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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

# HN2C01FE

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  $h_{FE}$  :  $h_{FE} = 120$  to  $400$
- Excellent  $h_{FE}$  linearity :  $h_{FE}(I_C = 0.1mA) / (I_C = 2mA) = 0.95$  (typ.)

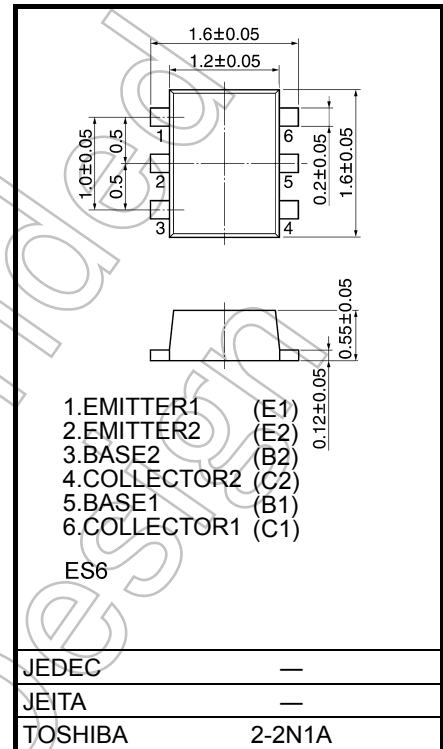
**Absolute Maximum Ratings ( $T_a = 25^\circ C$ ) (Q1, Q2 Common)**

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	$P_C^*$	100	mW
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature range	$T_{stg}$	-55 to 150	$^\circ C$

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

\* Total rating



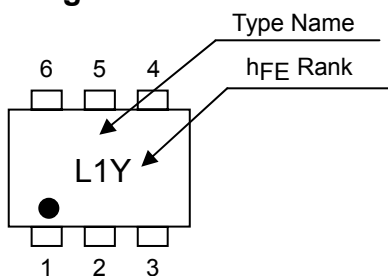
Weight: 3mg

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

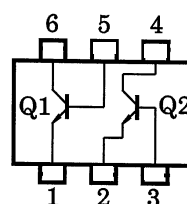
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	—	$V_{CB} = 60V$ , $I_E = 0$	—	—	0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	—	$V_{EB} = 5V$ , $I_C = 0$	—	—	0.1	$\mu A$
DC current gain	$h_{FE}$ (Note)	—	$V_{CE} = 6V$ , $I_C = 2mA$	120	—	400	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	$I_C = 100mA$ , $I_B = 10mA$	—	0.1	0.25	V
Transition frequency	$f_T$	—	$V_{CE} = 10V$ , $I_C = 1mA$	60	—	—	MHz
Collector output capacitance	$C_{ob}$	—	$V_{CB} = 10V$ , $I_E = 0$ , $f = 1MHz$	—	2	—	pF

Note:  $h_{FE}$  classification Y(Y): 120 to 240, GR(G): 200 to 400 ( ) marking symbol

