

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

# HN1C01F

## Audio Frequency General Purpose Amplifier Applications

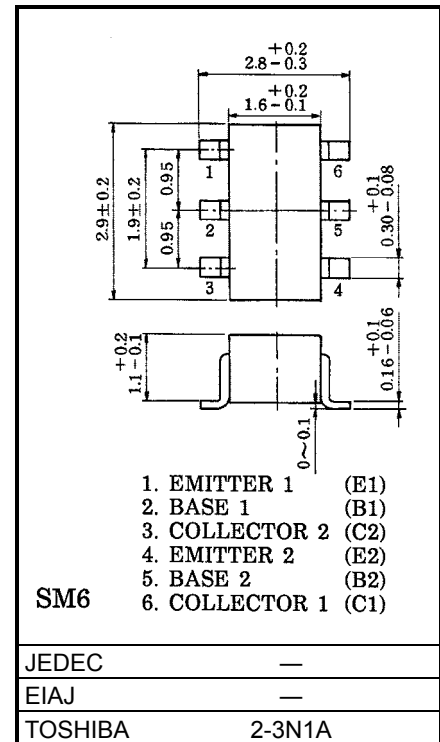
Unit: mm

- Small package (Dual type)
- High voltage and high current  
:  $V_{CE0} = 50V$ ,  $I_C = 150mA$  (max)
- High  $h_{FE}$ :  $h_{FE} = 120\sim 400$
- Excellent  $h_{FE}$  linearity  
:  $h_{FE} (I_C = 0.1mA) / h_{FE} (I_C = 2mA) = 0.95$  (typ.)

### Maximum Ratings ( $T_a = 25^\circ C$ ) (Q1, Q2 Common)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	60	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	$^\circ C$
Storage temperature range	$T_{stg}$	-55~125	$^\circ C$

\* Total rating



Weight: 0.015g

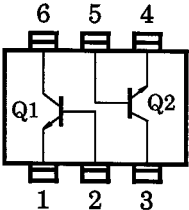
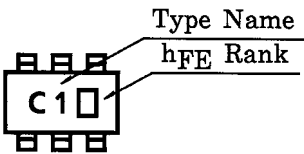
### Electrical Characteristics ( $T_a = 25^\circ C$ ) (Q1,Q2 Common)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	—	$V_{CB} = 60V, I_E = 0$	—	—	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	0.25	V
Transition frequency	$f_T$	—	$V_{CE} = 10V, I_C = 1mA$	80	—	—	MHz
Collector output capacitance	$C_{ob}$	—	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	2	3.5	pF

