

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

HN4A08J

Low Frequency Power Amplifier Applications
Power Switching Application

- High DC Current Gain : $h_{FE} = 100$ to 320
- Low Saturation Voltage : $V_{CE(sat)} = -0.4V$ (max)
($I_C = -500mA$, $I_B = -20mA$)

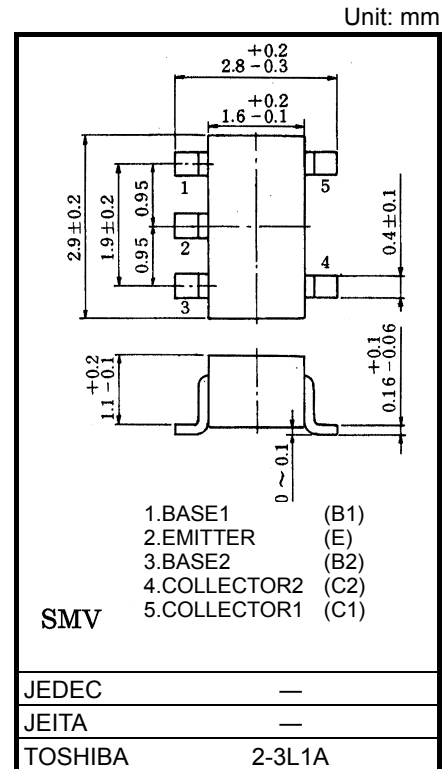
Absolute Maximum Ratings (Ta = 25°C) (Q1, Q2 Common)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-30	V
Collector-emitter voltage	V_{CEO}	-25	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-800	mA
Base current	I_B	-160	mA
Collector power dissipation	P_C^*	300	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55 to 150	°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. Power dissipation per element should not exceed 200mW.

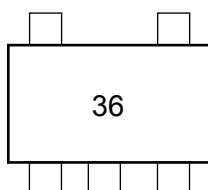


Weight: 0.014g (typ.)

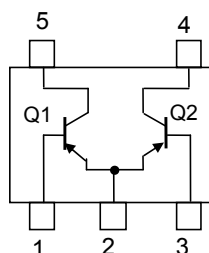
Electrical Characteristics (Ta = 25°C) (Q1,Q2 Common)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	—	$V_{CB} = -30V, I_E = 0$	—	—	-0.1	μA
Emitter cut-off current	I_{EBO}	—	$V_{EB} = -5V, I_C = 0$	—	—	-0.1	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	—	$I_C = -10mA, I_B = 0$	-25	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	—	$I_E = -0.1mA, I_C = 0$	-5	—	—	V
DC current gain	$h_{FE(1)}$	—	$V_{CE} = -1V, I_C = -100mA$	100	—	320	
	$h_{FE(2)}$	—	$V_{CE} = -1V, I_C = -800mA$	40	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	$I_C = -500mA, I_B = -20mA$	—	—	-0.4	V
Collector-emitter saturation voltage	V_{BE}	—	$V_{CE} = -1V, I_C = -10mA$	-0.5	—	-0.8	V
Transition frequency	f_T	—	$V_{CE} = -5V, I_C = -10mA$	—	120	—	MHz
Collector output capacitance	C_{ob}	—	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	13	—	pF

