

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

2SC4738

Audio Frequency General Purpose Amplifier Applications

- AEC-Q101 Qualified (Note1).
- High voltage and high current: $V_{CEO} = 50\text{ V}$, $I_C = 150\text{ mA}$ (max)
- Excellent h_{FE} linearity: $h_{FE}(I_C = 0.1\text{ mA})/h_{FE}(I_C = 2\text{ mA}) = 0.95$ (typ.)
- High h_{FE} : $h_{FE} = 120$ to 700
- Complementary to 2SA1832
- Small package

Note1: For detail information, please contact our sales.

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics	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 (Note 1)	100	mW
Junction temperature	T_j (Note 1)	125	$^\circ\text{C}$
Storage temperature range	T_{stg} (Note 1)	-55 to 125	$^\circ\text{C}$

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.

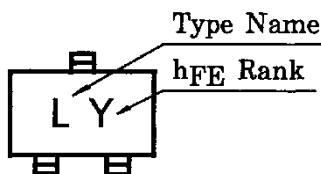
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Note 1: There are products which can support P_C : 120 mW,

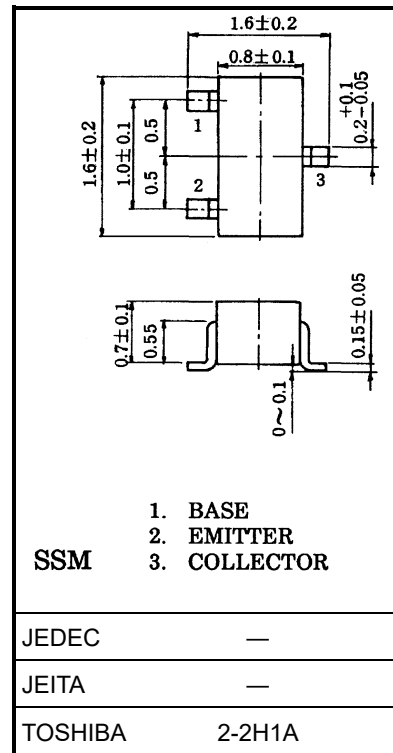
Mounted on a FR4 board. (25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 0.36 mm² × 3), T_j : 150 $^\circ\text{C}$, T_{stg} : -55 to 150 $^\circ\text{C}$.

Please contact our sales for detail information.

Marking



Unit: mm



Weight: 2.4 mg (typ.)

