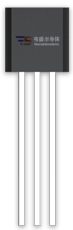
C1815 TRANSISTOR (NPN)



TO-92

1.EMITTER
2.COLLECTOR
3.BASE

FEATURES

Power dissipation

ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
C1815	TO-92	Bulk	1000pcs/Bag
C1815-TA	TO-92	Tape	2000pcs/Box

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

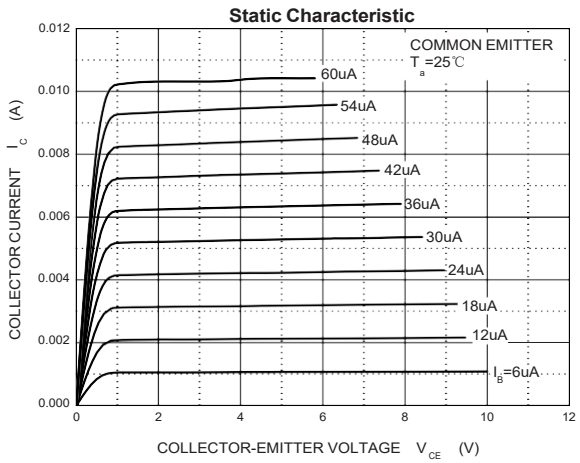
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	150	mA
P_C	Collector Power Dissipation	400	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	312	℃/W
T_{stg}	Operation Junction and Storage Temperature Range	-55 ~+ 150	℃

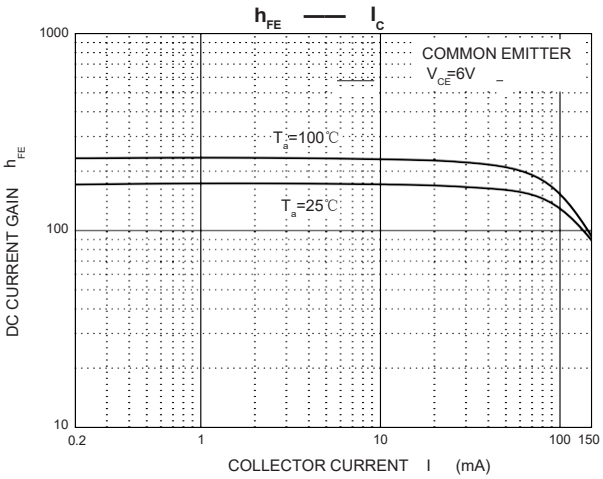
T_a=25℃ unless otherwise specified

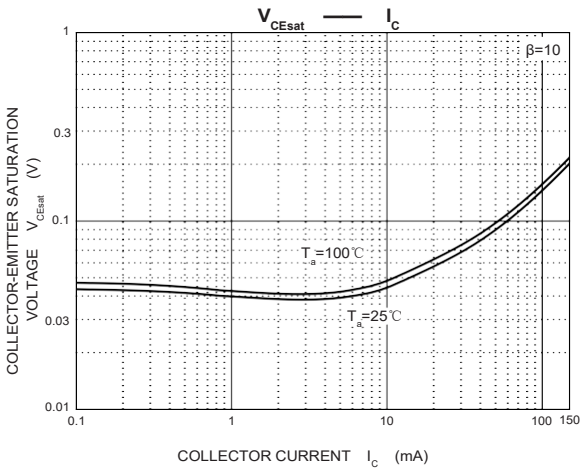
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 100uA, I_E=0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 0. 1mA, I_B=0	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 100uA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}= 60V,I_E=0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			0.1	uA
DC current gain	h_{FE}	V_{CE}= 6 V, I_C= 2mA	70		700	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=100mA, I_B=10mA			0.25	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=100mA, I_B=10mA			1	V
Transition frequency	f_T	V_{CE}=10 V, I_C= 1mA f=30MHz	80			MHz
Collector Output Capacitance	Cob	V_{CB}=10V,I_E=0 f=1MHz			3.5	pF
Noise Figure	NF	V_{CE}=6V,I_C=0.1mA f =1KHz,R_G=10K			10	dB

