=100MHz	150	250		MHz
C _{ob}	Output Capacitance	V _{CB} =10V, I _E =0, f=1MHz		3.5	6	pF
C _{ib}	Input Base Capacitance	V _{EB} =0.5V, I _C =0, f=1MHz		8		pF
NF	Noise Figure	V _{CE} =5V, I _C =0.2mA, F=1KHz, R _G =2kΩ V _{CE} =5V, I _C =0.2mA R _G =2k Ω, f=30-15kHz		2	10	dB
					4	dB
					4	dB

h_{FE} Classification

Classification	A	B	C
h _{FE}	120~220	180~460	380~800

Typical Characteristics

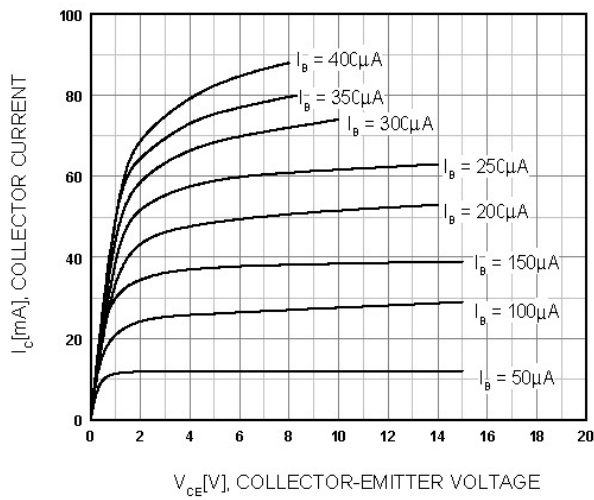


Figure 1. Static Characteristic

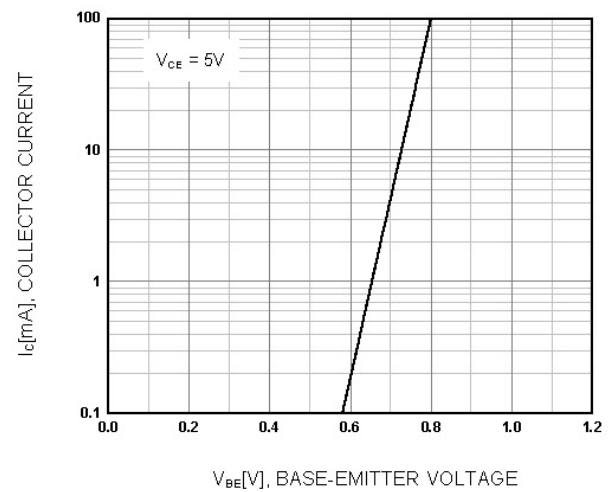


Figure 2. Transfer Characteristic

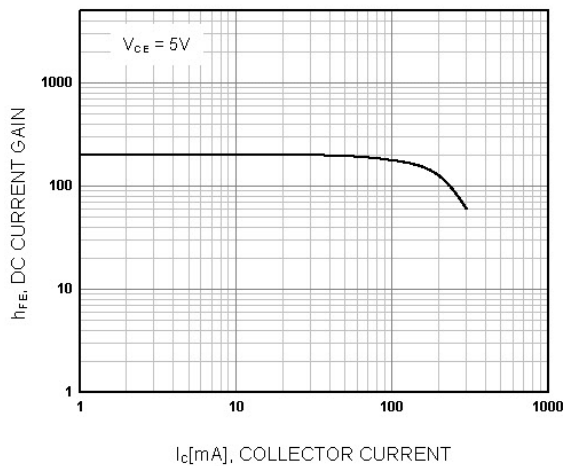


Figure 3. DC current Gain

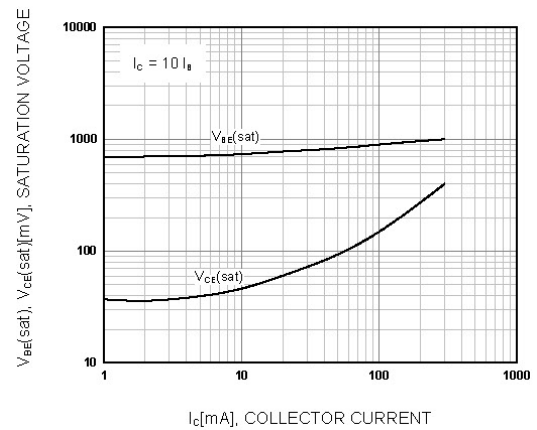


Figure 4. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

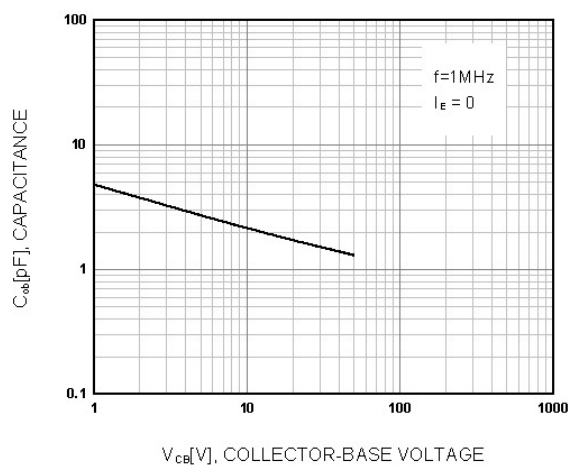


Figure 5. Output Capacitance

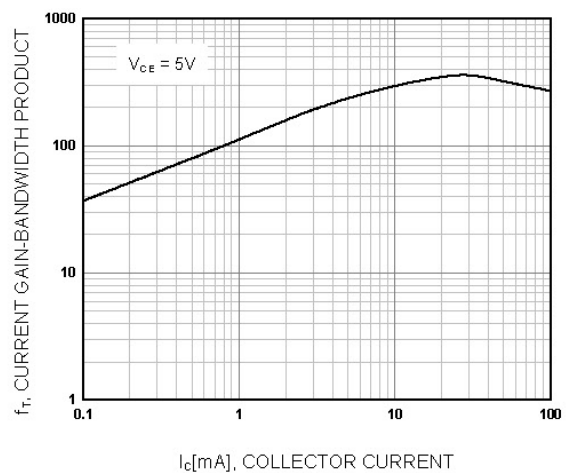


Figure 6. Current Gain Bandwidth Product

Package Dimensions

TO-92

