

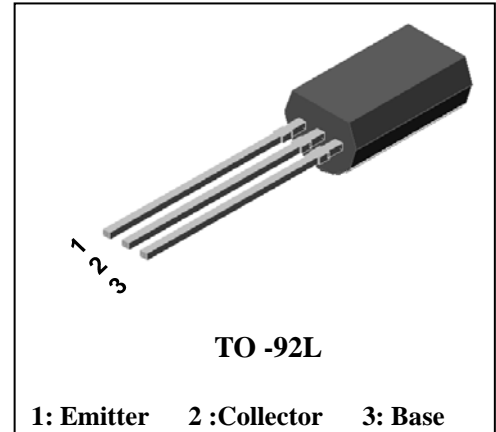
Descriptions

- Suitable for low voltage large current drivers
- Excellent h_{FE} Linearity.
- Switching Application

Features

- High h_{FE} : $h_{FE}=200\sim 400$
- Low collector saturation voltage.
: $V_{CE(sat)} = -0.5V(\text{MAX.})$

PIN Connection



Ordering Information

Type NO.	Marking	Package Code
STB205L	STB 205 YWW	TO-92L

STB205: DEVICE CODE, YWW(Y : Year code, WW : Weekly code)

Absolute Maximum Ratings

($T_a=25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-35	V
Collector-emitter voltage	V_{CEO}	-20	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-5	A(DC)
	I_{CP}^*	-10	A(Pulse)
Collector power dissipation	P_C	1	W
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55~150	$^\circ\text{C}$

* : Single pulse, $t_p=300\ \mu\text{s}$

Characteristic	Symbol	Typ.	Max	Unit
Thermal resistance	$R_{th(J-a)}$	-	125.0	$^\circ\text{C}/\text{W}$

Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	BV_{CBO}	$I_C = -50\mu A, I_E = 0$	-35	-	-	V
Collector-Emitter breakdown voltage	BV_{CEO}	$I_C = -1mA, I_B = 0$	-20	-	-	V
Emitter-Base breakdown voltage	BV_{EBO}	$I_E = -50\mu A, I_C = 0$	-5	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB} = -35V, I_E = 0$	-	-	-1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5V, I_C = 0$	-	-	-1	μA
DC current gain	* $h_{FE}^{1)}$	$V_{CE} = -2V, I_C = -0.5A$	200	-	400	-
	h_{FE}	$V_{CE} = -2V, I_C = -3A$	40	-	-	-
Collector-emitter saturation voltage	* $V_{CE(sat)}^{2)}$	$I_C = -3A, I_B = -0.15A$	-	-	-0.5	V
Base-emitter saturation voltage	* $V_{BE(sat)}^{2)}$	$V_C = -3A, I_B = -0.15A$	-	-	-1.2	V
Transition frequency	f_T	$V_{CB} = -5V, I_C = -50mA$	-	180	-	MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$	-	42	-	pF

