

TOSHIBA MULTI CHIP DISCRETE DEVICE

HN4C05JU

AUDIO FREQUENCY GENERAL PURPOSE AMPLIFIER APPLICATIONS
FOR MUTING AND SWITCHING APPLICATIONS

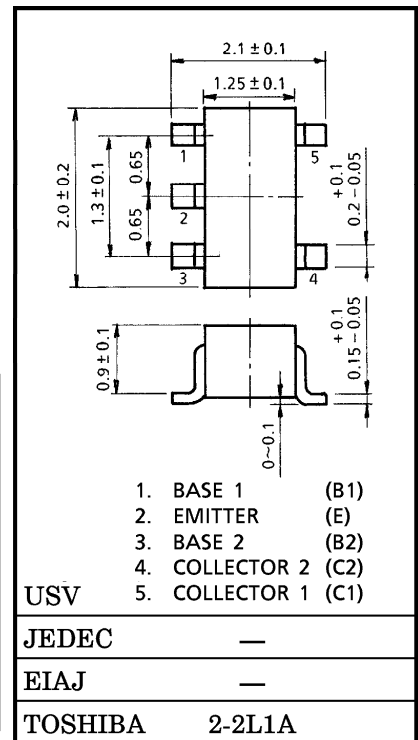
Unit in mm

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

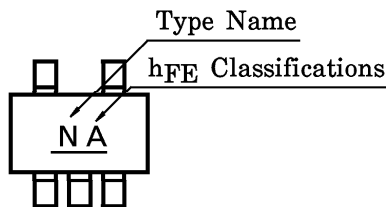
MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$) (Q1, Q2 COMMON)

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}	-55~125	$^\circ\text{C}$

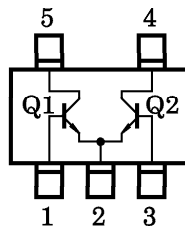
(*) Total Rating



MARKING



PIN ASSIGNMENT (TOP VIEW)



