



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

HN1C01F

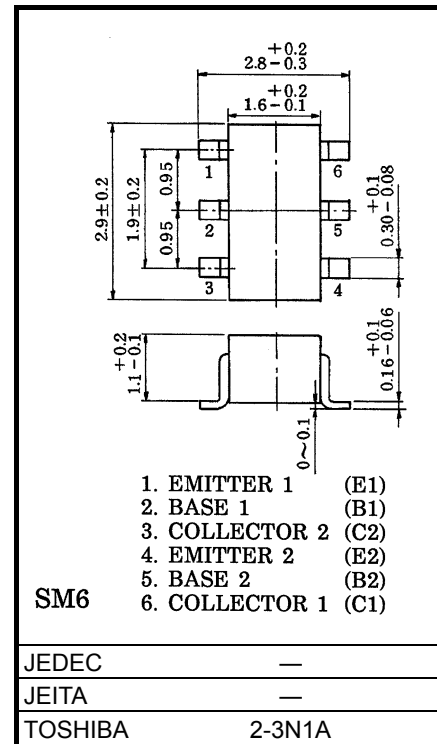
Audio-Frequency General-Purpose Amplifier Applications

Unit: mm

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

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$) (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	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 125	$^\circ\text{C}$



Weight: 0.015 g (typ.)

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

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

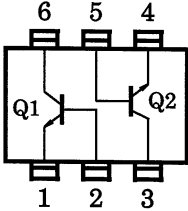
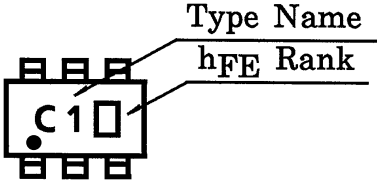
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	—	$V_{CB} = 60\text{ V}$, $I_E = 0$	—	—	0.1	μA
Emitter cut-off current	I_{EBO}	—	$V_{EB} = 5\text{ V}$, $I_C = 0$	—	—	0.1	μA
DC current gain	h_{FE} (Note)	—	$V_{CE} = 6\text{ V}$, $I_C = 2\text{ mA}$	120	—	400	
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	$I_C = 100\text{ mA}$, $I_B = 10\text{ mA}$	—	0.1	0.25	V
Transition frequency	f_T	—	$V_{CE} = 10\text{ V}$, $I_C = 1\text{ mA}$	80	—	—	MHz
Collector output capacitance	C_{ob}	—	$V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$	—	2	3.5	pF

Note: h_{FE} Classification
Y (Y): 120 to 240, GR (G): 200 to 400
() Marking symbol

