

## Description

- General small signal amplifier

## Features

- Low collector saturation voltage :  $V_{CE(sat)}=0.15V(\text{Max.})$
- Extremely small size package:  $0.8 \times 0.6 \times 0.4 \text{ mm Typ.}$
- Complementary pair with NT332

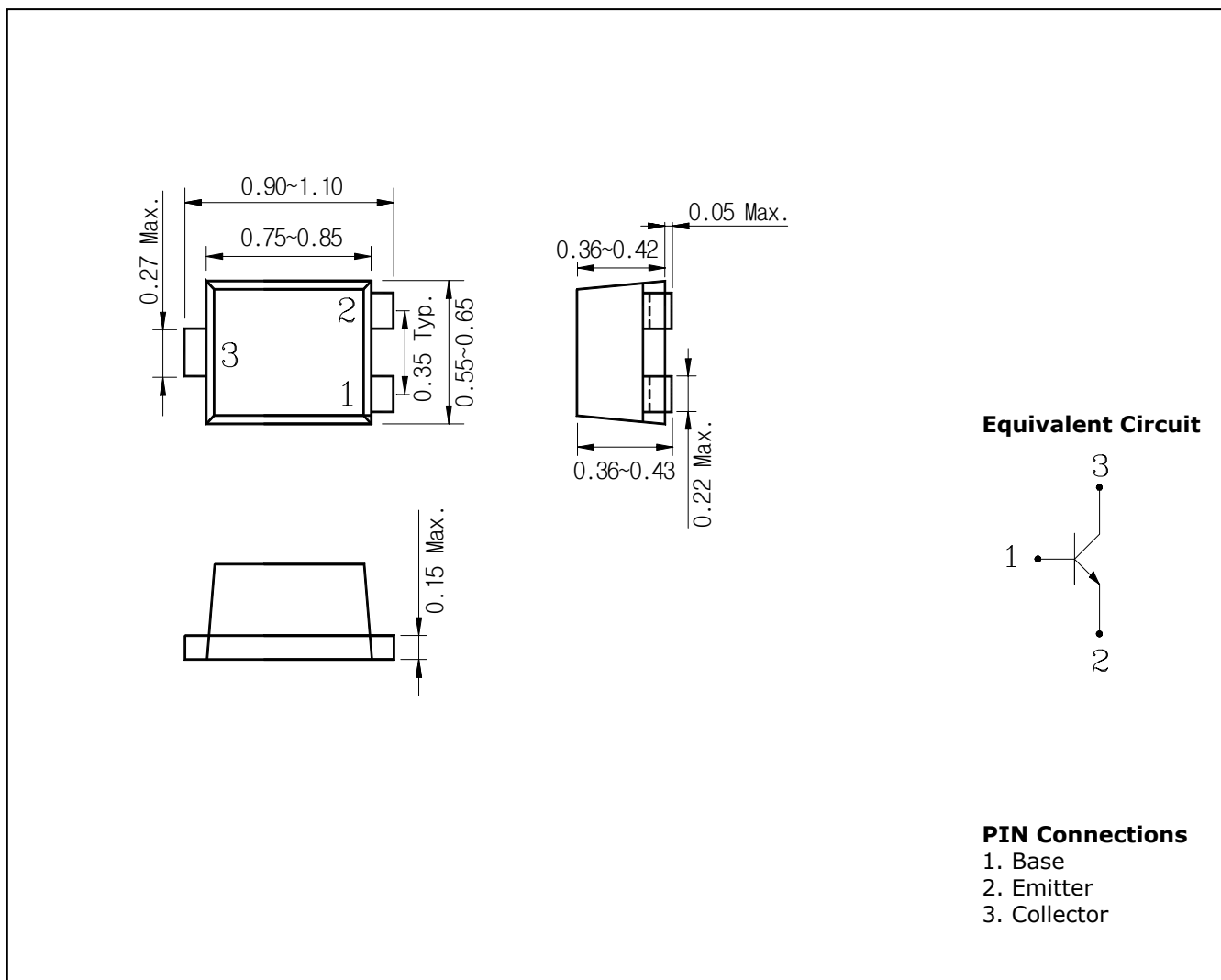
## Ordering Information

Type NO.	Marking	Package Code
NT331	N□	SOT-923

□:  $h_{FE}$  rank

## Outline Dimensions

unit : mm



## Absolute Maximum Ratings

Ta=25°C

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	30	V
Collector-emitter voltage	$V_{CEO}$	20	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	50	mA
Collector power dissipation	$P_C$	50	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	$BV_{CEO}$	$I_C=1mA, I_B=0$	20	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB}=30V, I_E=0$	-	-	0.1	μA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5V, I_C=0$	-	-	0.1	μA
DC current gain	$h_{FE}^*$	$V_{CE}=6V, I_C=2mA$	120	-	400	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50mA, I_B=5mA$	-	-	0.15	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=6V, I_C=2mA$	-	0.7	0.9	V
Transition frequency	$f_T$	$V_{CE}=10V, I_C=10mA$	-	200	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$	-	2	-	pF

