

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

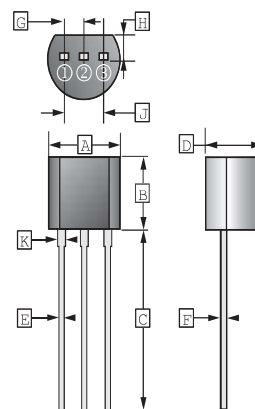
FEATURES

- Power Dissipation

CLASSIFICATION OF h_{FE}

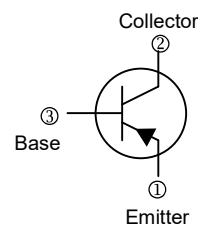
Product-Rank	A733-R	A733-Q	A733-P	A733-K
Range	90~180	135~270	200~400	300~600

TO-92



① Emitter
 ② Collector
 ③ Base

REF.	Millimeter	
	Min.	Max.
A	4.40	4.70
B	4.30	4.70
C	12.70	-
D	3.30	3.81
E	0.36	0.56
F	0.36	0.51
G	1.27 TYP.	
H	1.10	-
J	2.42	2.66
K	0.36	0.76



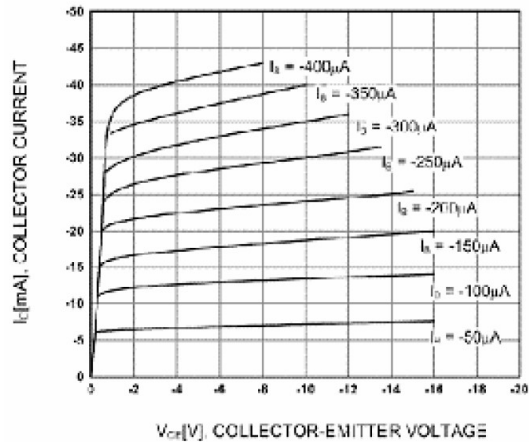
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

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	$^\circ\text{C}$

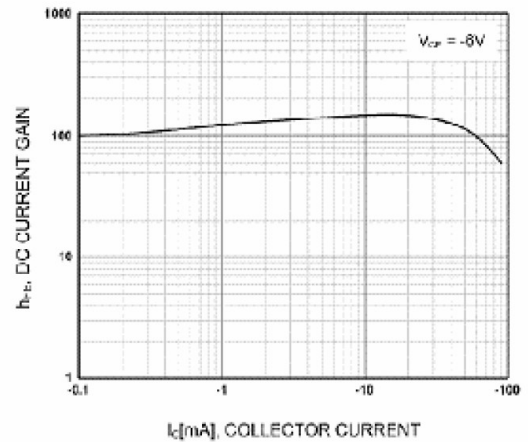
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

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	μA	$V_{CB} = -60\text{V}, I_E = 0$
Emitter Cut-Off Current	I_{EBO}	-	-	-0.1	μA	$V_{EB} = -5\text{V}, I_C = 0$
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	$V_{CE} = -6\text{V}, I_C = -0.3\text{mA}, f = 100\text{Hz}, R_G = 10\text{K}\Omega$

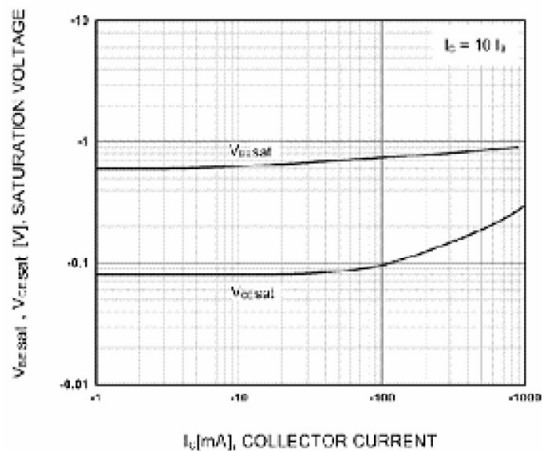
CHARACTERISTIC CURVES



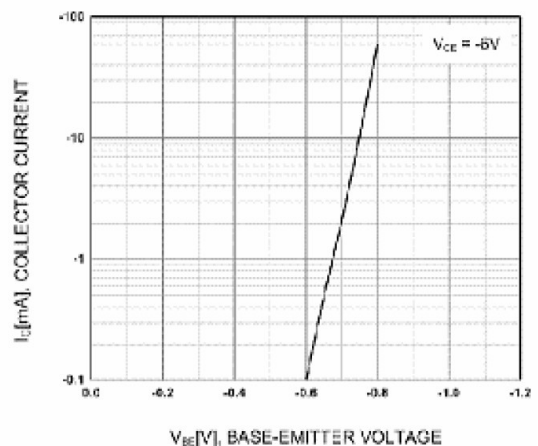
Static Characteristic



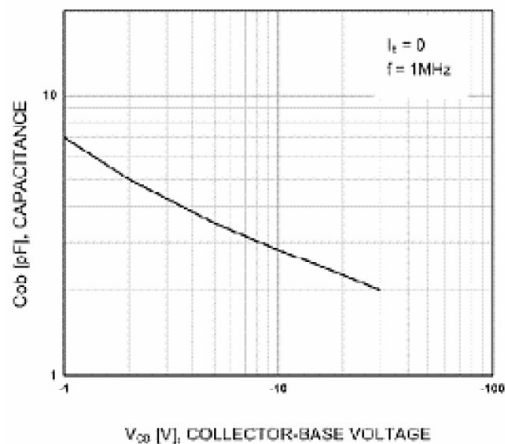
DC current Gain



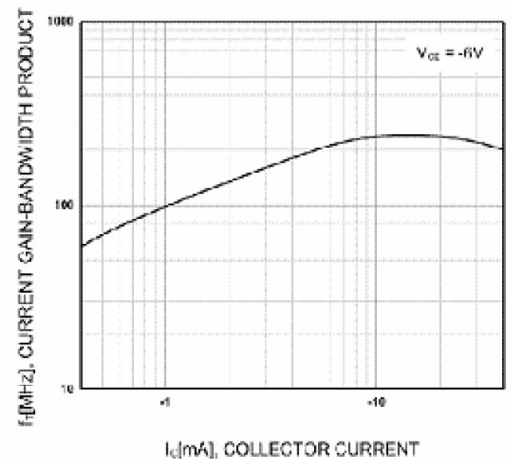
**Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage**



Base-Emitter On Voltage



Collector Output Capacitance



Current Gain Bandwidth Product