

**Description**

- General purpose amplifier
- High voltage application

**Features**

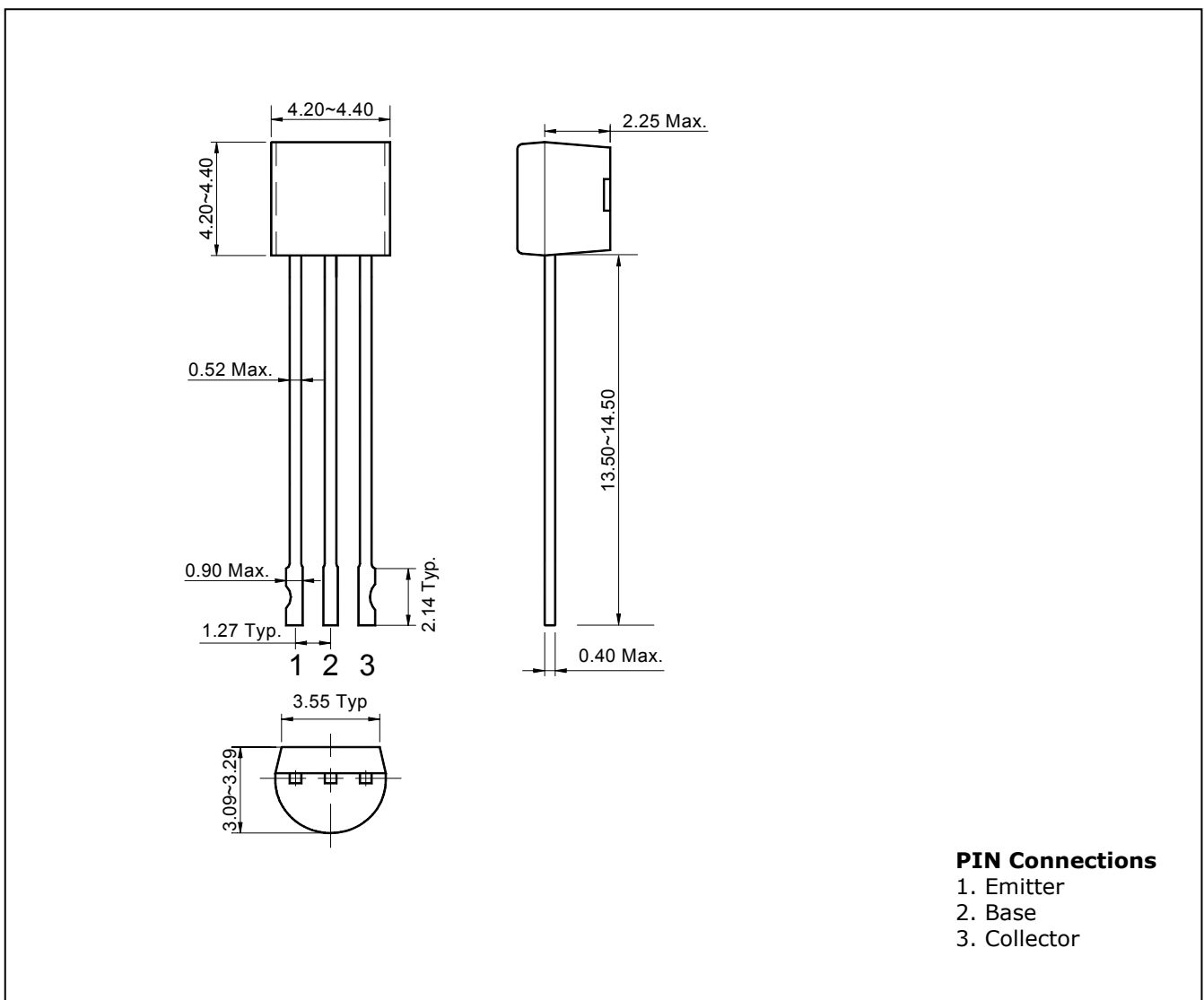
- High collector breakdown voltage :  $V_{CBO} = -160V$ ,  $V_{CEO} = -160V$
- Low collector saturation voltage :  $V_{CE(sat)} = -0.5V(MAX.)$
- Complementary pair with 2N5551N

**Ordering Information**

Type NO.	Marking	Package Code
2N5401N	2N5401	TO-92N

**Outline Dimensions**

unit : mm



**Absolute Maximum Ratings**

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-160	V
Collector-emitter voltage	$V_{CEO}$	-160	V
Emitter-base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-600	mA
Collector power dissipation	$P_C$	400	mW
Junction temperature	$T_J$	150	°C
Storage temperature range	$T_{stg}$	-55~150	°C

**Electrical Characteristics**

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	$BV_{CEO}$	$I_C = -1mA, I_B = 0$	-160	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -160V, I_E = 0$	-	-	-100	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5V, I_C = 0$	-	-	-100	nA
DC current gain	$h_{FE(1)}$	$V_{CE} = -5V, I_C = -1mA$	50	-	-	-
DC current gain	$h_{FE(2)}$	$V_{CE} = -5V, I_C = -10mA$	60	-	240	-
DC current gain	$h_{FE(3)}$	$V_{CE} = -5V, I_C = -50mA$	50	-	-	-
Collector-emitter saturation voltage	$V_{CE(sat)(1)}^*$	$I_C = -10mA, I_B = -1mA$	-	-	-0.2	V
Collector-emitter saturation voltage	$V_{CE(sat)(2)}^*$	$I_C = -50mA, I_B = -5mA$	-	-	-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)(1)}^*$	$I_C = -10mA, I_B = -1mA$	-	-	-1	V
Base-emitter saturation voltage	$V_{BE(sat)(2)}^*$	$I_C = -50mA, I_B = -5mA$	-	-	-1	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = -5V, I_C = -50mA$	-	-0.7	-0.9	V
Transition frequency	$f_T$	$V_{CE} = -10V, I_C = -10mA$	100	-	400	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$	-	-	6	pF