Start of commercial production
1990-10

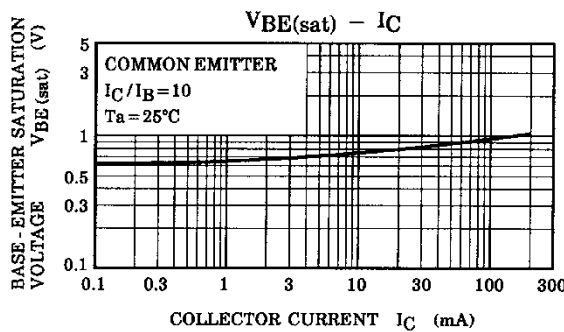
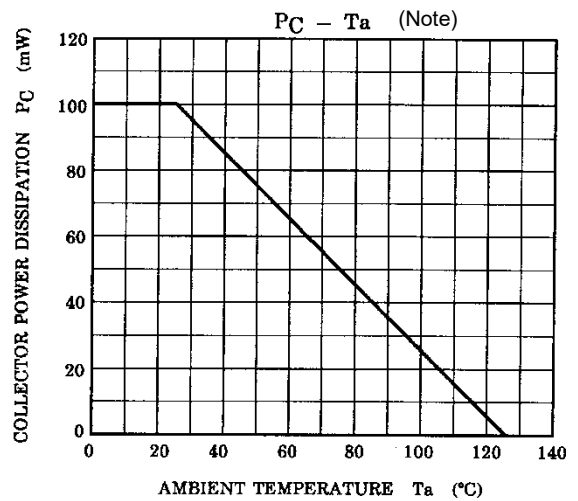
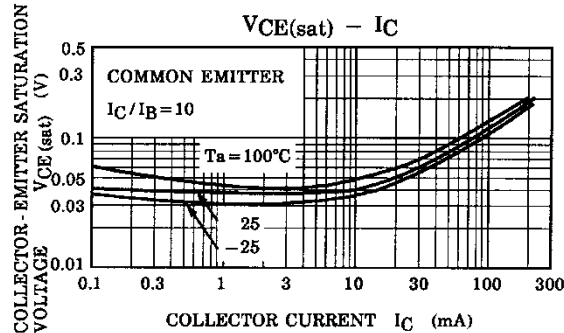
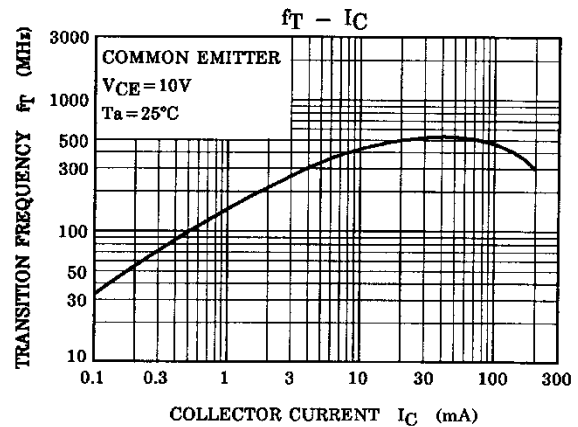
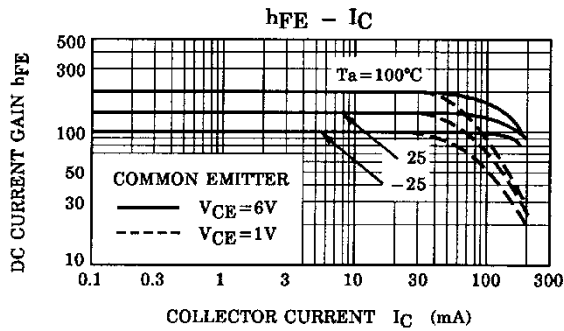
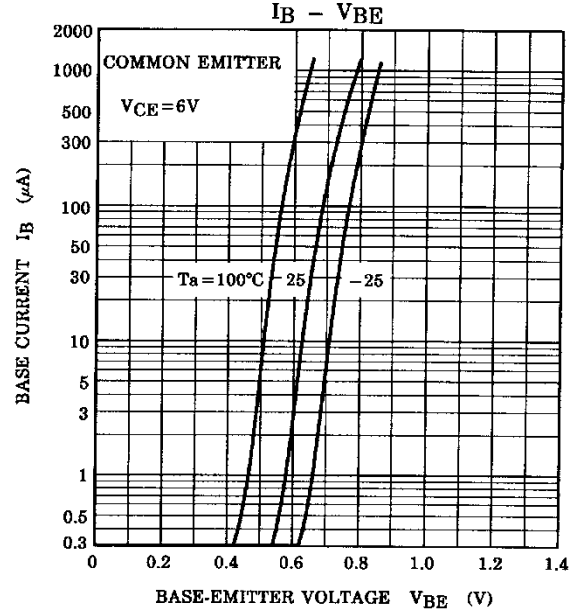
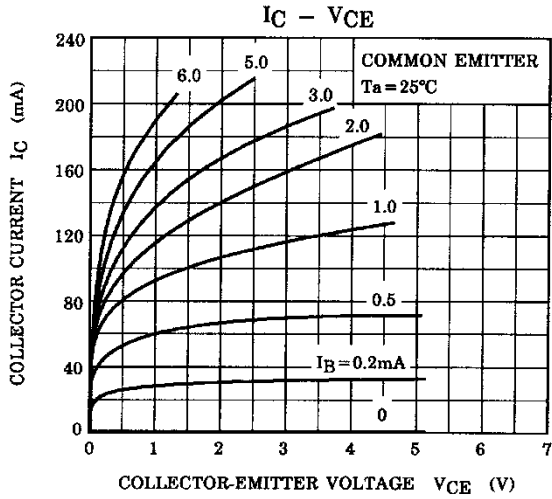
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	ICBO	V _{CB} = 60 V, I _E = 0 A	—	—	0.1	μA
Emitter cut-off current	IEBO	V _{EB} = 5 V, I _C = 0 A	—	—	0.1	μA
DC current gain	h _{FE} (Note)	V _{CE} = 6 V, I _C = 2 mA	120	—	700	—
Collector-emitter saturation voltage	V _{CE} (sat)	I _C = 100 mA, I _B = 10 mA	—	0.1	0.25	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	—	2.0	3.5	pF

Note: hFE classification Y (Y): 120 to 240, GR (G): 200 to 400, BL (L): 350 to 700

() marking symbol

Characteristics Curves



Note: The above characteristics curves are reference only with a junction temperature 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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