

**Descriptions**

- General small signal application
- Switching application

**Features**

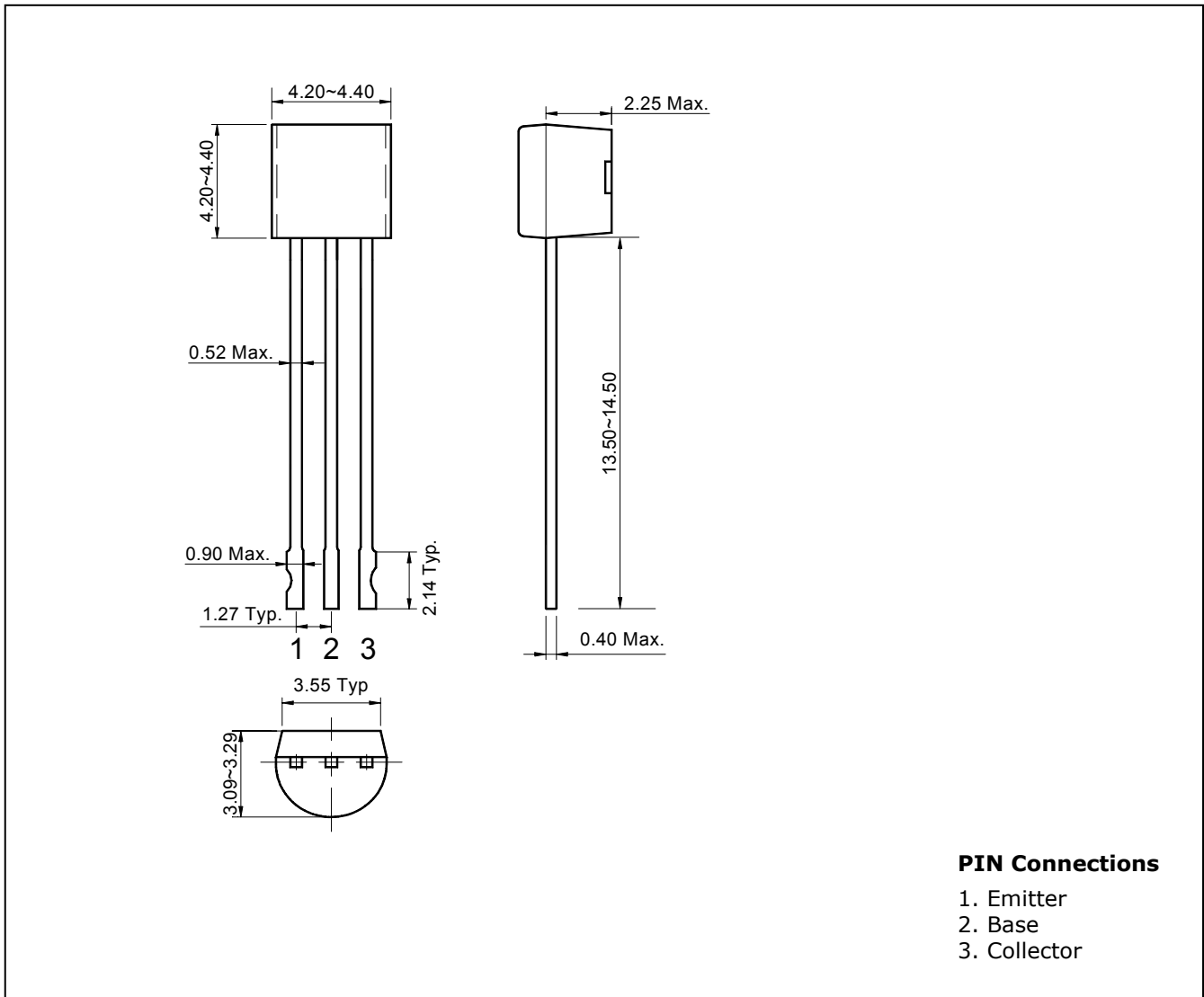
- Low collector-emitter saturation voltage : 0.4V (Max.) @  $I_C = -50\text{mA}$ ,  $I_B = -5\text{mA}$
- Low collector output capacitance : 4.5pF (Max.) @  $V_{CB} = -5\text{V}$ ,  $I_E = 0$ ,  $f = 1\text{MHz}$
- Complementary pair with 2N3904N