Marking

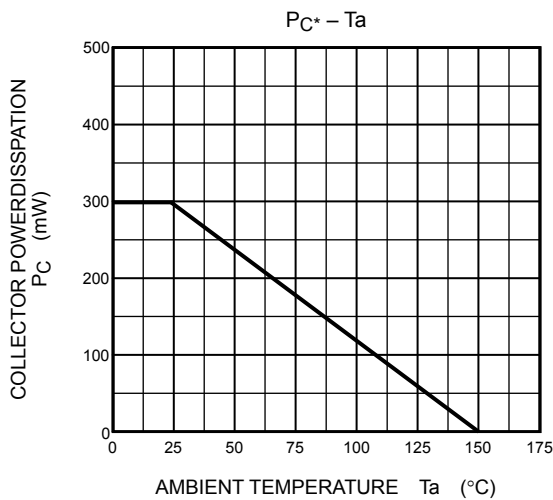
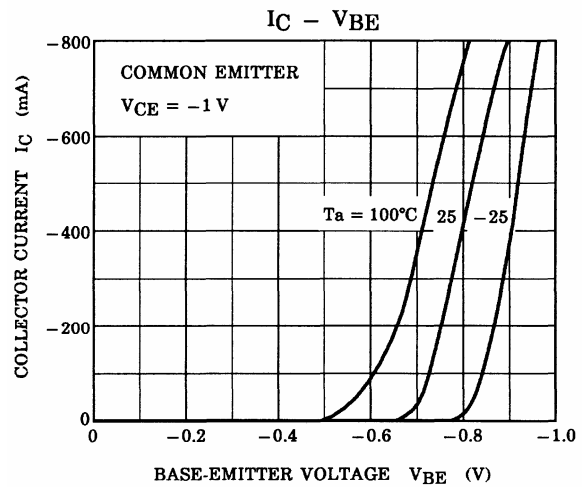
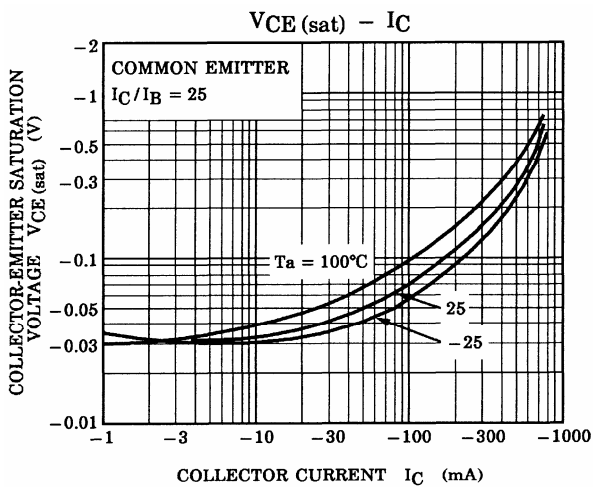
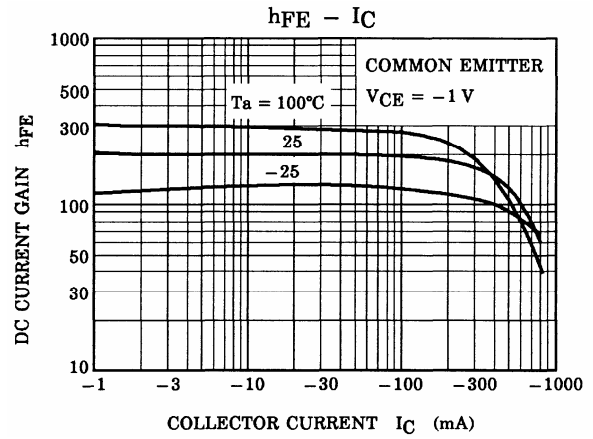
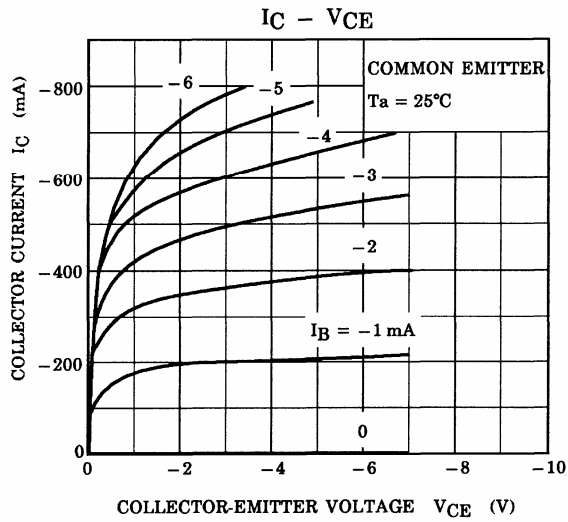


Equivalent Circuit (Top View)



Start of commercial production
2000-09

Q1,Q2 Common



*Total Rating.

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