

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

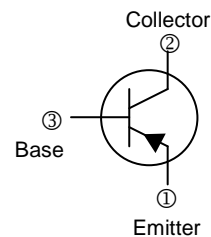
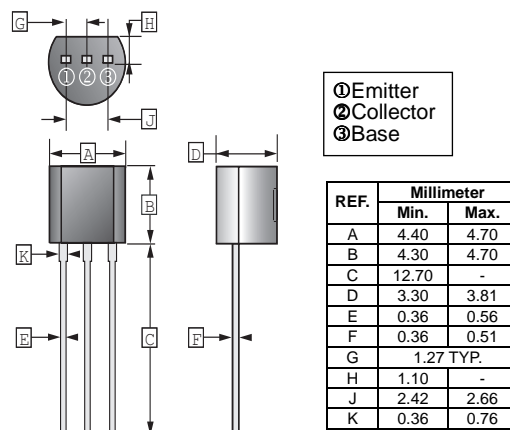
## FEATURES

- Power Dissipation

## CLASSIFICATION OF $h_{FE}$

Product-Rank	A733-R	A733-Q	A733-P	A733-K
Range	90~180	135~270	200~400	300~600

## TO-92



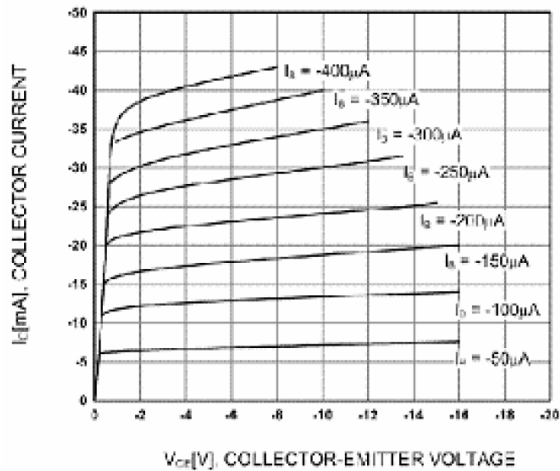
## ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	-60	V
Collector to Emitter Voltage	$V_{CEO}$	-50	V
Emitter to Base Voltage	$V_{EBO}$	-5	V
Collector Current - Continuous	$I_C$	-100	mA
Collector Power Dissipation	$P_D$	250	mW
Junction, Storage Temperature	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

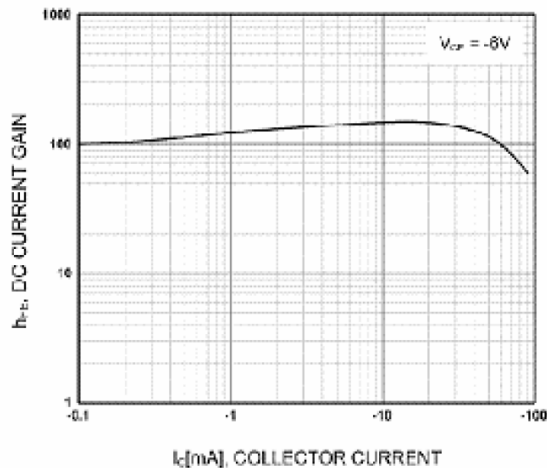
## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	-60	-	-	V	$I_C = -50\mu\text{A}, I_E = 0$
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	-50	-	-	V	$I_C = -1\text{mA}, I_B = 0$
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-	-	V	$I_E = -50\mu\text{A}, I_C = 0$
Collector Cut-Off Current	$I_{CBO}$	-	-	-0.1	$\mu\text{A}$	$V_{CB} = -60\text{V}, I_E = 0$
Emitter Cut-Off Current	$I_{EBO}$	-	-	-0.1	$\mu\text{A}$	$V_{EB} = -5\text{V}, I_C = 0$
DC Current Gain	$h_{FE}$	90	200	600		$V_{CE} = -6\text{V}, I_C = -1\text{mA}$
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	-	-0.18	-0.3	V	$I_C = -100\text{mA}, I_B = -10\text{mA}$
Base to Emitter Voltage	$V_{BE}$	-0.58	-0.62	-0.68	V	$V_{CE} = -6\text{V}, I_C = -1\text{mA}$
Transition Frequency	$f_T$	100	-	-	MHz	$V_{CE} = -6\text{V}, I_C = -10\text{mA}$
Collector Output Capacitance	$C_{ob}$	-	-	6	pF	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$
Noise Figure	NF	-	-	20	dB	$V_{CE} = -6\text{V}, I_C = -0.3\text{mA}, f = 100\text{Hz}, R_G = 10\text{k}\Omega$

