

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

2SA1588

Audio Frequency Low Power Amplifier Applications
 Driver Stage Amplifier Applications
 Switching Applications

- AEC-Q101 Qualified (Note1)
- Excellent h_{FE} linearity: $h_{FE(2)} = 25$ (min)
at $V_{CE} = -6$ V, $I_C = -400$ mA
- Complementary to 2SC4118

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}	-35	V
Collector-emitter voltage	V_{CEO}	-30	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-500	mA
Base current	I_B	-50	mA
Collector power dissipation	P_C (Note 2, 4)	200	mW
	P_C (Note 3)	100	
Junction temperature	T_j (Note 2)	150	$^\circ\text{C}$
	T_j (Note 3)	125	
Storage temperature range	T_{stg} (Note 2)	-55 to 150	$^\circ\text{C}$
	T_{stg} (Note 3)	-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.

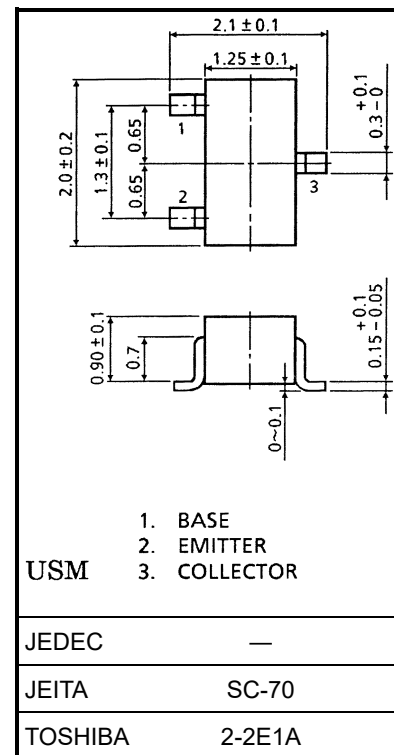
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Note 2: For devices with the ordering part number ending in LF(T).

Note 3: For devices with the ordering part number in other than LF(T).

Note 4: Mounted on a FR4 board. (25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 0.5 mm² × 3)

Unit: mm



Weight: 0.006 g (typ.)

Start of commercial production
1987-01

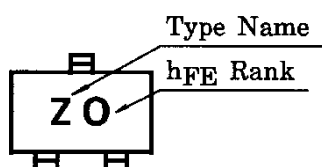
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	ICBO	V _{CB} = -35 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 (Note)	hFE (1)	V _{CE} = -1 V, I _C = -100 mA	70	—	400	—
	hFE (2)	V _{CE} = -6 V, I _C = -400 mA	25	—	—	
Collector-emitter saturation voltage	V _{CE} (sat)	I _C = -100 mA, I _B = -10 mA	—	-0.1	-0.25	V
Base-emitter voltage	V _{BE}	V _{CE} = -1 V, I _C = -100 mA	—	-0.8	-1.0	V
Transition frequency	f _T	V _{CE} = -6 V, I _C = -20 mA	—	200	—	MHz
Collector output capacitance	C _{ob}	V _{CB} = -6 V, I _E = 0 A, f = 1 MHz	—	13	—	pF

