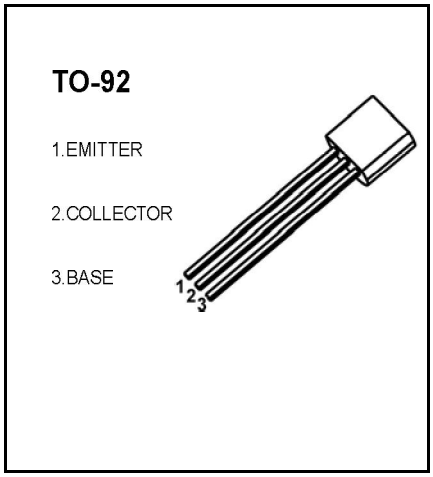
DONGGUAN NANJING ELECTRONICS LTD.,

TO-92 Plastic-Encapsulate Transistors

2SC1815 TRANSISTOR (NPN)



FEATURES

- **Power dissipation**

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_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~+150	℃

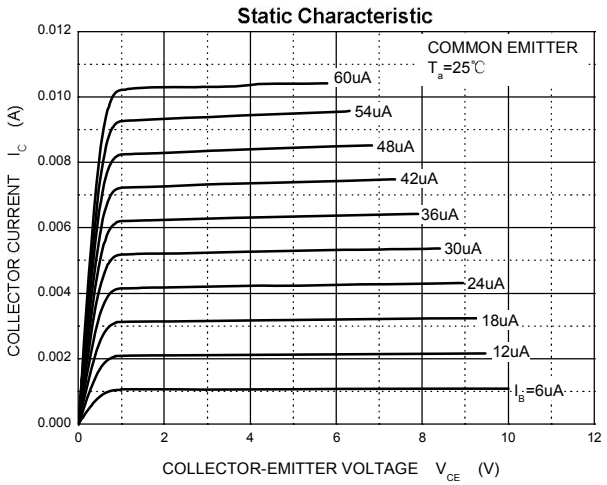
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

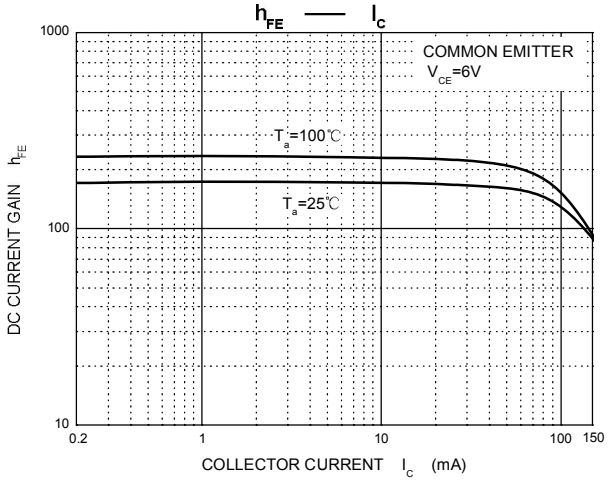
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 100uA, I_E=0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 0. 1mA, I_B=0	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 100uA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}= 60V,I_E=0			0.1	uA
Collector cut-off current	I_{CEO}	V_{CE}= 50V, I_B=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

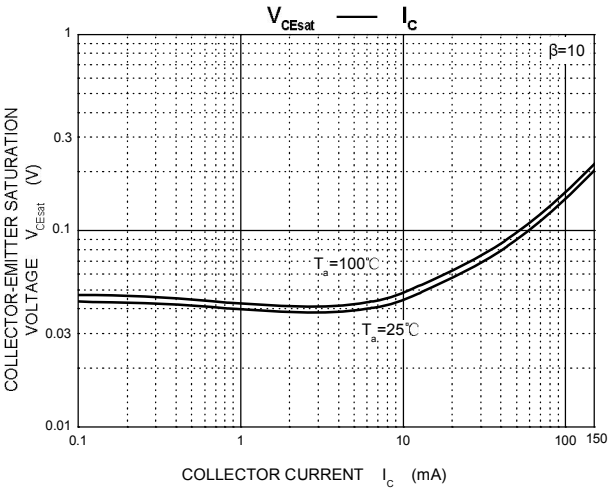
CLASSIFICATION OF h_{FE}

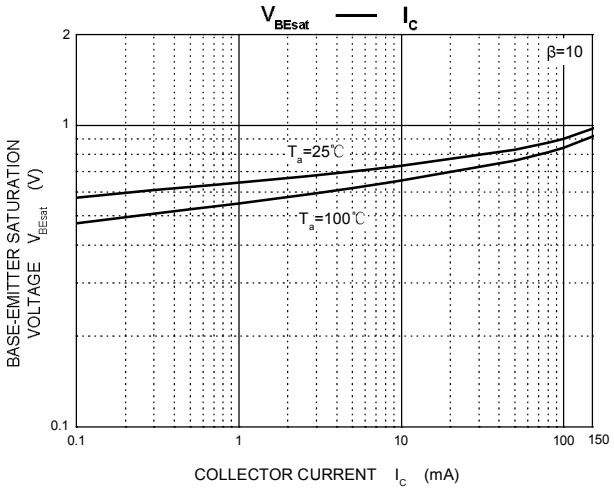
Rank	O	Y	GR	BL
Range	70-140	120-240	200-400	350-700

