A733 TRANSISTOR (PNP)

1.BASE

2.COLLECTOR

3.EMITTER

SOT-23-3

FEATURE

- Collector-Base Voltage
- Complement to C945

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

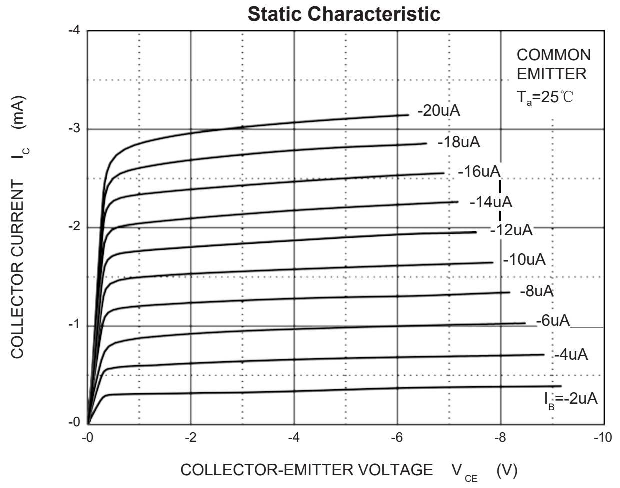
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-150	mA
P_C	Collector Power Dissipation	200	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	625	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55～+150	℃

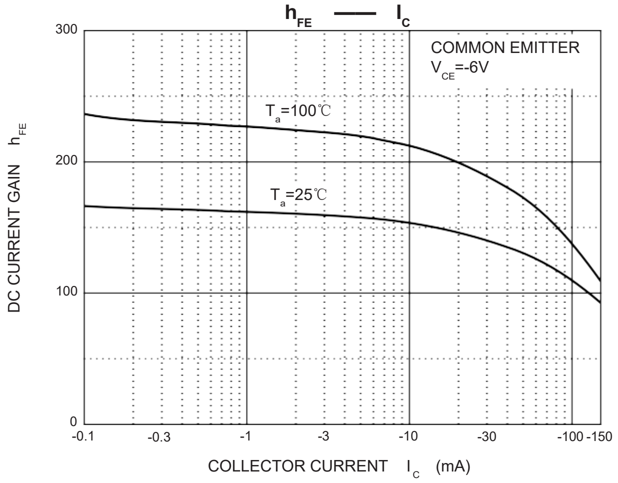
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

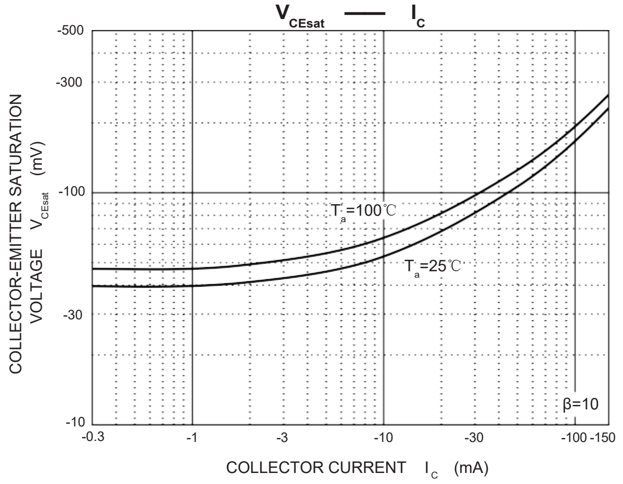
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= -5uA,I_E=0	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= -1mA , I_B=0	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= -50uA, I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}= -60 V , I_E=0			-0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= -5 V , I_C=0			-0.1	uA
DC current gain	h_{FE}	V_{CE}= -6 V, I_C= -1mA	120		475	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C= -100mA, I_B=- 10mA		-0.18	-0.3	V
Base-emitter voltage	$V_{BE(on)}$	V_{CE}=-6V,I_C=-1.0mA	-0.58	-0.62	-0.68	V
Transition frequency	f_T	V_{CE}=-6V,I_C=-10mA	50			MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V,I_E=0,f=1MH$_Z$		4.5	7	pF
Noise figure	NF	V_{CE}=-6V,I_C=-0.3mA, Rg=10kΩ,f=100H$_Z$		6	20	dB

