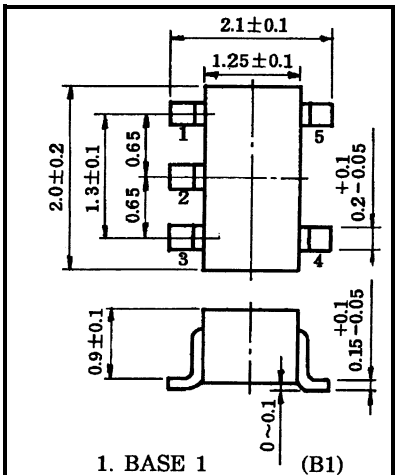
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

2SA1873

Audio Frequency General Purpose Amplifier Applications

- Small package (dual type)
- High voltage and high current: V_{CEO} = −50 V, I_C = −150 mA (max)
- High h_{FE}: h_{FE} = 120 to 400
- Excellent h_{FE} linearity: h_{FE} (I_C = −0.1 mA)/h_{FE} (I_C = −2 mA) = 0.95 (typ.)
- Complementary to 2SC4944

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	2-2L1A

Weight: 6.2 mg (typ.)

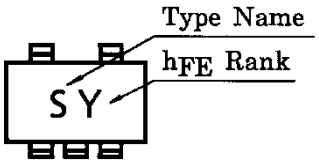
Absolute Maximum Ratings (Ta = 25°C) (Q1, Q2 common)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	−50	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 (Note 3)	200	mW
Junction temperature	T_j (Note 1)	150	°C
	T_j (Note 2)	125	
Storage temperature range	T_{stg} (Note 1)	−55 to 150	°C
	T_{stg} (Note 2)	−55 to 125	

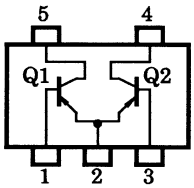
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

Note 1: For devices with the ordering part number ending in LF(T.
Note 2: For devices with the ordering part number in other than LF(T.
Note 3: Total rating, Mounted on FR4 board. (25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 0.32 mm^2 × 5)

Marking



Equivalent Circuit (top view)



Start of commercial production
1992-07

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

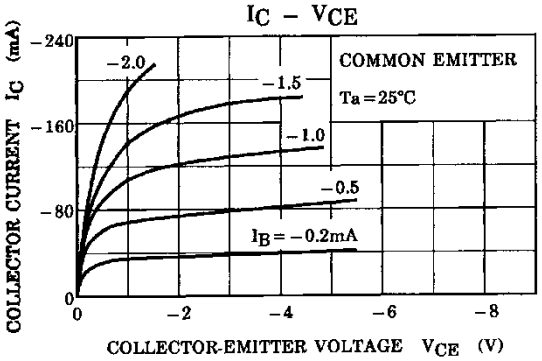
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = –50 V, I_E = 0 A	—	—	–0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = –5 V, I_C = 0 A	—	—	–0.1	μA
DC current gain	h_{FE} (Note 4)	V_{CE} = –6 V, I_C = –2 mA	120	—	400	—
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = –100 mA, I_B = –10 mA	—	–0.1	–0.3	V
Transition frequency	f_T	V_{CE} = –10 V, I_C = –1 mA	80	—	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = –10 V, I_E = 0 A, f = 1 MHz	—	4	7	pF

Note 4: h_{FE} classification Y (Y): 120 to 240, GR (G): 200 to 400

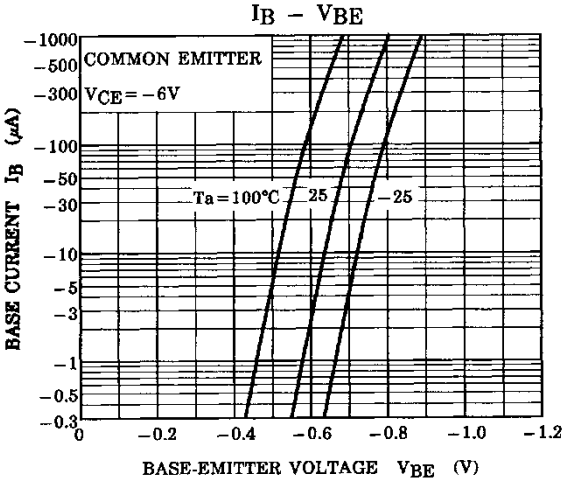
( ) marking symbol

Characteristics Curves (Q1, Q2 common)