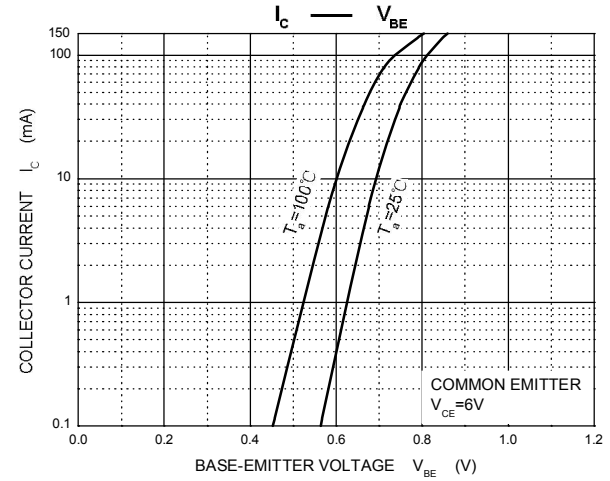
Typical Characteristics

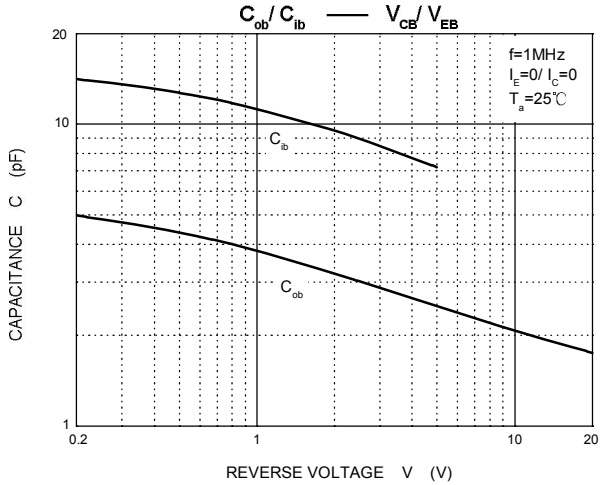


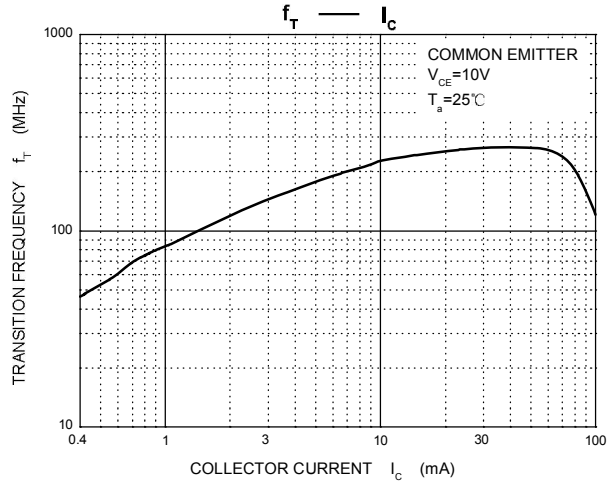


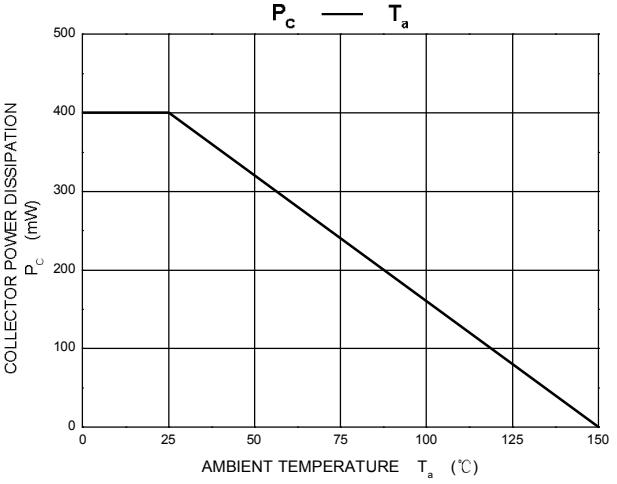




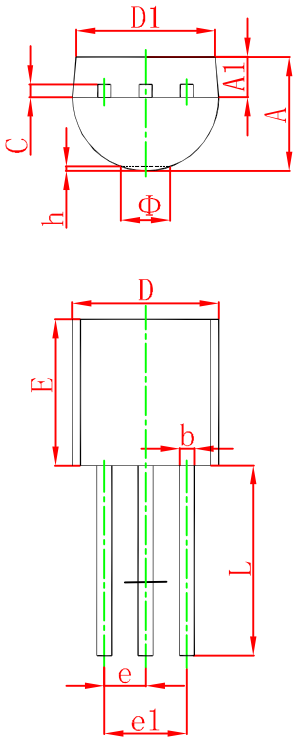






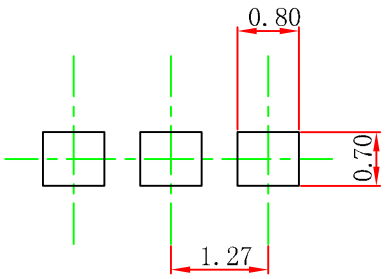


TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.