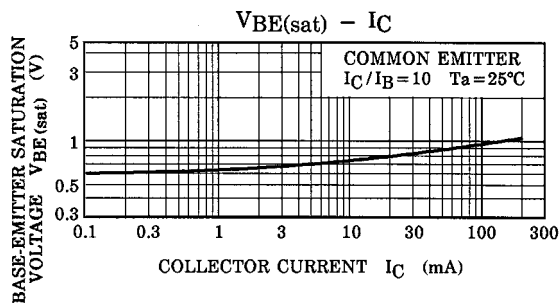
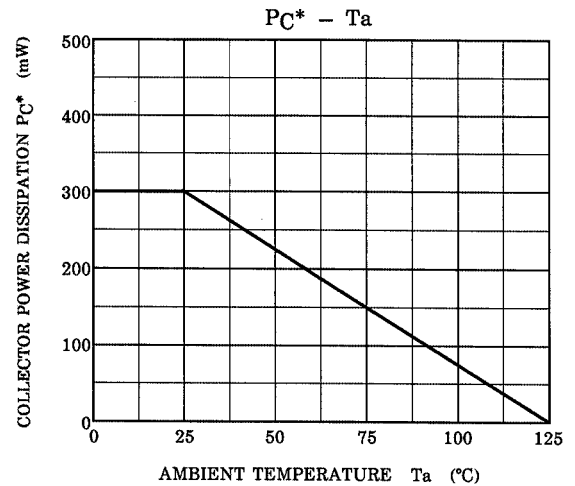
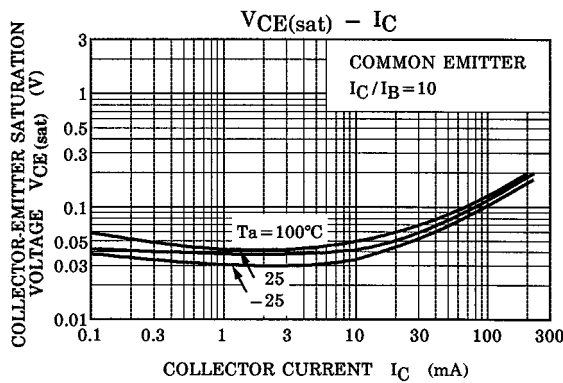
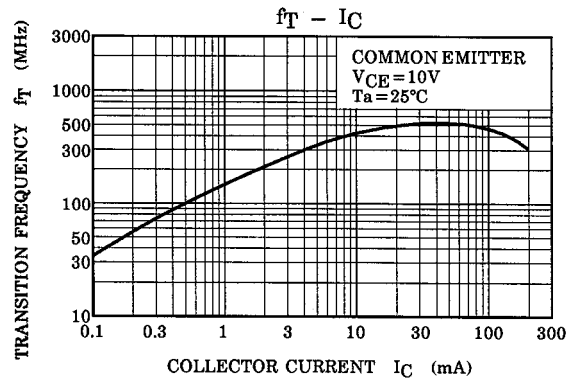
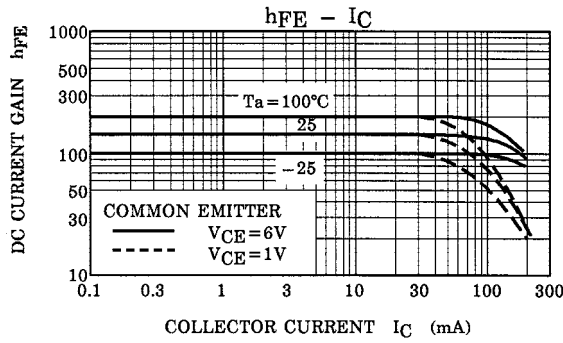
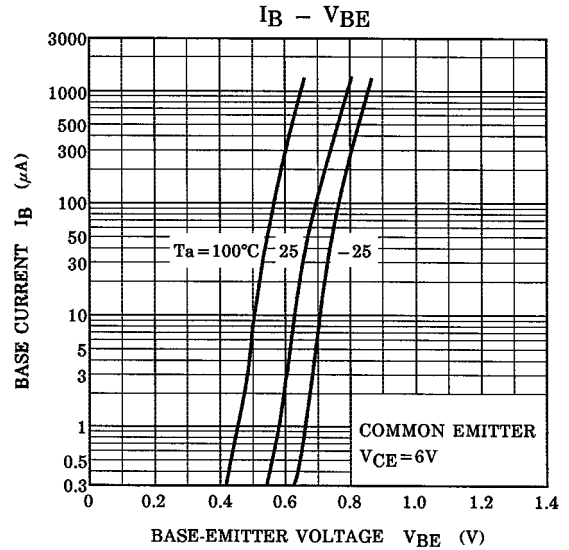
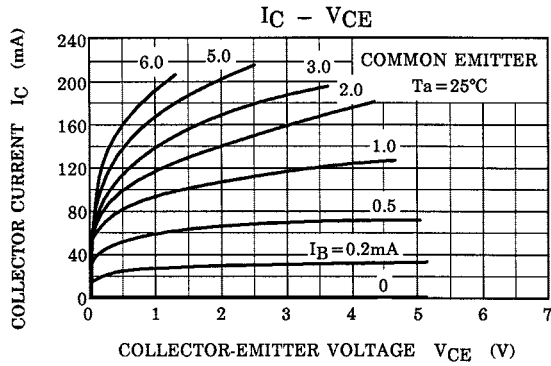
Note:  $h_{FE}$  Classification  
 Y (Y): 120~240, GR (G): 200~400  
 ( ) Marking Symbol

**Marking**

**Equivalent Circuit (Top View)**



(Q1,Q2 Common)



\* : Total Rating

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