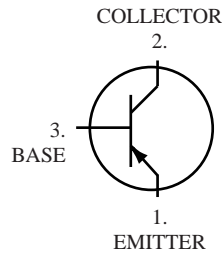
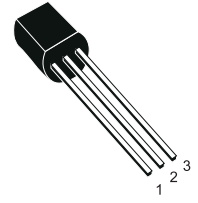


PNP Transistor

 Lead(Pb)-Free



1. EMITTER
2. COLLECTOR
3. BASE



TO-92L

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

Parameter	Symbol	value	Units
Collector-Base Voltage	V_{CBO}	-30	V
Collector-Emitter Voltage	V_{CEO}	-30	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current -Continuous	I_C	-2	A
Collector Power Dissipation	P_C	1	W
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to- +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	MIN	TYPE	MAX	UNIT
Collector-base breakdown voltage	$V(BR)_{CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-30			V
Collector-emitter breakdown voltage	$V(BR)_{CEO}$	$I_C = -10\text{ mA}, I_B = 0$	-30			V
Emitter-base breakdown voltage	$V(BR)_{EBO}$	$I_E = -1\text{mA}, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -30\text{V}, I_E = 0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-0.1	μA
DC current gain	h_{FE}	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	100		320	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -1.5\text{ A}, I_B = -0.03\text{A}$			-2	V
Base-emitter voltage	V_{BE}	$I_C = -500\text{ mA}, V_{CE} = -2\text{V}$			-1	V
Transition frequency	f_T	$V_{CE} = -2\text{ V}, I_C = -500\text{mA}$		120		MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		48		pF

