

TOSHIBA MULTI CHIP DISCRETE DEVICE

HN4C05JU

AUDIO FREQUENCY GENERAL PURPOSE AMPLIFIER APPLICATIONS  
FOR MUTING AND SWITCHING APPLICATIONS

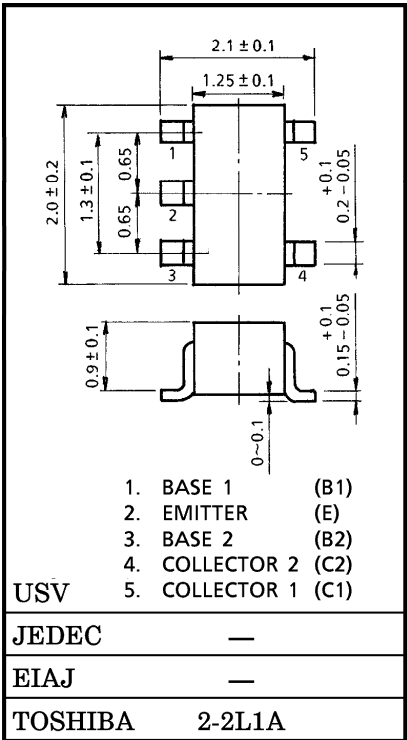
Unit in mm

- Low Saturation Voltage :  $V_{CE(sat)}(1) = 15\text{ mV (Typ.)}$   
@  $I_C = 10\text{ mA} / I_B = 0.5\text{ mA}$
- High Current :  $I_C = 400\text{ mA (Max.)}$

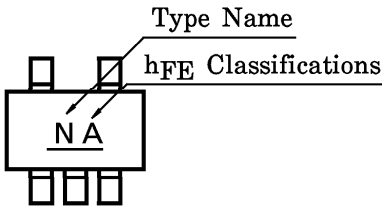
MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ ) (Q1, Q2 COMMON)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	15	V
Collector-Emitter Voltage	$V_{CEO}$	12	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	400	mA
Base Current	$I_B$	50	mA
Collector Power Dissipation	$P_C$ (*)	200	mW
Junction Temperature	$T_j$	125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-55\sim 125$	$^\circ\text{C}$

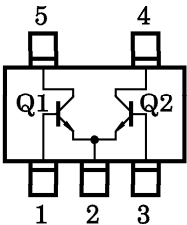
(\*) Total Rating



MARKING



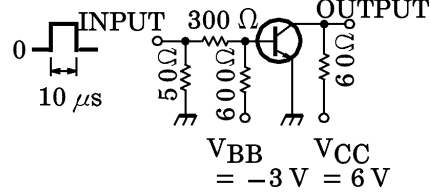
PIN ASSIGNMENT (TOP VIEW)



