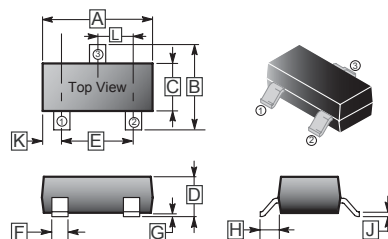


RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

**FEATURE**

- AM/FM Amplifier, Local Oscillator of FM/VHF Tuner
- High Current Gain Bandwidth Product  $f_T = 1.1 \text{ GHz}$  (Typ)

**SOT-323**

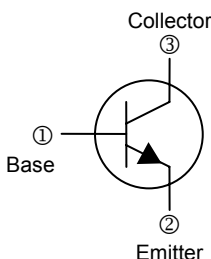


**PACKAGING INFORMATION**

Weight: 0.0074 g

**MARKING CODE**

J8



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.100 REF.	
B	1.80	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.08	0.25
D	0.80	1.10	K	-	-
E	1.20	1.40	L	0.650 TYP.	
F	0.20	0.40			

**ABSOLUTE MAXIMUM RATINGS** (at  $T_A = 25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	$V_{CB0}$	30	V
Collector to Emitter Voltage	$V_{CE0}$	15	V
Emitter to Base Voltage	$V_{EB0}$	5	V
Collector Current – Continuous	$I_C$	50	mA
Collector Power Dissipation	$P_C$	200	mW
Junction, Storage Temperature	$T_J, T_{STG}$	+150, -55 ~ +150	$^\circ\text{C}$

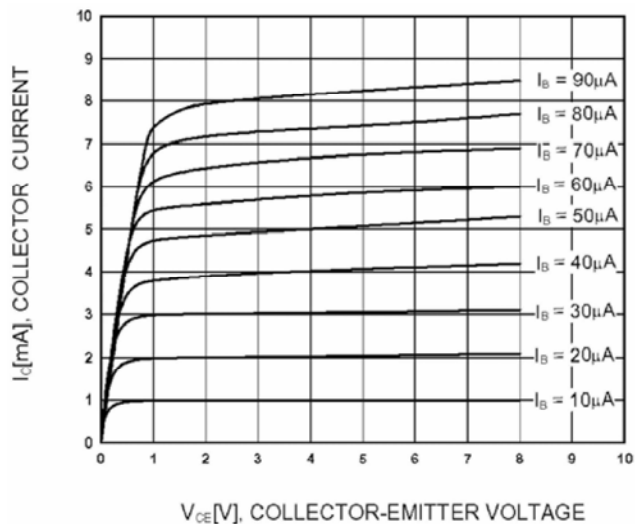
**ELECTRICAL CHARACTERISTICS** (at  $T_A = 25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-base Breakdown Voltage	$V_{(BR)CB0}$	30	-	-	V	$I_C = 100 \mu\text{A}, I_E = 0$
Collector-emitter Breakdown Voltage	$V_{(BR)CE0}$	15	-	-	V	$I_C = 0.1 \text{ mA}, I_B = 0$
Emitter-base Breakdown Voltage	$V_{(BR)EB0}$	5	-	-	V	$I_E = 100 \mu\text{A}, I_C = 0$
Collector Cut-off Current	$I_{CBO}$	-	-	50	nA	$V_{CB} = 12 \text{ V}, I_E = 0$
Collector Cut-off Current	$I_{CEO}$	-	-	100	nA	$V_{CE} = 12 \text{ V}, I_B = 0$
Emitter Cut-off Current	$I_{EBO}$	-	-	100	nA	$V_{EB} = 3 \text{ V}, I_C = 0$
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	-	-	500	mV	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$
Base-emitter Saturation Voltage	$V_{BE(sat)}$	-	-	1400	mV	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$
DC Current Gain	$h_{FE}$	70	-	190		$V_{CE} = 5 \text{ V}, I_C = 1 \text{ mA}$
Transition Frequency	$f_T$	600	-	-	MHz	$V_{CE} = 5 \text{ V}, I_C = 10 \text{ mA}, f = 30 \text{ MHz}$
Collector Output Capacitance	$C_{OB}$	-	-	2	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$