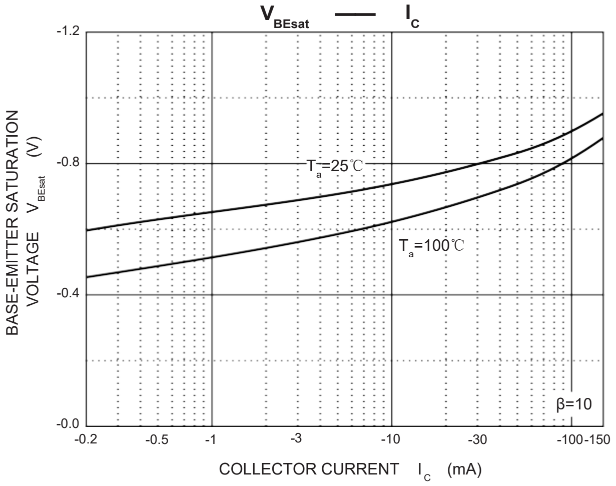
CLASSIFICATION OF h_{FE}

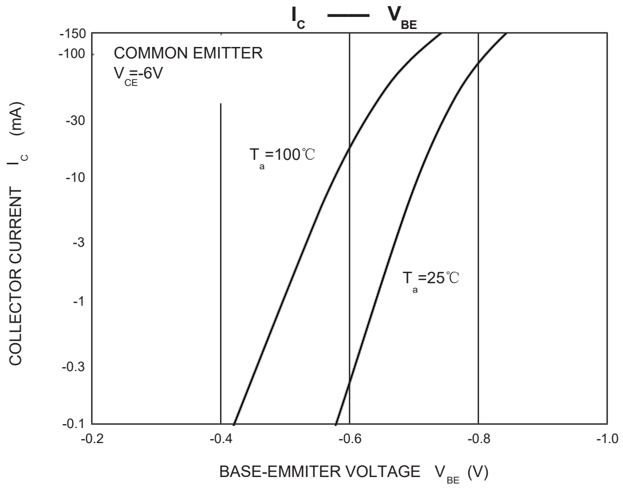
Rank	**L**	**H**
Range	120-220	220-475
MARKING	**CS**	

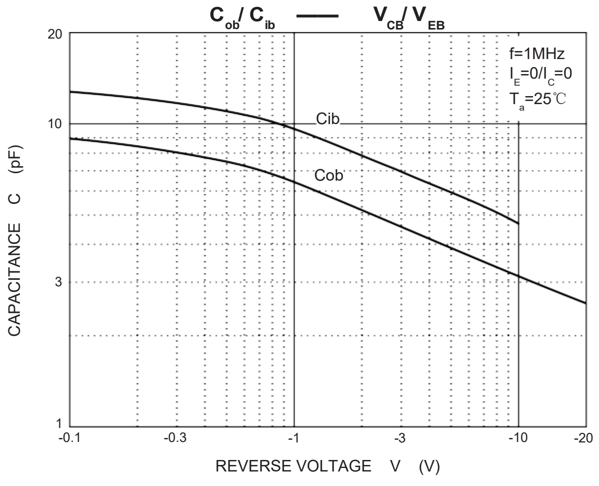

Static Characteristic
COMMON
EMITTER
T_a=25℃
-20uA
-18uA
-16uA
-14uA
-12uA
-10uA
-8uA
-6uA
-4uA
I_B=-2uA
COLLECTOR CURRENT I_C (mA)
-4
-3
-2
-1
-0
-0
-2
-4
-6
-8
-10
COLLECTOR-EMITTER VOLTAGE V_CE (V)

