

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

# HN1A01F

Audio Frequency General Purpose Amplifier Applications

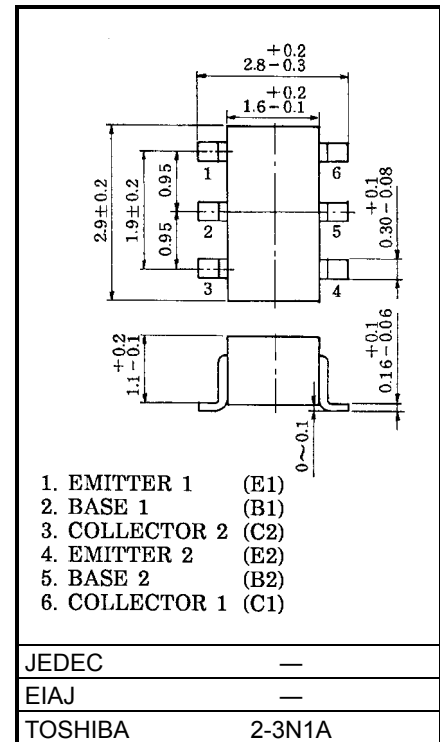
Unit: mm

- Small package (dual type)
- High voltage and high current  
:  $V_{CEO} = -50V$ ,  $I_C = -150mA$  (max)
- High  $h_{FE}$ :  $h_{FE} = 120\sim400$
- Excellent  $h_{FE}$  linearity  
:  $h_{FE} (I_C = -0.1mA) / h_{FE} (I_C = -2mA) = 0.95$  (typ.)

### Maximum Ratings (Ta = 25°C) (Q1, Q2 Common)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-50	V
Collector-emitter voltage	$V_{CEO}$	-50	V
Emitter-base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-150	mA
Base current	$I_B$	-30	mA
Collector power dissipation	$P_C^*$	300	mW
Junction temperature	$T_j$	125	°C
Storage temperature range	$T_{stg}$	-55~125	°C

\* Total rating



Weight: 0.015g

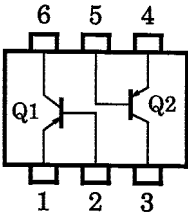
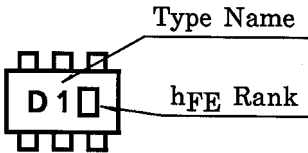
### Electrical Characteristics (Ta = 25°C) (Q1,Q2 Common)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	—	$V_{CB} = -50V, I_E = 0$	—	—	-0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	—	$V_{EB} = -5V, I_C = 0$	—	—	-0.1	$\mu A$
DC current gain	$h_{FE}$ (note)	—	$V_{CE} = -6V, I_C = -2mA$	120	—	400	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	$I_C = -100mA, I_B = -10mA$	—	-0.1	-0.3	V
Transition frequency	$f_T$	—	$V_{CE} = -10V, I_C = -1mA$	80	—	—	MHz
Collector output capacitance	$C_{ob}$	—	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	4	7	pF