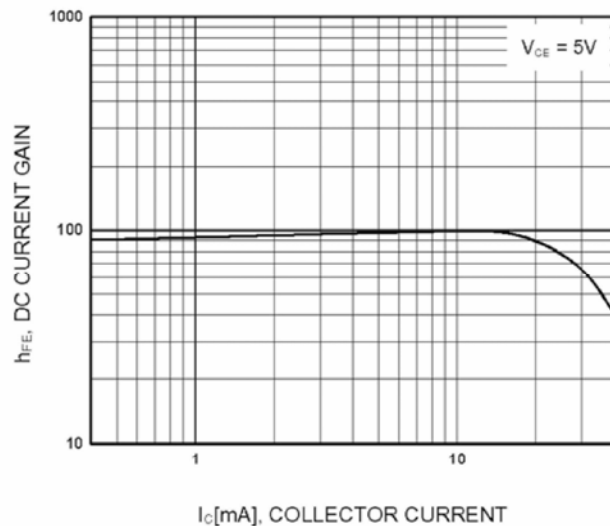
**CLASSIFICATION OF  $h_{FE}$**

Rank	L	H
$h_{FE}$	70 - 105	105 - 190

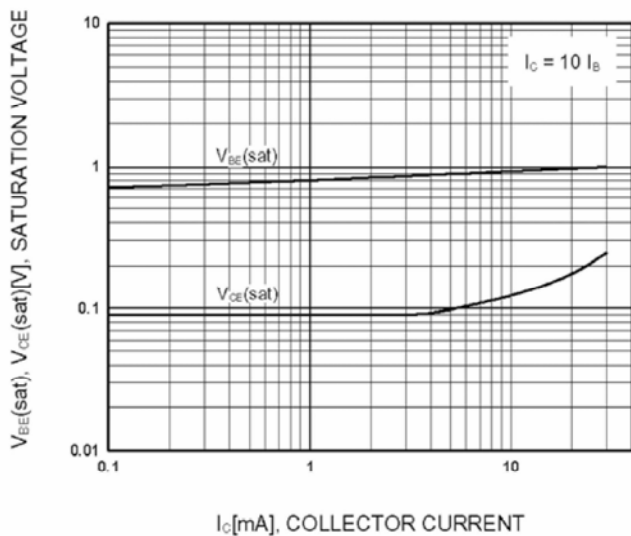
**CHARACTERISTIC CURVES**



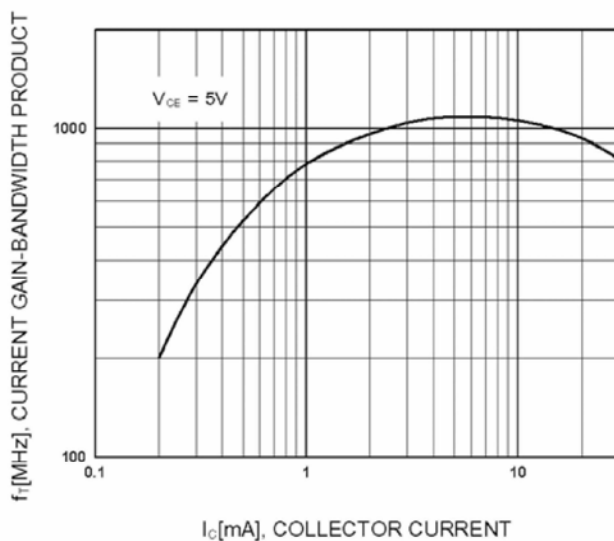
**Static Characteristic**



**DC Current Gain**



**Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Current Gain Bandwidth Product**