TO-92 Plastic-Encapsulate Transistors

C1815 TRANSISTOR(NPN)

TO-92

1.EMITTER

2.COLLECTOR

3.BASE

FEATURES

Power dissipation

P_{CM}: 0.4W (Tamb=25℃)

Collector current

I_{CM}: 0.15A

Collector-base voltage

$V_{(BR)CBO}$: 60 V

Operating and storage junction temperature range

T_J, T_{stg}: -55℃ to + 150℃

ELECTRICAL CHARACTERISTICS

(Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 100 μ A, I_E=0	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 0.1 mA, I_B=0	50		V
Collector cut-off current	I_{CBO}	V_{CB}= 60 V, I_E=0		0.1	μ A
Collector cut-off current	I_{CEO}	V_{CE}= 50 V, I_B=0		0.1	μ A
Emitter cut-off current	I_{EBO}	V_{EB}= 5 V, I_C=0		0.1	μ A
DC current gain	h_{FE}	V_{CE}= 6 V, I_C= 2 mA	70	700	
Collector-emitter saturation voltage	V_{CEsat}	I_C= 100 mA, I_B= 10 mA		0.25	V
Base-emitter saturation voltage	V_{BEsat}	I_C= 100 mA, I_B= 10 mA		1	V
Base-emitter voltage	V_{BE}	I_E = 310 mA		1.45	V
Transition frequency	f_T	V_{CE}= 10 V, I_C= 1 mA f= 30 MHz	80		MHz

CLASSIFICATION OF $h_{FE(1)}$

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

IC – VCE
COMMON EMITTER
Ta=25°C
6.0
5.0
3.0
2.0
1.0
0.5
IB=0.2mA
0
COLLECTOR CURRENT IC (mA)
COLLECTOR-EMITTER VOLTAGE VCE (V)

hFE – IC
COMMON EMITTER
VCE=6V
VCE=1V
Ta=100°C
25
–25
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (mA)

VCEsat – IC
COMMON EMITTER
IC/IB=10
Ta=100°C
25
–25
COLLECTOR-EMITTER SATURATION VOLTAGE VCEsat (V)
COLLECTOR CURRENT IC (mA)

VBEsat – IC
COMMON EMITTER
IC/IB=10
Ta=25°C
BASE-EMITTER SATURATION VOLTAGE VBEsat (V)
COLLECTOR CURRENT IC (mA)

PC – Ta
COLLECTOR POWER DISSIPATION PC (mW)
AMBIENT TEMPERATURE Ta (°C)

fT – IC
COMMON EMITTER
VCE=10V
Ta=25°C
TRANSITION FREQUENCY fT (MHz)
EMITTER CURRENT IC (mA)