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

Electrical Characteristic Curves

Fig. 1  $P_c - T_a$

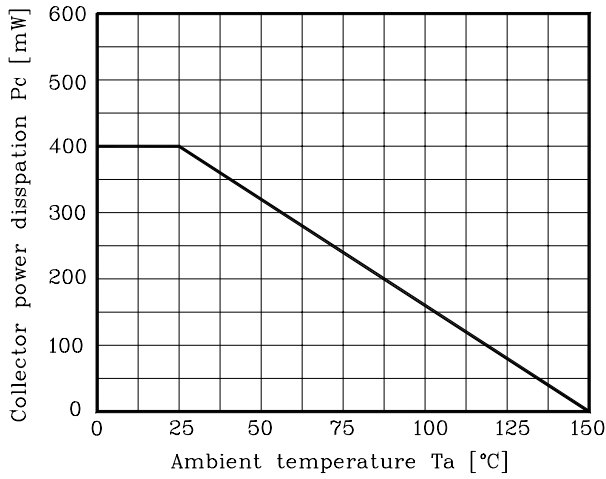


Fig. 2  $I_c - V_{BE}$

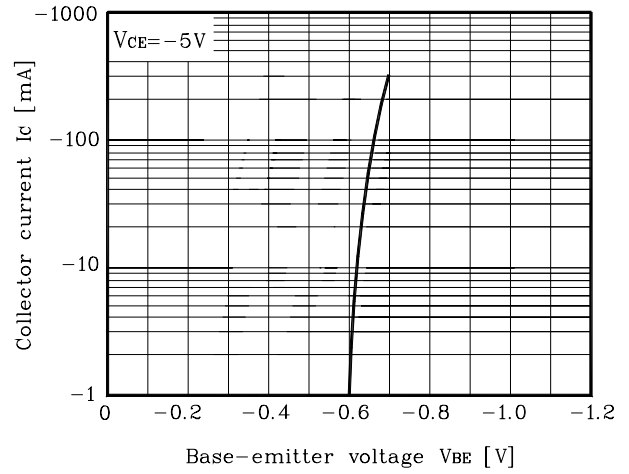


Fig. 3  $f_T - I_c$

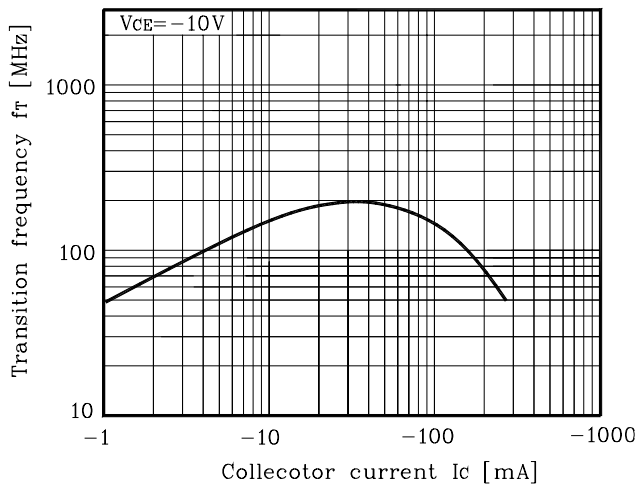


Fig. 4  $V_{CE(sat)}, V_{BE(sat)} - I_c$

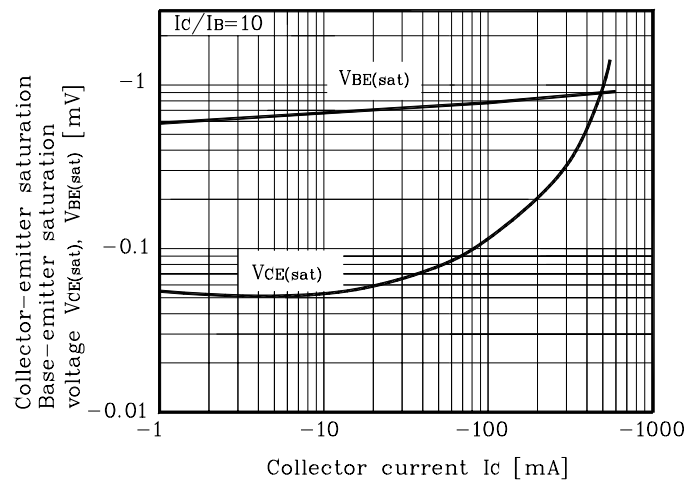
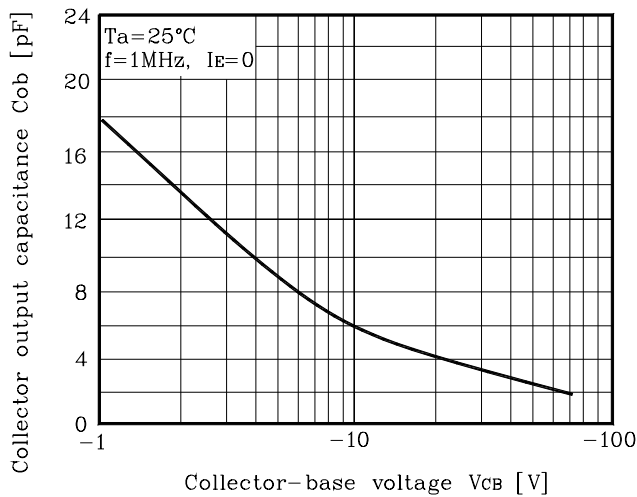


Fig. 5  $C_{ob} - V_{CB}$



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