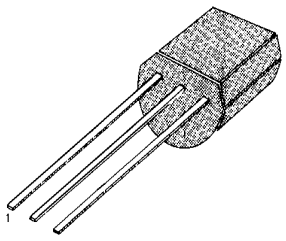
BC237/238/239 NPN EPITAXIAL SILICON TRANSISTOR

SWITCHING AND AMPLIFIER APPLICATIONS

• LOW NOISE: BC239

TO-92



1. Collector 2. Base 3. Emitter

ABSOLUTE MAXIMUM RATINGS (T_A=25℃)

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CES}		V
:BC237		50	V
BC238/239		30	
Collector-Emitter Voltage	V_{CEO}		
:BC237		45	V
BC238/239		25	V
Emitter-Base Voltage	V_{EBO}		
: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	℃
Storage Temperature	T_{STG}	-55 ~ 150	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃)

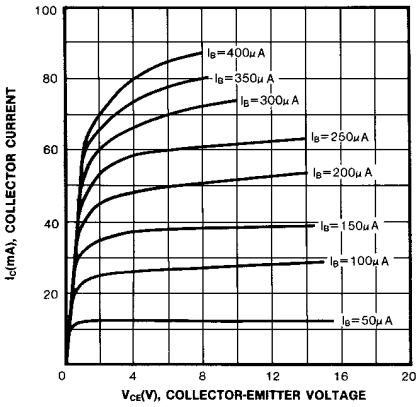
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=2mA, I_B=0				
:BC237			45			V
:BC238/239			25			V
Emitter Base Breakdown Voltage	BV_{EBO}	I_E=1㎂, I_C=0				
:BC237			6			V
:BC238/239			5			V
Collector Cut-off Current	I_{CES}					
:BC237		V_{CE}=50V, I_B=0		0.2	15	nA
:BC238/239		V_{CE}=30V, I_B=0		0.2	15	nA
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=2mA	120		800	
Collector-Emitter Saturation Voltage	V_{CE} (sat)	I_C=10mA, I_B=0.5mA		0.07	0.2	V
		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
NoiseFigure :BC237/238	NF	V_{CE}=5V, I_C=0.2mA,		2	10	dB
:BC239		f=1KHz R_G=2kohm			4	dB
:BC239	NF	V_{CE}=5V, I_C=0.2mA			4	dB
		R_G=2kohm, f=30~15KHz				

h_{FE} CLASSIFICATION

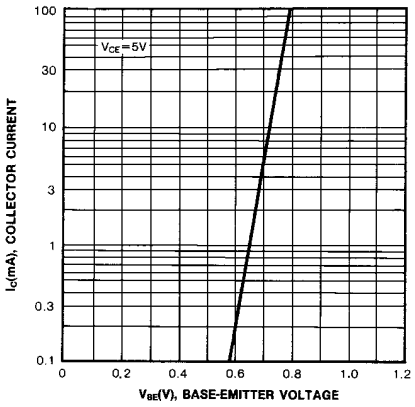
Classification	A	B	C
h_{FE}	120-220	180-460	380-800

SAMSUNG ELECTRONICS

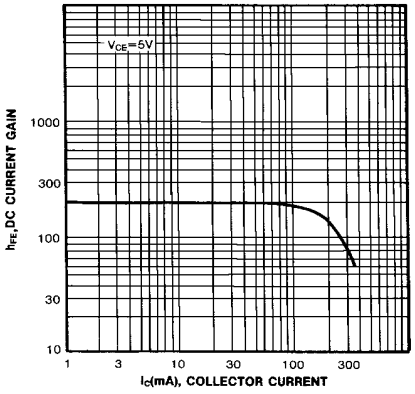
STATIC CHARACTERISTIC



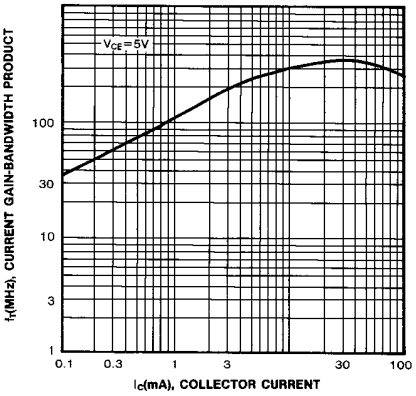
TRANSFER CHARACTERISTIC



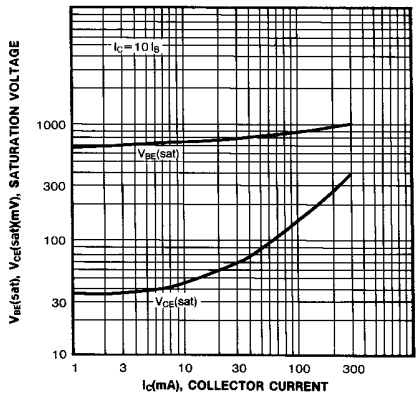
DC CURRENT GAIN



CURRENT GAIN BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



OUTPUT CAPACITANCE