CLASSIFICATION OF $h_{FE(2)}$

Rank	O	Y
Range	100-200	160-320

Ratings and Characteristic Curves

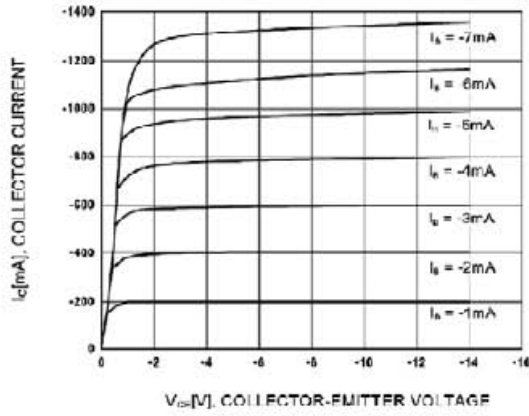


Figure 1. Static Characteristic

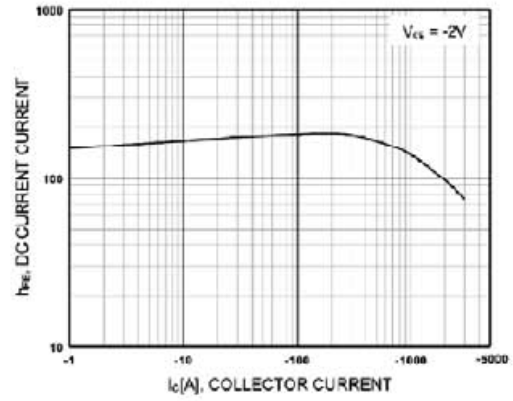


Figure 2. DC current Gain

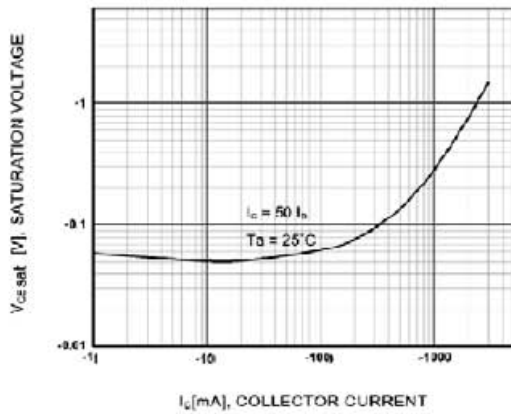


Figure 3. Collector-Emitter Saturation Voltage

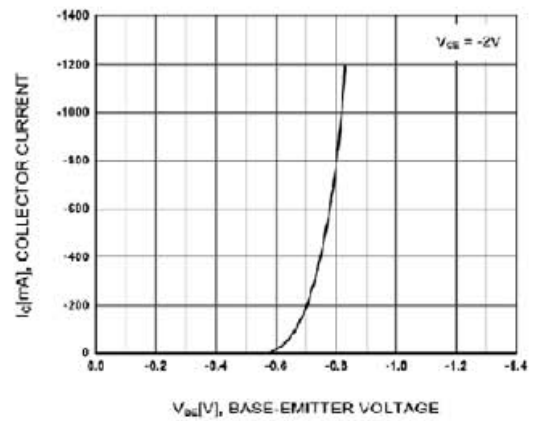


Figure 4. Base-Emitter On Voltage

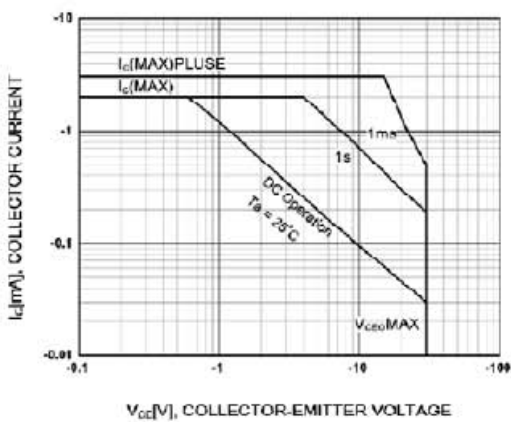


Figure 5. Safe Operating Area

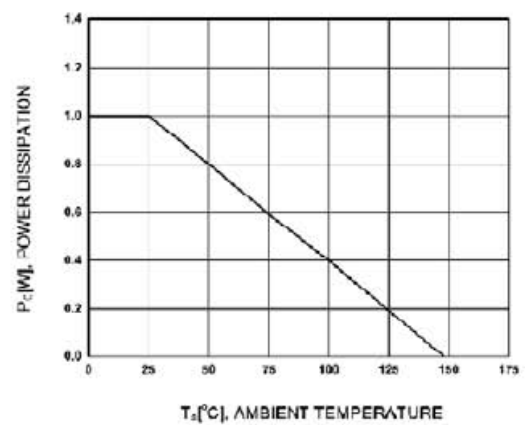
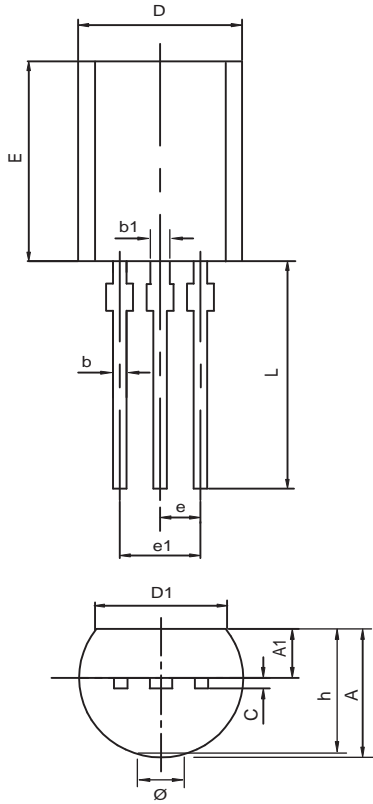


Figure 6. Power Derating

TO-92L Outline Dimensions

unit:mm



TO-92L		
Dim	Min	Max
A	3.70	4.10
A1	1.28	1.58
b	0.35	0.55
b1	0.60	0.80
c	0.35	0.45
D	4.70	5.10
D1	4.00	-
E	7.80	8.20
e	1.270TYP	
e1	2.44	2.64
L	13.8	14.2
Ø	-	1.60
h	0.00	0.30