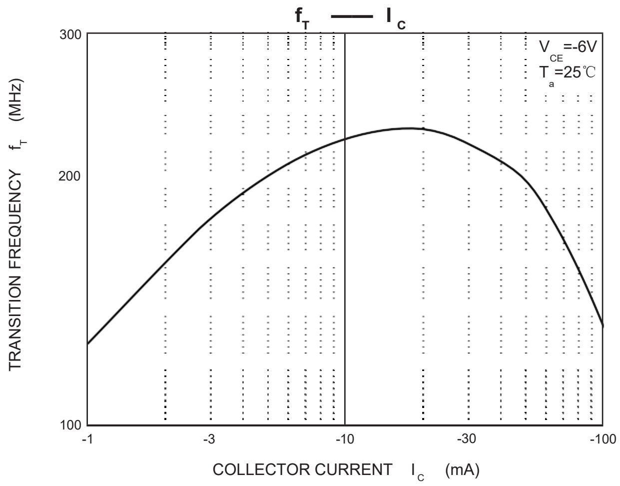

h_FE — I_C
COMMON EMITTER
V_CE=-6V
T_a=100℃
T_a=25℃
DC CURRENT GAIN h_FE
300
200
100
0
-0.1
-0.3
-1
-3
-10
-30
-100 -150
COLLECTOR CURRENT I_C (mA)

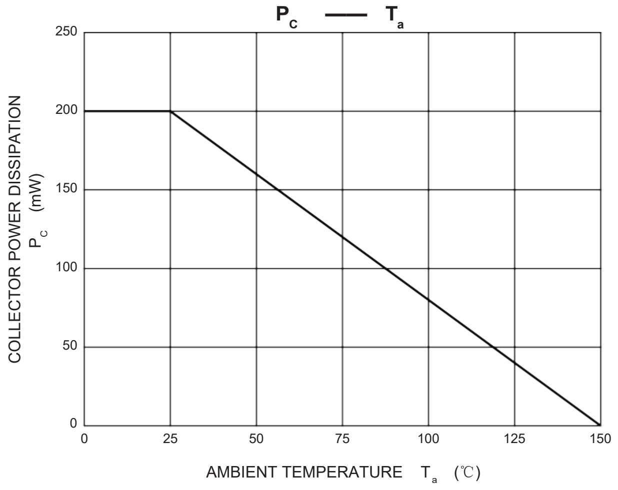

V_CEsat — I_C
T_a=100℃
T_a=25℃
β=10
COLLECTOR-EMITTER SATURATION VOLTAGE V_CEsat (mV)
-500
-300
-100
-30
-10
-0.3
-1
-3
-10
-30
-100 -150
COLLECTOR CURRENT I_C (mA)


V_BEsat — I_C
T_a=25℃
T_a=100℃
β=10
BASE-EMITTER SATURATION VOLTAGE V_BEsat (V)
-1.2
-0.8
-0.4
-0.0
-0.2
-0.5
-1
-3
-10
-30
-100 -150
COLLECTOR CURRENT I_C (mA)


I_C — V_BE
COMMON EMITTER
V_CE=-6V
T_a=100℃
T_a=25℃
COLLECTOR CURRENT I_C (mA)
-150
-100
-30
-10
-3
-1
-0.3
-0.1
-0.2
-0.4
-0.6
-0.8
-1.0
BASE-EMMITER VOLTAGE V_BE (V)


C_ob/ C_ib — V_CB/ V_EB
f=1MHz
I_E=0/I_C=0
T_a=25℃
Cib
Cob
CAPACITANCE C (pF)
20
10
3
1
-0.1
-0.3
-1
-3
-10
-20
REVERSE VOLTAGE V (V)


f_T — I_C
V_CE=-6V
T_a=25℃
TRANSITION FREQUENCY f_T (MHz)
300
200
100
-1
-3
-10
-30
-100
COLLECTOR CURRENT I_C (mA)


P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
250
200
150
100
50
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T_a (℃)