**Ordering Information**

Type NO.	Marking	Package Code
2N3906N	2N3906	T0-92N

**Outline Dimensions**

unit : mm



**PIN Connections**

1. Emitter
2. Base
3. Collector

## Absolute Maximum Ratings

(Ta=25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-40	V
Collector-emitter voltage	$V_{CEO}$	-40	V
Emitter-base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-200	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	$BV_{CEO}$	$I_C = -1\text{mA}, I_B = 0$	-40	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -40\text{V}, I_E = 0$	-	-	-50	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5\text{V}, I_C = 0$	-	-	-50	nA
DC current gain	$h_{FE}$	$V_{CE} = -1\text{V}, I_C = -10\text{mA}$	100	-	300	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$	-	-	-0.4	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = -1\text{V}, I_C = -10\text{mA}$	-	-0.73	-0.95	V
Transition frequency	$f_T$	$V_{CE} = -20\text{V}, I_C = -10\text{mA}$	-	350	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -5\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	4.5	pF
Turn on delay time	$t_d$	$V_{CC} = -3\text{V}, V_{BE(off)} = -0.5\text{V}, I_C = -10\text{mA}, I_{B1} = -1\text{mA}$	-	-	35	ns
Rise time	$t_r$		-	-	35	ns
Storage time	$t_{stg}$		-	-	225	ns
Fall Time	$t_f$	$I_{B1} = I_{B2} = -1\text{mA}$	-	-	75	ns

Electrical Characteristic Curves

Fig. 1  $P_c - T_a$

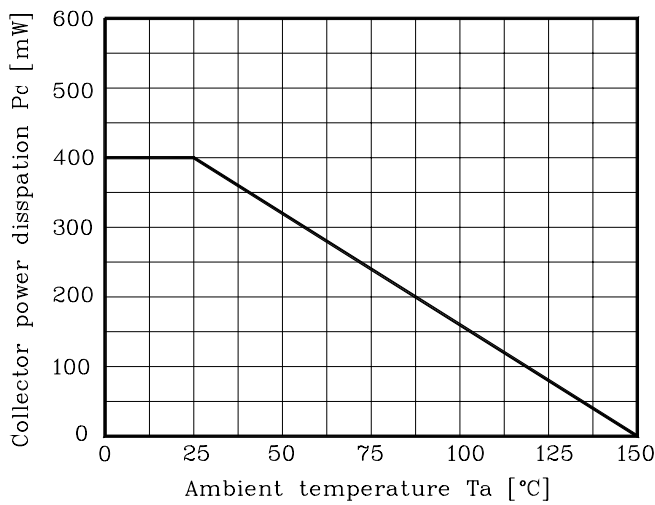


Fig. 2  $h_{FE} - I_C$

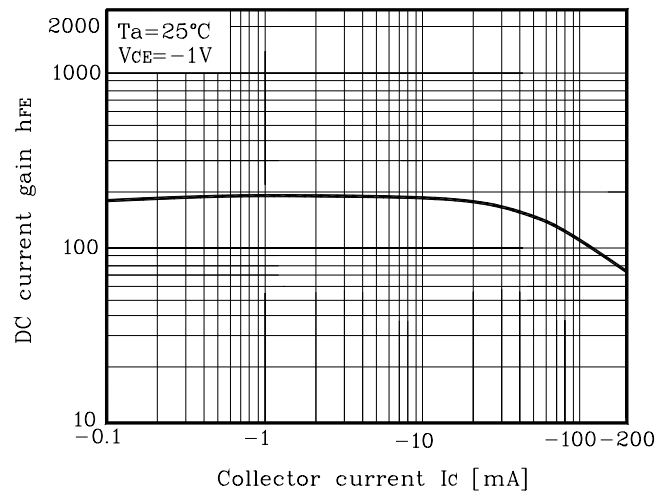
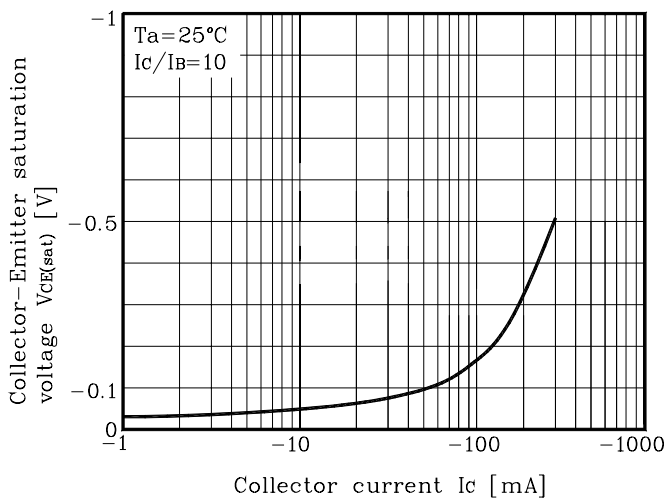


Fig. 3  $V_{CE(sat)} - I_C$



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