* Note 1) h_{FE} Rank : 200~400 only

* Note 2) Pulse Tester : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

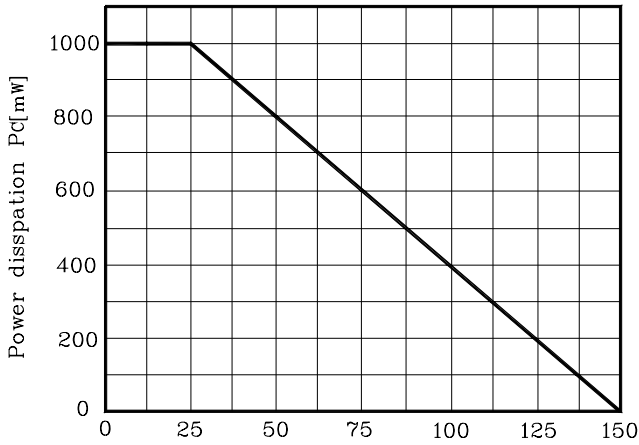


Fig. 2 $I_C - V_{BE}$

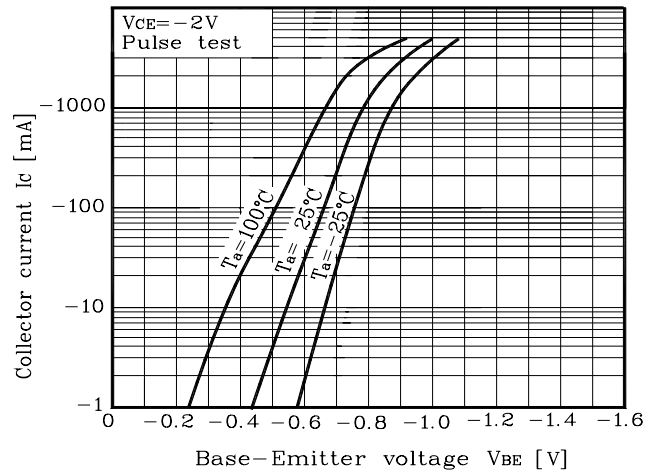


Fig. 3 $h_{FE} - I_C$

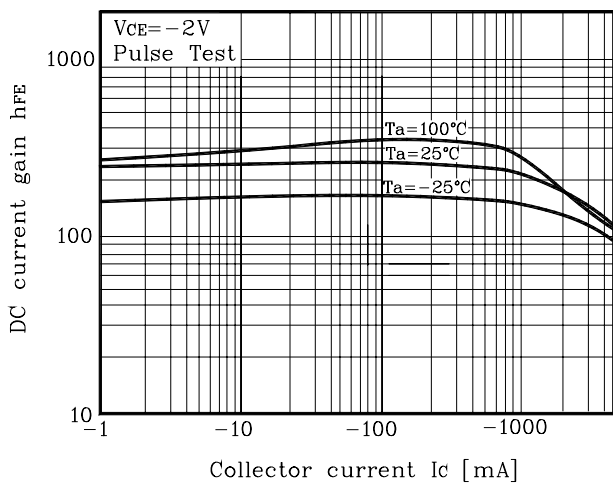


Fig. 4 $V_{CE(sat)} - I_C$

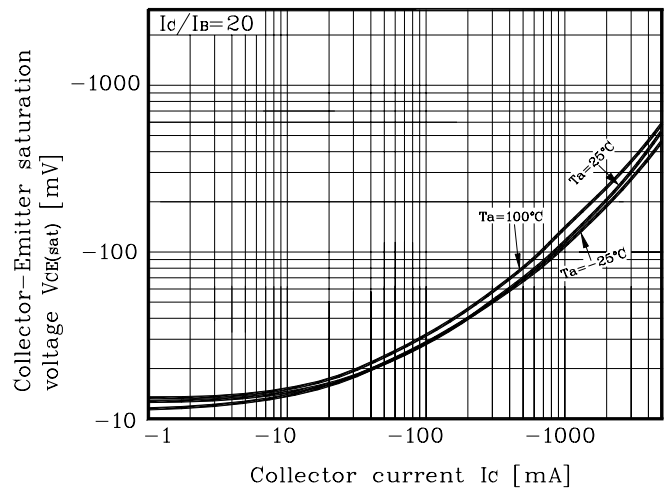


Fig. 5 $C_{ob} - V_{CB}$

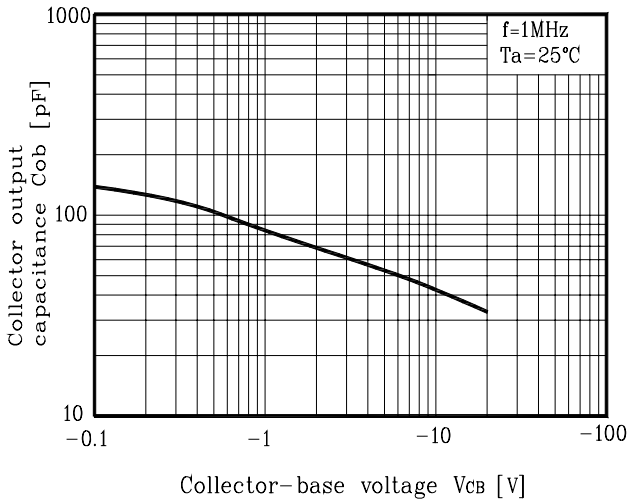
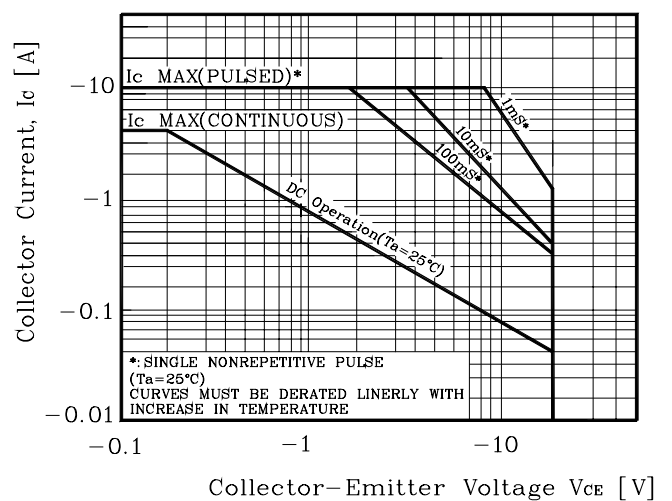
