

BC237/238/239

NPN EPITAXIAL SILICON TRANSISTOR

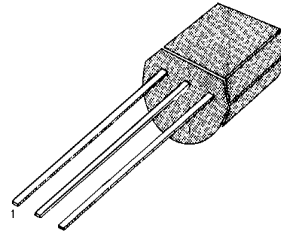
SWITCHING AND AMPLIFIER APPLICATIONS

- LOW NOISE: BC239

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

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

TO-92



1. Collector 2. Base 3. Emitter

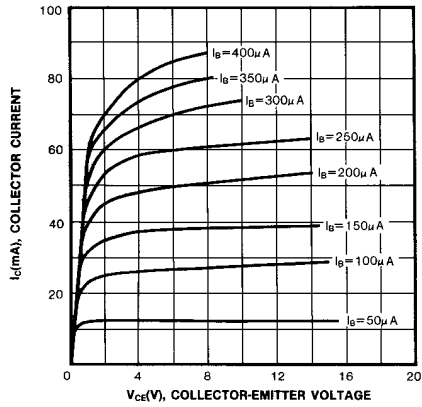
ELECTRICAL CHARACTERISTICS (T_A=25°C)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C =2mA, I _B =0	45			V
: BC237			25			V
: BC238/239						
Emitter Base Breakdown Voltage	BV _{EBO}	I _E =1μA, I _C =0	6			V
: BC237			5			V
: BC238/239						
Collector Cut-off Current	I _{CES}	V _{CE} =50V, I _B =0		0.2	15	nA
: BC237		V _{CE} =30V, I _B =0		0.2	15	nA
: BC238/239		V _{CE} =5V, I _C =2mA	120		800	
DC Current Gain	h _{FE}	I _C =10mA, I _B =0.5mA		0.07	0.2	V
Collector-Emitter Saturation Voltage	V _{CE} (sat)	I _C =100mA, I _B =5mA		0.2	0.6	V
Collector Base Saturation Voltage	V _{BE} (sat)	I _C =10mA, I _B =0.5mA		0.73	0.83	V
		I _C =100mA, I _B =5mA		0.87	1.05	V
Base Emitter On Voltage	V _{BE} (on)	V _{CE} =5V, I _C =2mA	0.55	0.62	0.7	V
Current Gain Bandwidth Product	f _T	V _{CE} =3V, I _C =0.5mA		85		MHz
		V _{CE} =5V, I _C =10mA	150	250		MHz
Collector Base Capacitance	C _{CBO}	V _{CB} =10V, f=1MHz		3.5	6	pF
Emitter Base Capacitance	C _{EBO}	V _{EB} =0.5V, f=1MHz		8		pF
Noise Figure	NF	V _{CE} =5V, I _C =0.2mA, f=1KHz R _G =2kohm		2	10	dB
: BC237/238		V _{CE} =5V, I _C =0.2mA			4	dB
: BC239		R _G =2kohm, f=30-15KHz			4	dB

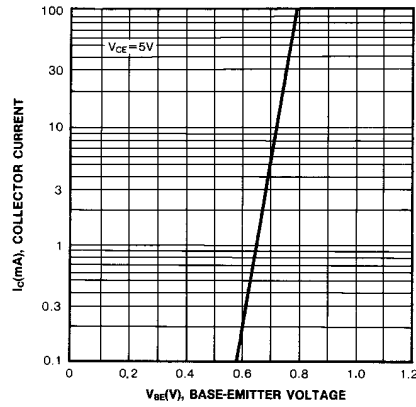
h_{FE} CLASSIFICATION

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

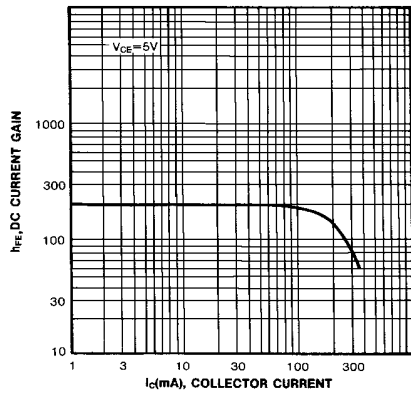
STATIC CHARACTERISTIC



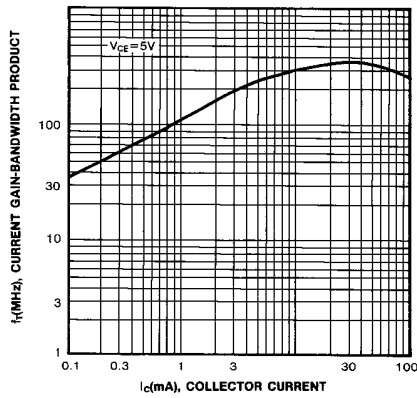
TRANSFER CHARACTERISTIC



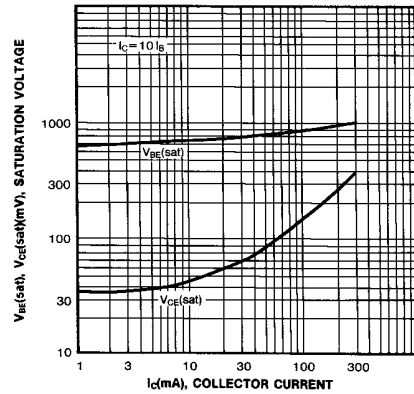
DC CURRENT GAIN



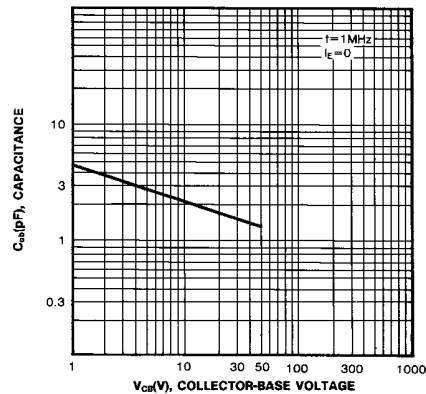
CURRENT GAIN BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



OUTPUT CAPACITANCE



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