\* :  $h_{FE}$  rank / Y : 120 ~ 240, G : 200 ~ 400

## Electrical Characteristic Curves

Fig. 1  $P_C - T_a$

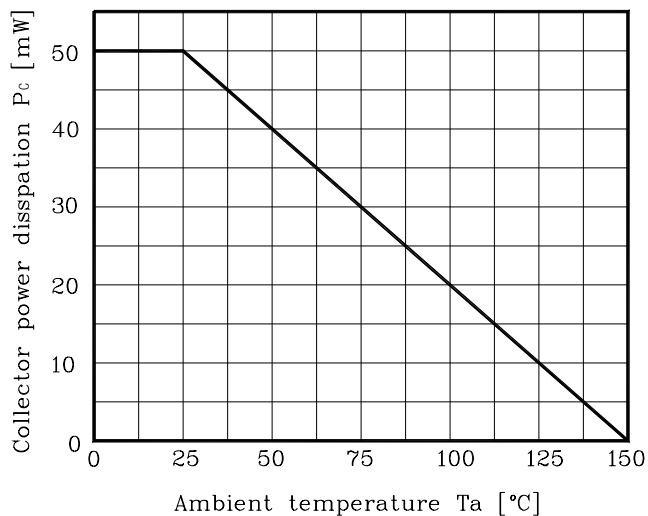


Fig. 2  $I_C - V_{BE}$

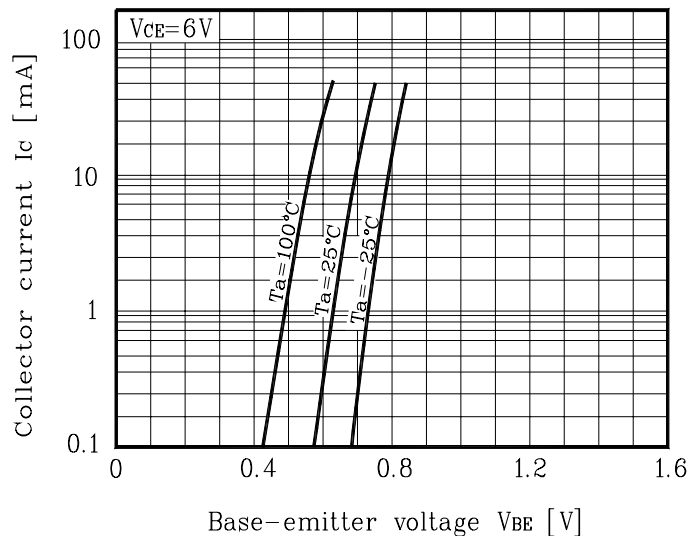


Fig. 3  $I_C - V_{CE}$

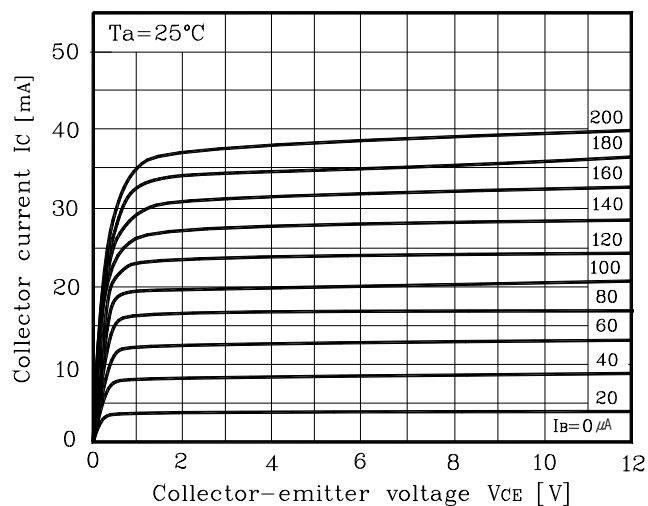