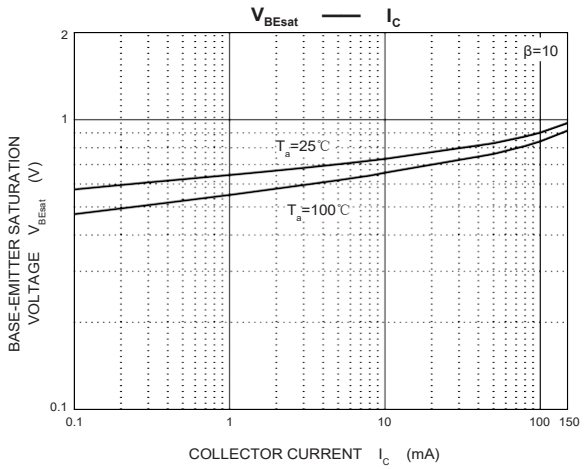
CLASSIFICATION OF h_{FE}

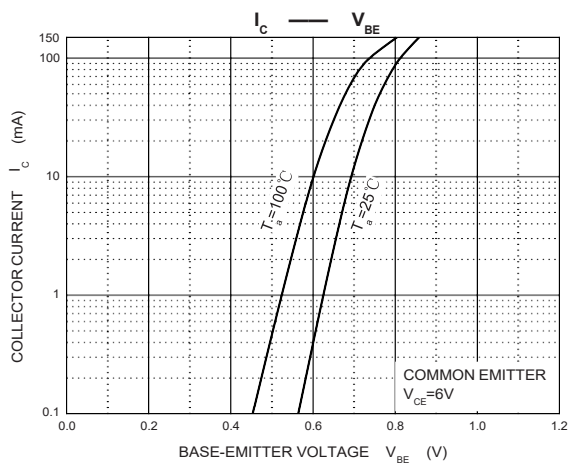
Rank	O	Y	GR	BL
Range	70-140	120-240	200-400	350-700

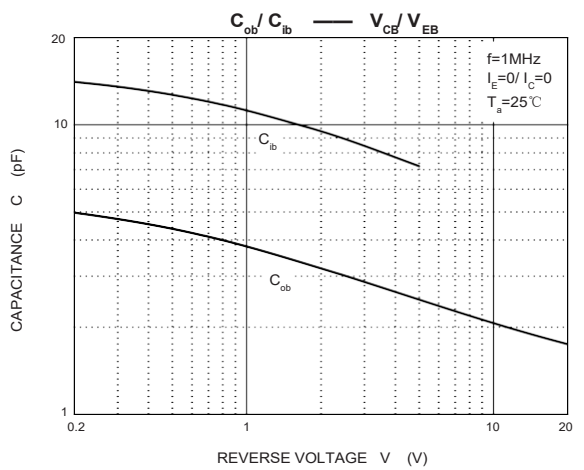

Static Characteristic
COMMON EMITTER
T a =25℃
60uA
54uA
48uA
42uA
36uA
30uA
24uA
18uA
12uA
I B =6uA
COLLECTOR CURRENT I C (A)
COLLECTOR-EMITTER VOLTAGE V CE (V)

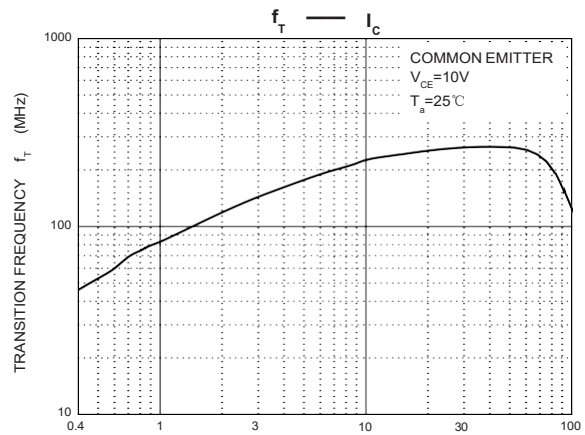

h FE — I C
COMMON EMITTER
V CE =6V
T a =100℃
T a =25℃
DC CURRENT GAIN h FE
COLLECTOR CURRENT I (mA)

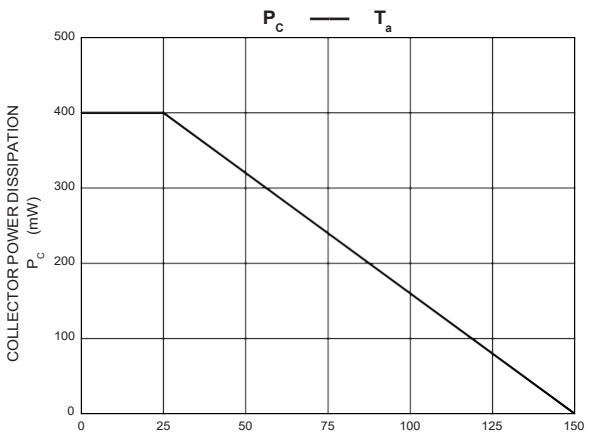

V CEsat — I C
β=10
T a =100℃
T a =25℃
COLLECTOR-EMITTER SATURATION VOLTAGE V CEsat (V)
COLLECTOR CURRENT I C (mA)


V BEsat — I C
β=10
T a =25℃
T a =100℃
BASE-EMITTER SATURATION VOLTAGE V BEsat (V)
COLLECTOR CURRENT I C (mA)


I C — V BE
T a =100℃
T a =25℃
COMMON EMITTER
V CE =6V
COLLECTOR CURRENT I C (mA)
BASE-EMITTER VOLTAGE V BE (V)


C ob / C ib — V CB / V EB
f=1MHz
I E =0/ I C =0
T a =25℃
C ib
C ob
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)


f T — I C
COMMON EMITTER
V CE =10V
T a =25℃
TRANSITION FREQUENCY f T (MHz)


P C — T a
COLLECTOR POWER DISSIPATION P C (mW)