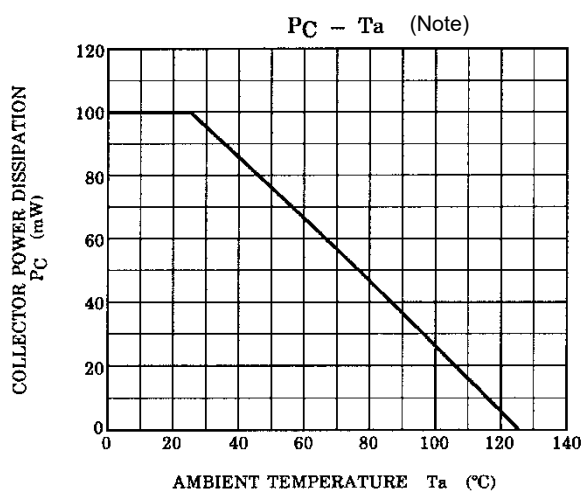
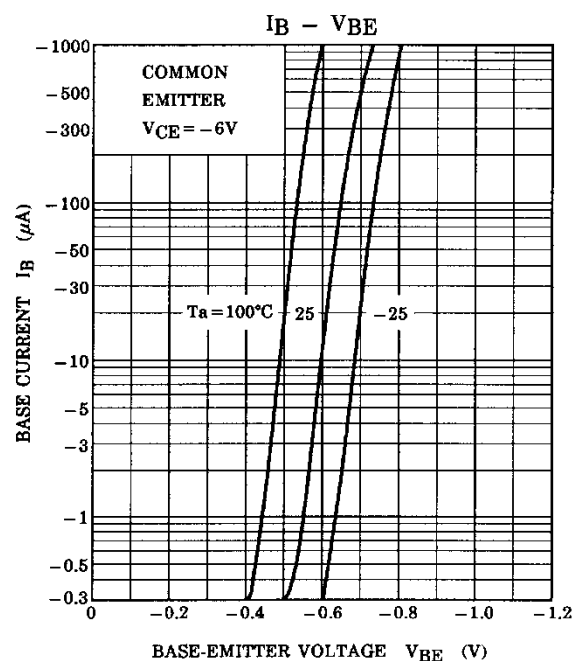
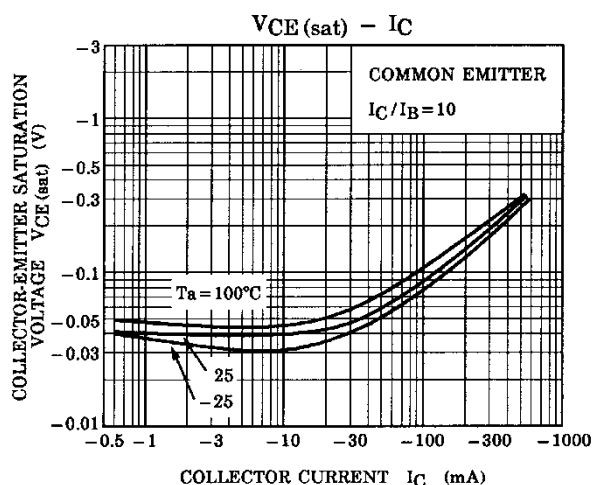
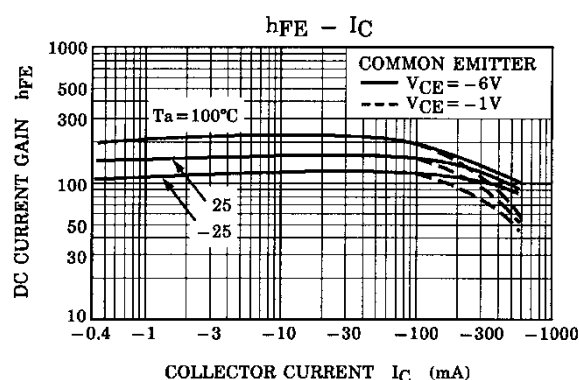
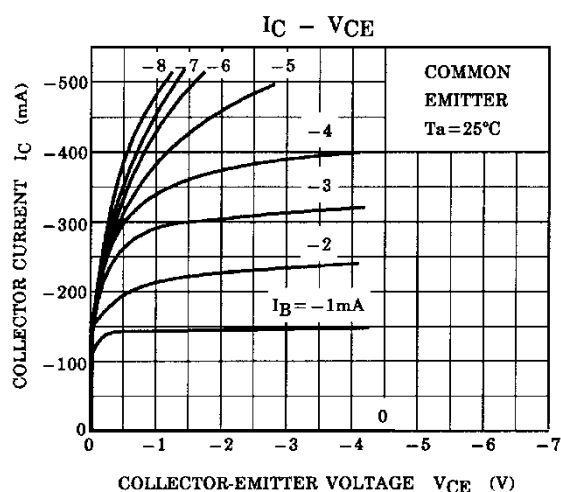
Note: hFE (1) classification O(O): 70~140, Y(Y): 120~240, GR(G): 200~400 () Marking Symbol

hFE (2) classification O: 25 (min), Y: 40 (min), GR: 75 (min)

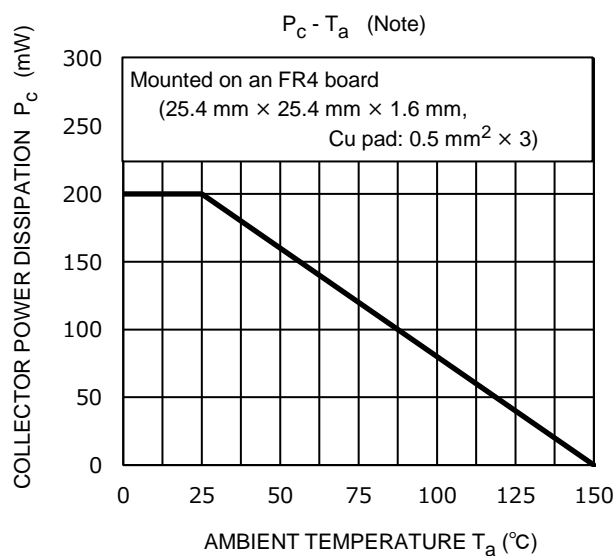
Marking



Characteristics Curves



Note: Reference only with T_j of 125°C .



Note: Reference only with T_j of 150°C .

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

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