Fig. 4  $h_{FE} - I_C$

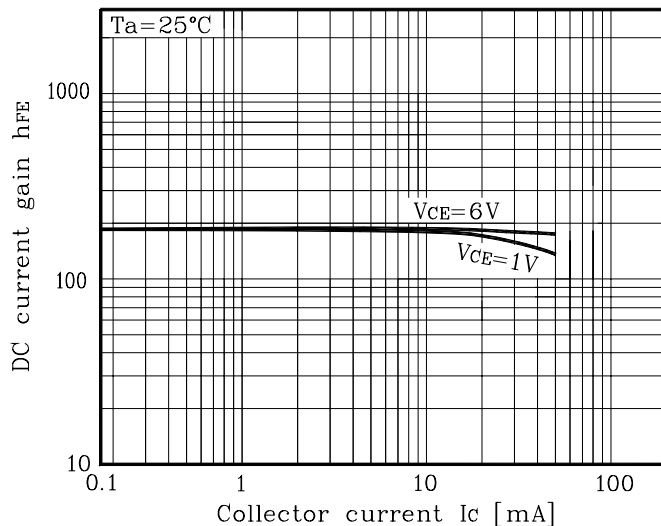


Fig. 5  $V_{CE(sat)} - I_C$

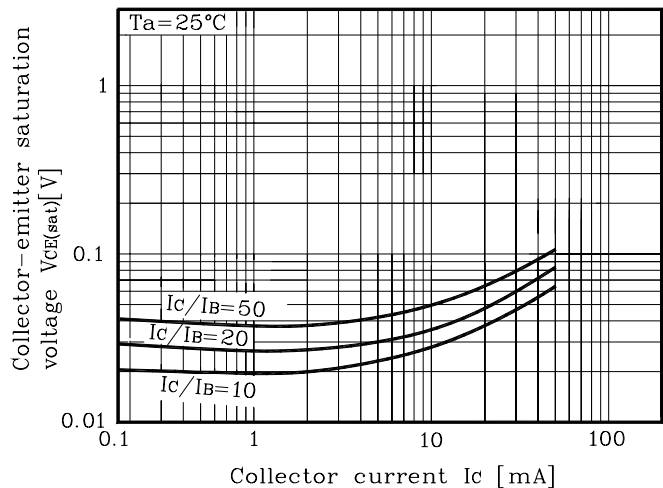
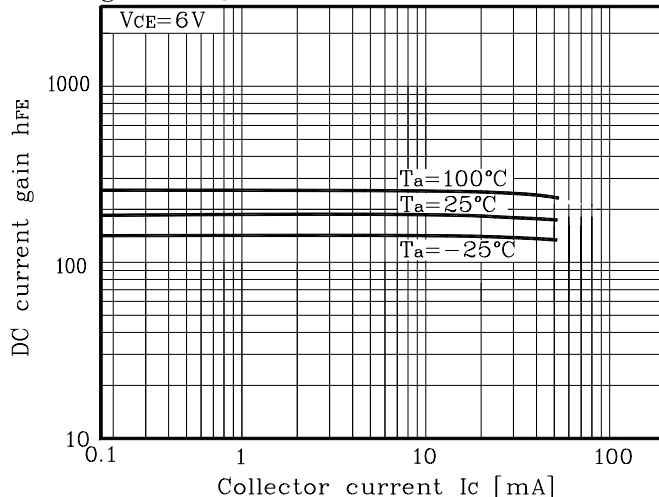


Fig. 6  $h_{FE} - I_C$



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