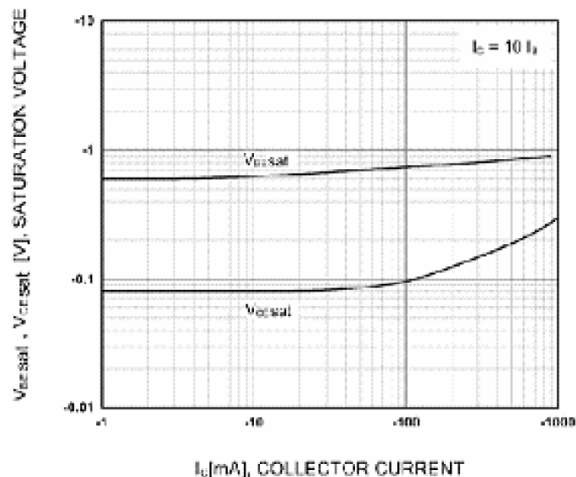
**CHARACTERISTIC CURVES**



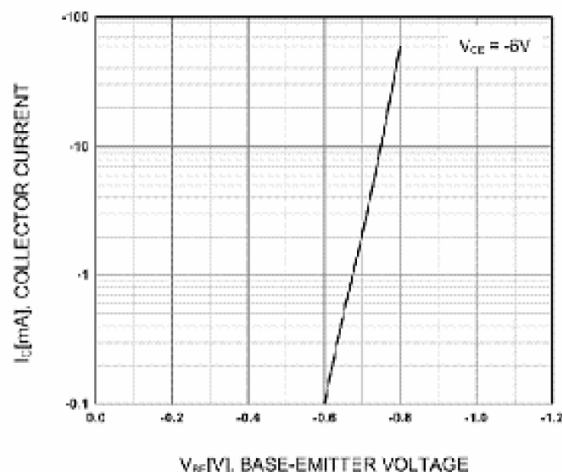
**Static Characteristic**



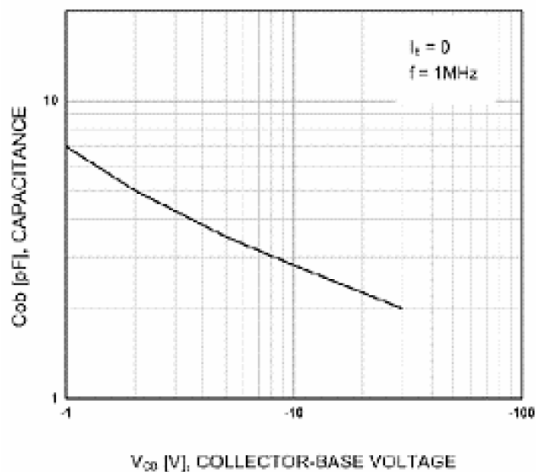
**DC current Gain**



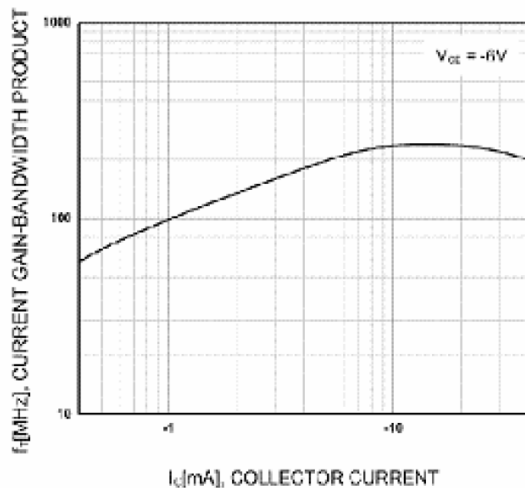
**Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Base-Emitter On Voltage**



**Collector Output Capacitance**



**Current Gain Bandwidth Product**