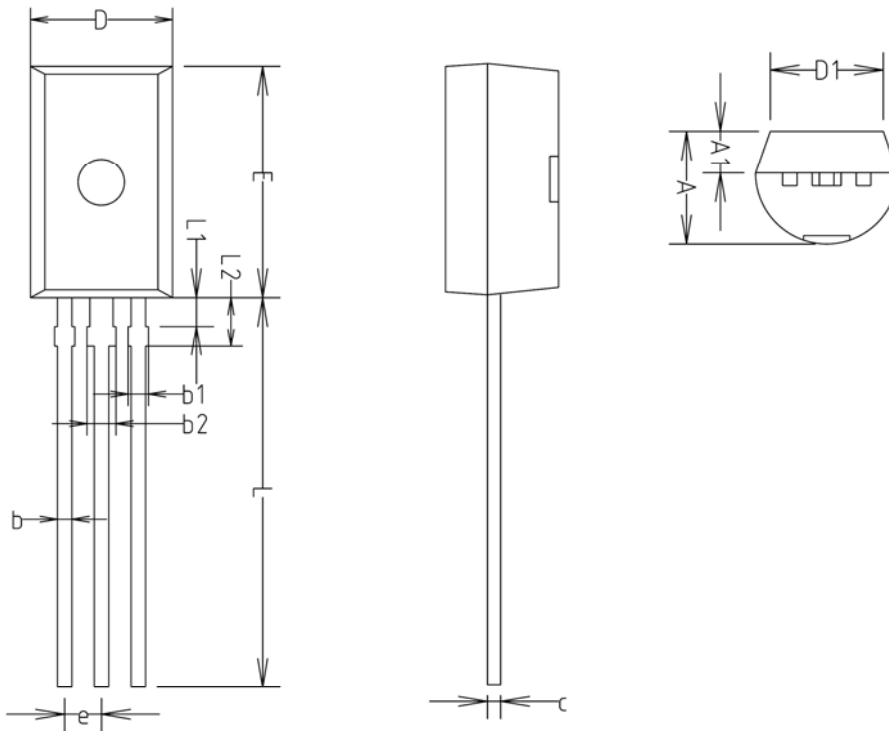


Fig. 6 Safe Operating Area



Outline Dimension



SYMBOL	MILLIMETERS(mm)			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	3.70	3.90	4.10	
A1	1.25	1.45	1.65	
b	0.40	0.50	0.60	
b1	-	-	0.70	
b2	-	-	1.00	
c	0.35	0.45	0.55	
D	4.70	4.90	5.10	
D1	3.70	3.90	4.10	
E	7.80	8.00	8.20	
e	1.27 TYP			
L	13.10	13.50	13.90	
L1	0.90	1.00	1.10	
L2	1.50	1.70	1.90	

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