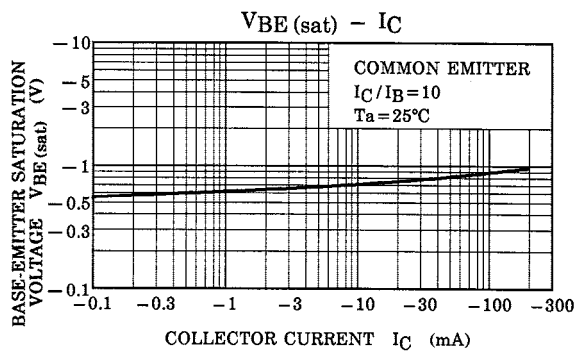
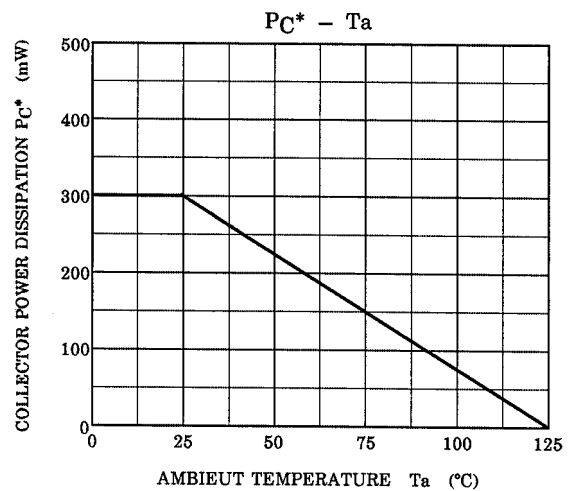
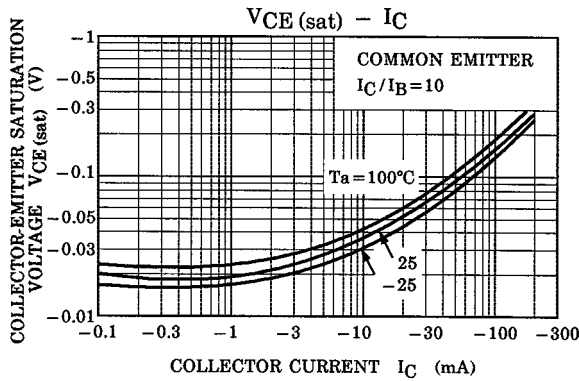
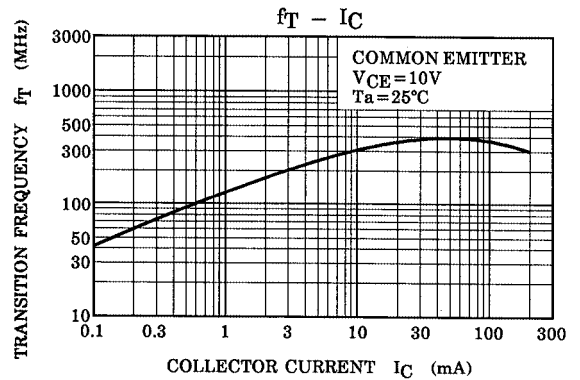
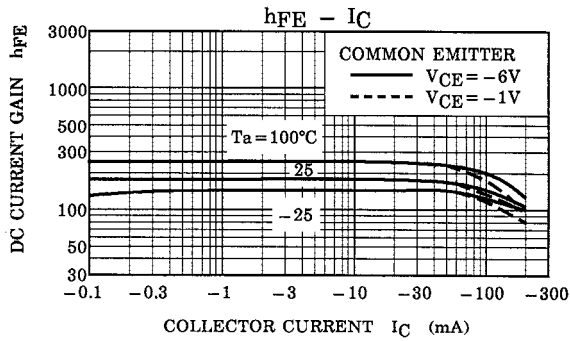
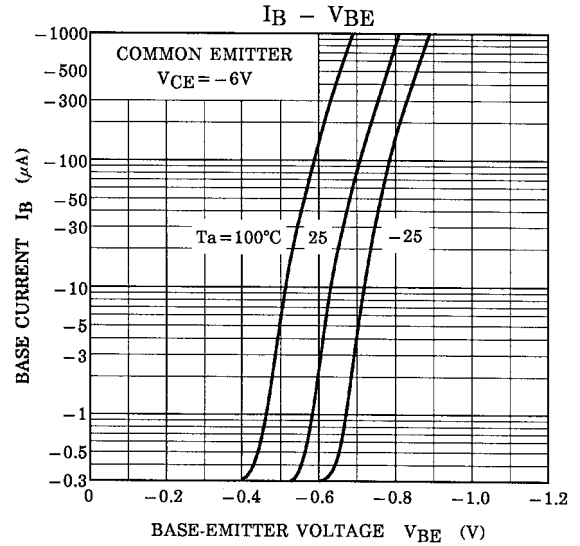
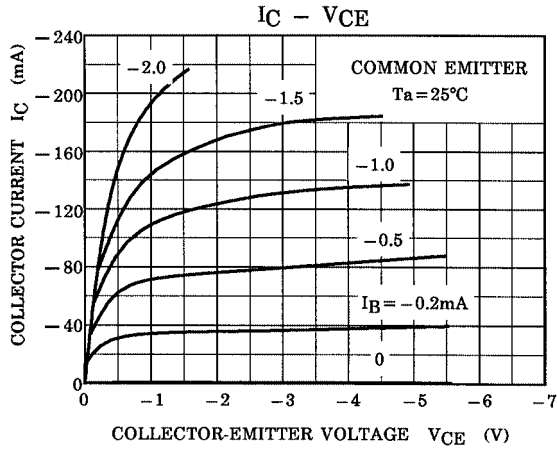
Note:  $h_{FE}$  Classification  
Y (Y): 120~240, GR (G): 200~400  
( ) Marking Symbol

**Marking**

**Equivalent Circuit (Top View)**



(Q1,Q2 Common)



\* : Total Rating

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