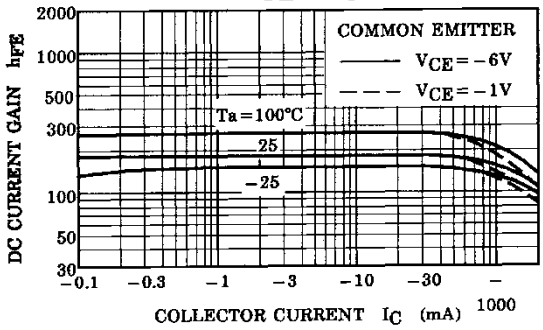
I_C – V_{CE}



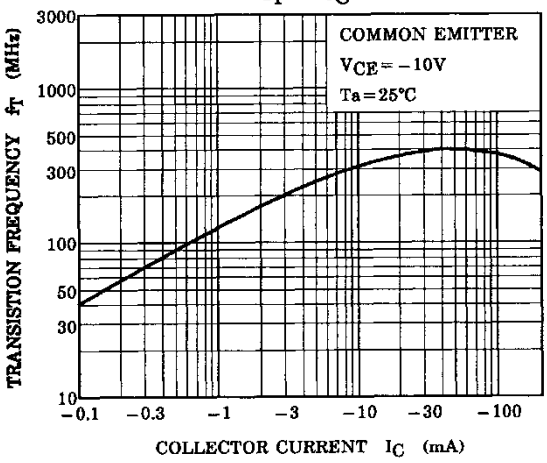
I_B – V_{BE}



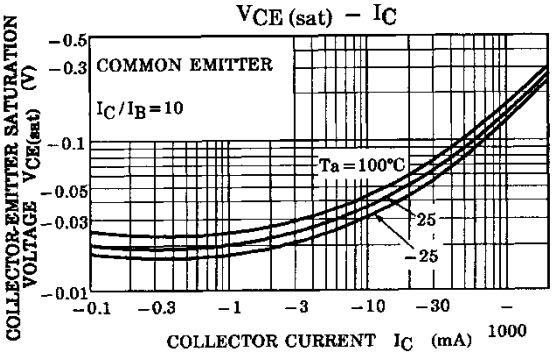
h_{FE} – I_C



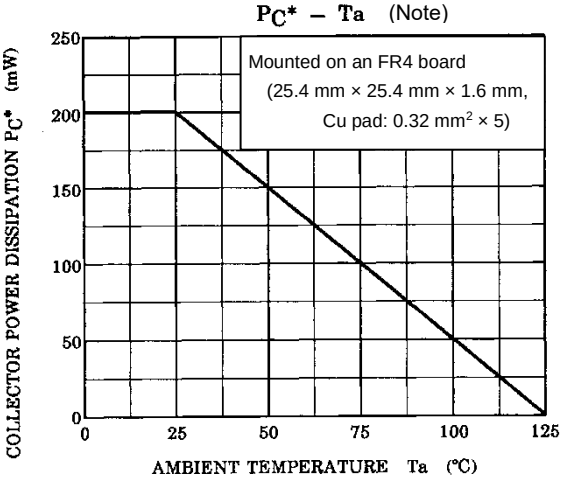
f_T – I_C



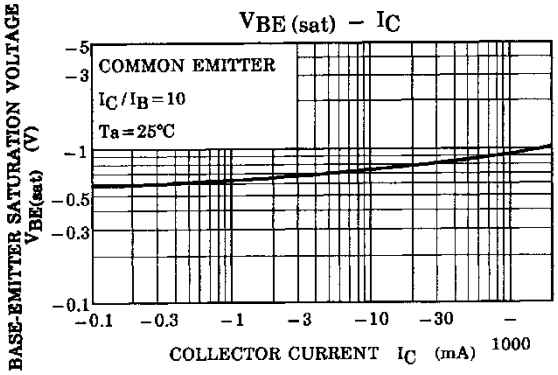
$V_{CE\,(sat)}$ – I_C



P_C* – Ta (Note)



$V_{BE\,(sat)}$ – I_C



*: Total Rating

Note: Reference only with T_j of 125 °C.

The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

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