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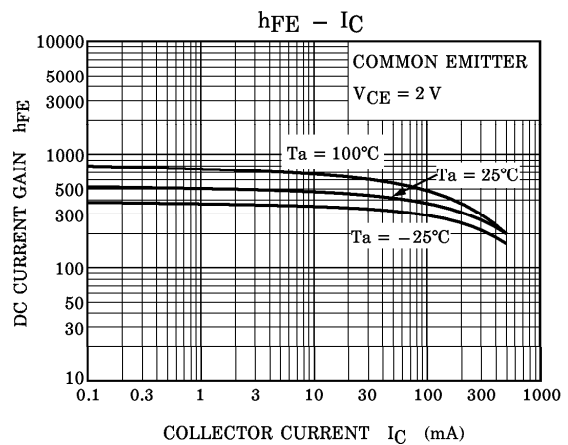
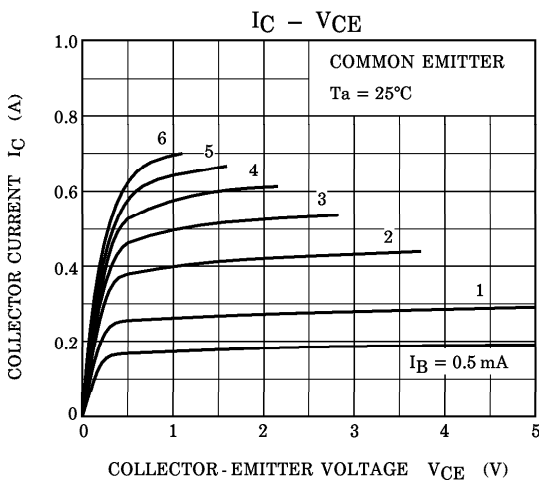
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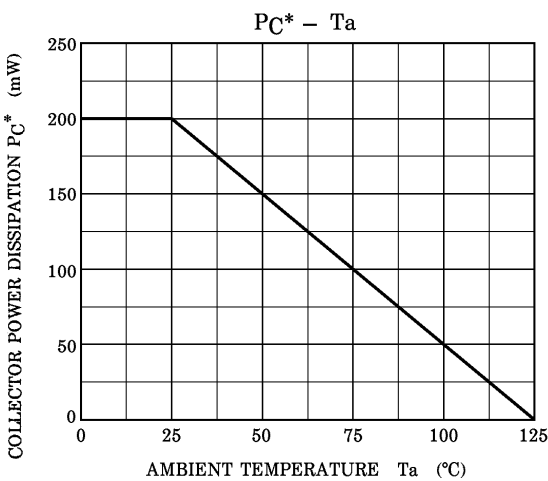
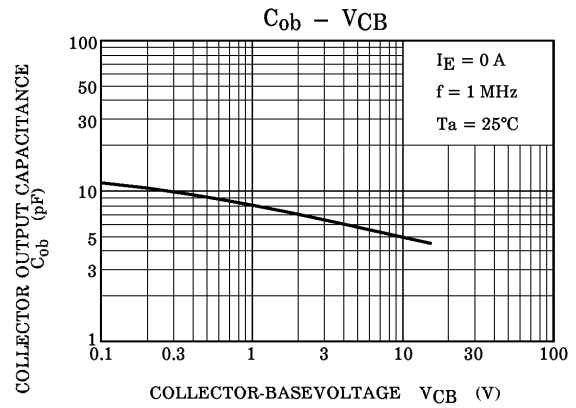
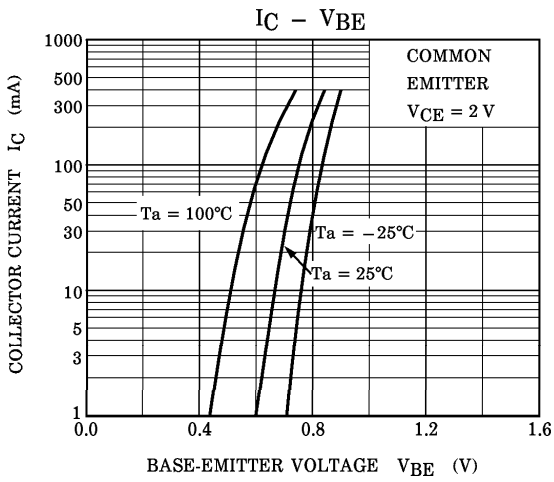
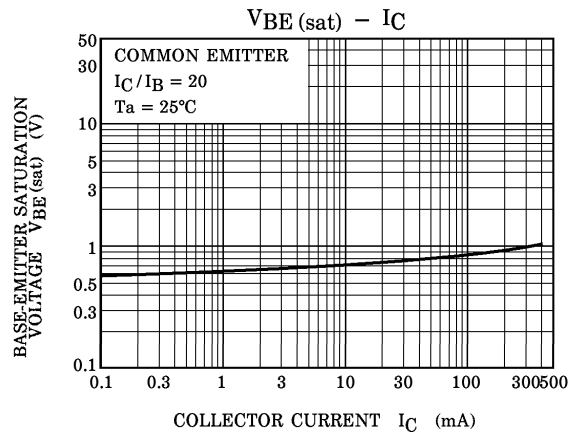
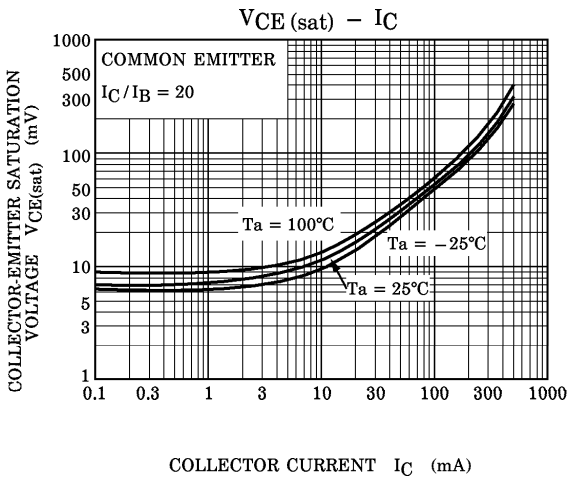
ELECTRICAL CHARACTERISTICS (Ta = 25°C) (Q1, Q2 COMMON)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	I_{CBO}	$V_{CB} = 15\text{ V}, I_E = 0$	—	—	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)	$V_{CE} = 2\text{ V}, I_C = 10\text{ mA}$	300	—	1000		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}(1)$	$I_C = 10\text{ mA}, I_B = 0.5\text{ mA}$	—	15	30	mV	
	$V_{CE(sat)}(2)$	$I_C = 200\text{ mA}, I_B = 10\text{ mA}$	—	110	250		
Base-Emitter Voltage	$V_{BE(sat)}$	$I_C = 200\text{ mA}, I_B = 10\text{ mA}$	—	0.87	1.2	V	
Transition Frequency	f_T	$V_{CE} = 2\text{ V}, I_C = 10\text{ mA}$	80	130	—	MHz	
Collector Output Capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	4.2	—	pF	
Collector-Emitter On Resistance	R_{on}	$I_B = 1\text{ mA}, V_{in} = 1\text{ V}_{rms}, f = 1\text{ kHz}$	—	0.9	—	Ω	
Switching Time	Turn-on Time	t_{on}	<p>DUTY CYCLE $\leq 2\%$ $I_{B1} = -I_{B2} = 5\text{ mA}$</p>	—	85	—	ns
	Storage Time	t_{stg}		—	170	—	
	Fall Time	t_f		—	40	—	

(Note) h_{FE} Classification A : 300~600, B : 500~1000

(Q1, Q2 COMMON)





*: Total Rating