**Marking**

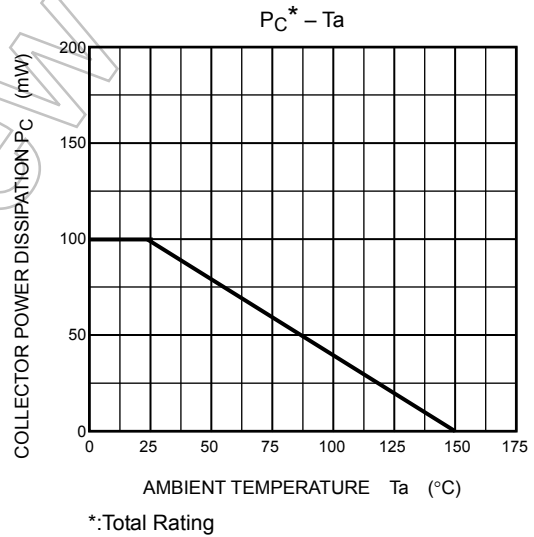
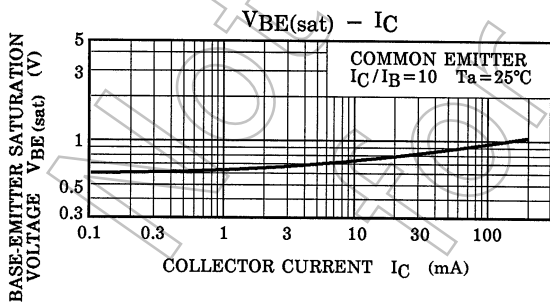
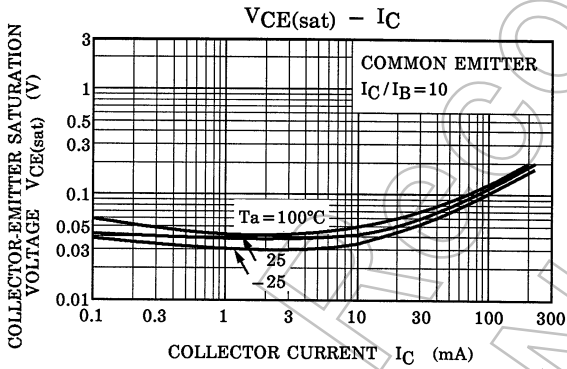
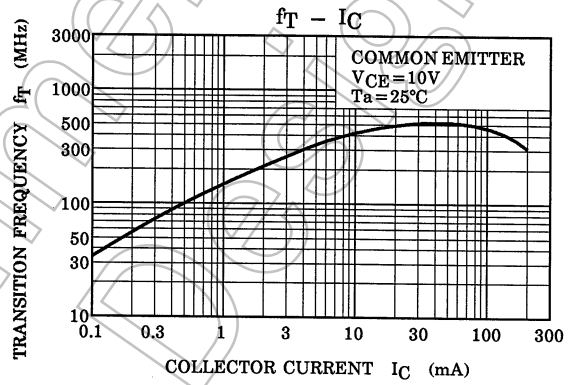
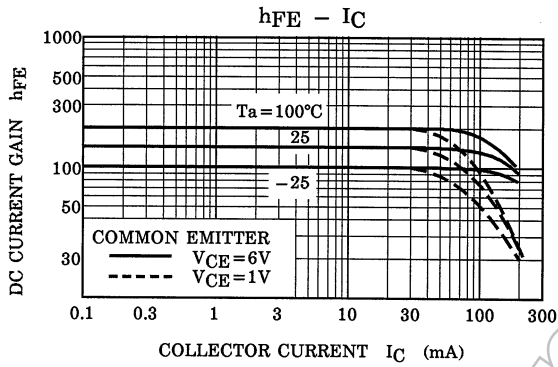
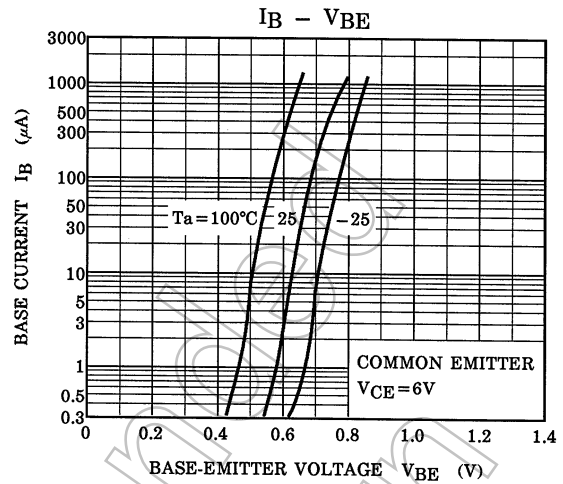
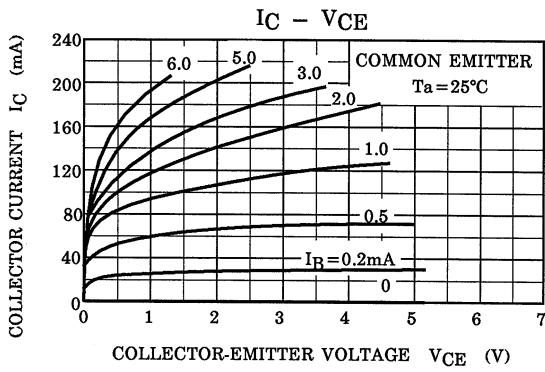


**Equivalent Circuit (Top View)**



Start of commercial production  
2000-06

(Q1, Q2 Common)



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