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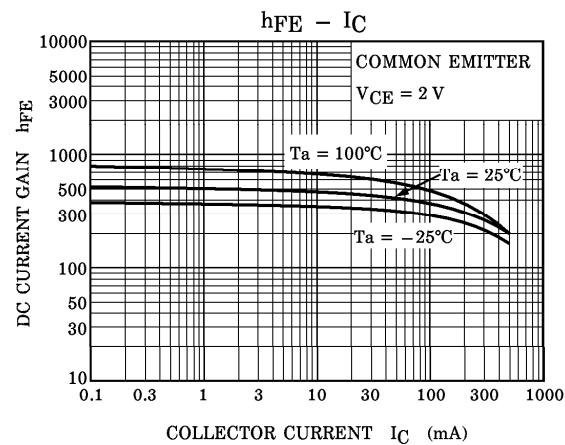
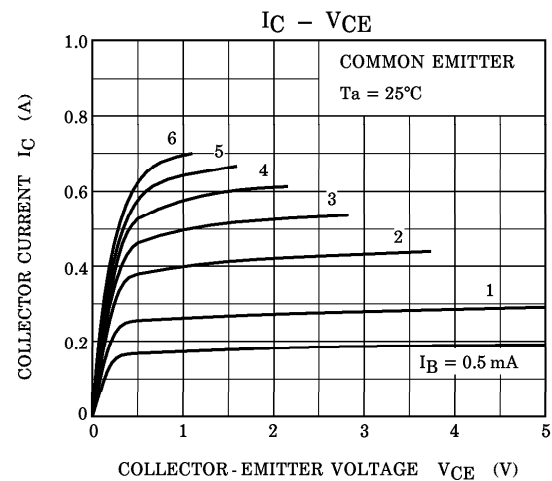
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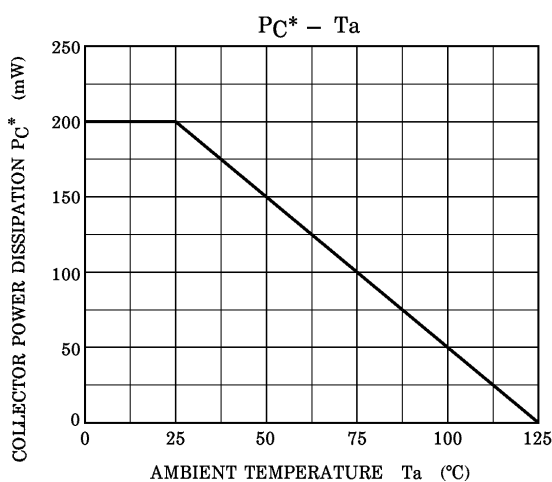
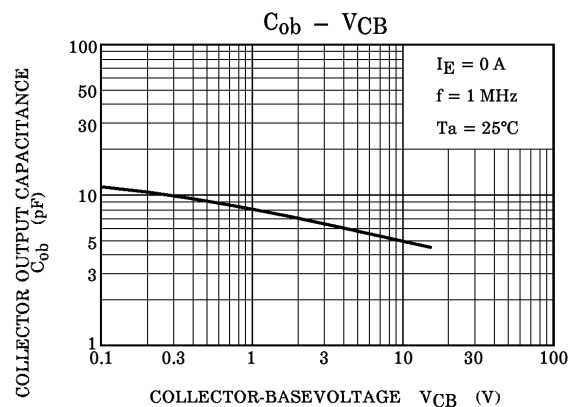
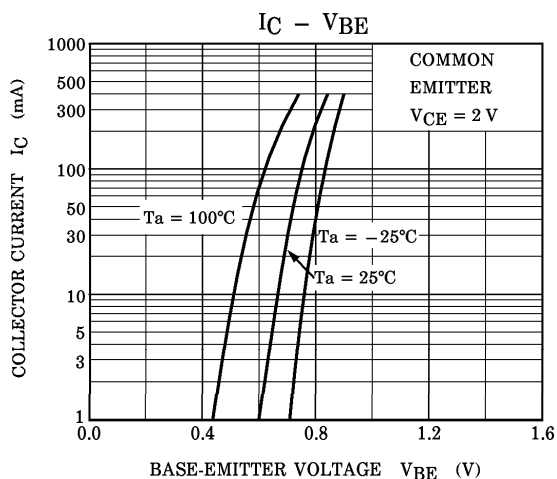
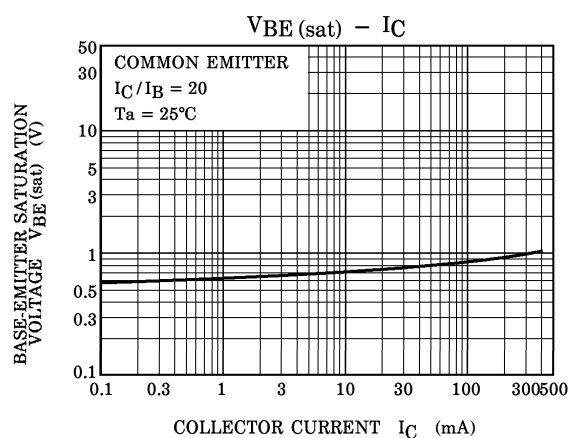
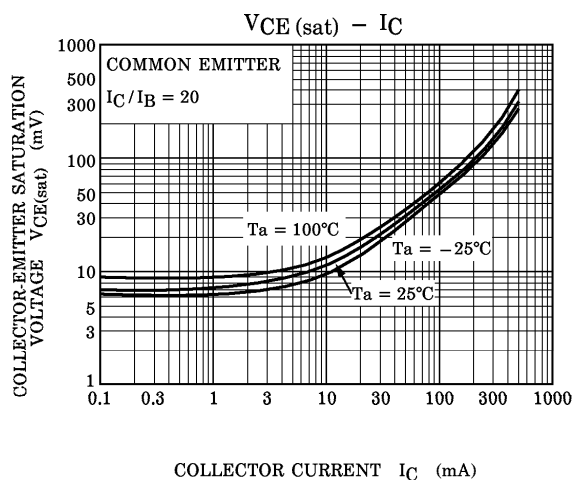
ELECTRICAL CHARACTERISTICS (Ta = 25°C) (Q1, Q2 COMMON)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V <sub>CB</sub> = 15 V, I <sub>E</sub> = 0	—	—	0.1	μA
Emitter Cut-off Current		IEBO	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0	—	—	0.1	μA
DC Current Gain		h <sub>FE</sub> (Note)	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 10 mA	300	—	1000	
Collector-Emitter Sturation Voltage	V <sub>CE</sub> (sat) (1)		I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0.5 mA	—	15	30	mV
	V <sub>CE</sub> (sat) (2)		I <sub>C</sub> = 200 mA, I <sub>B</sub> = 10 mA	—	110	250	
Base-Emitter Voltage		V <sub>BE</sub> (sat)	I <sub>C</sub> = 200 mA, I <sub>B</sub> = 10 mA	—	0.87	1.2	V
Transition Frequency		f <sub>T</sub>	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 10 mA	80	130	—	MHz
Collector Output Capacitance		C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	—	4.2	—	pF
Collector-Emitter On Resistance		R <sub>on</sub>	I <sub>B</sub> = 1 mA, V <sub>in</sub> = 1 V <sub>rms</sub> , f = 1 kHz	—	0.9	—	Ω
Switching Time	Turn-on Time	t <sub>on</sub>	 DUTY CYCLE ≤ 2% I <sub>B1</sub> = -I <sub>B2</sub> = 5 mA	—	85	—	ns
	Storage Time	t <sub>stg</sub>		—	170	—	
	Fall Time	t <sub>f</sub>		—	40	—	

(Note) h<sub>FE</sub> Classification    A : 300~600,    B : 500~1000

(Q1, Q2 COMMON)





\*: Total Rating