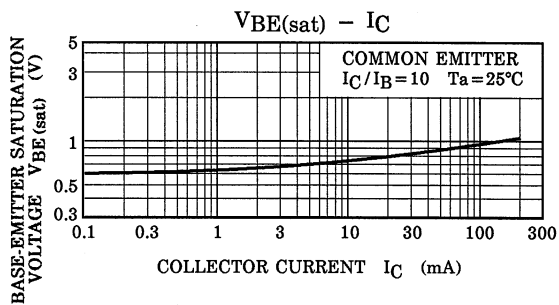
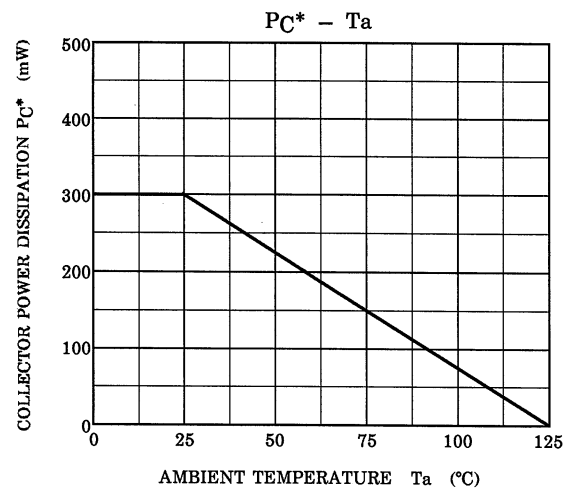
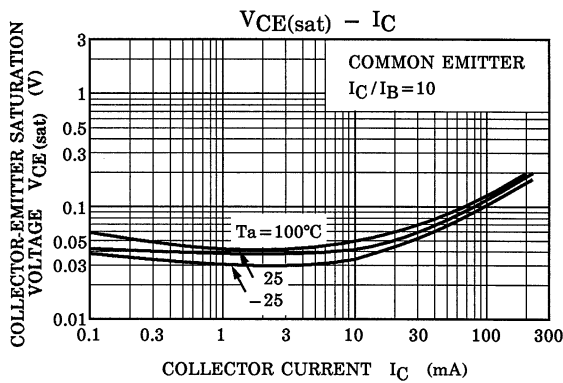
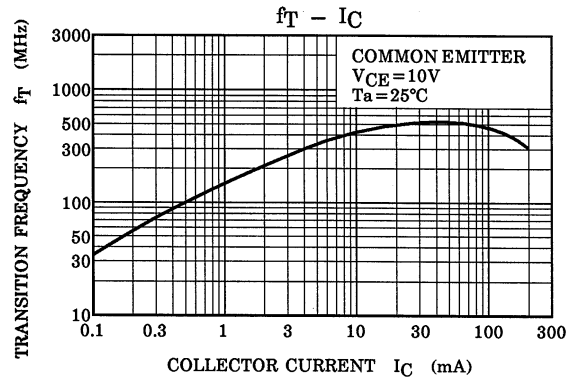
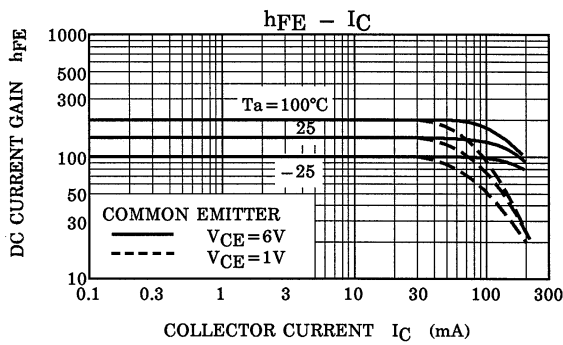
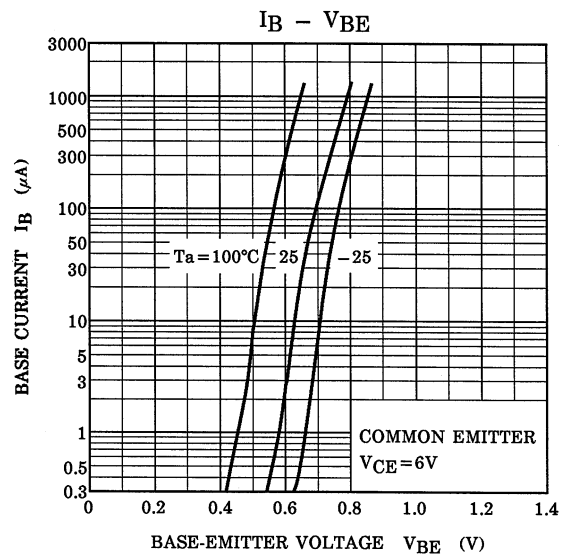
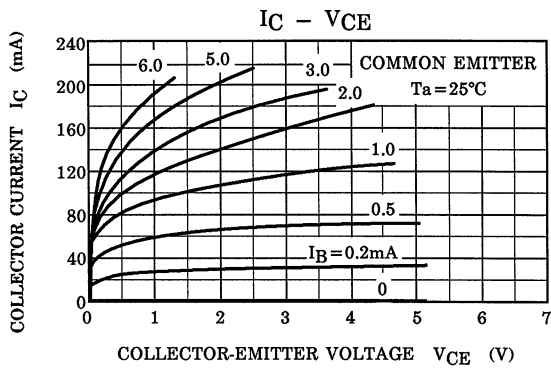
Start of commercial production
1988-01

Marking

Equivalent Circuit (Top View)



(Q1, Q2 Common)



* : Total Rating

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