

TOSHIBA Transistor Silicon PNP Epitaxial (PCT process)

2SA1588

Audio Frequency Low Power Amplifier Applications

Driver Stage Amplifier Applications

Switching Applications

Unit: mm

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

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	100	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-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).

		1. BASE
		2. EMITTER
		3. COLLECTOR
USM		
JEDEC		—
JEITA		SC-70
TOSHIBA		2-2E1A

Weight: 0.006 g (typ.)

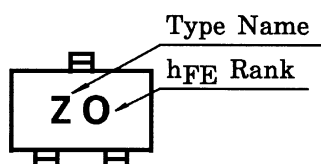
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = -35$ V, $I_E = 0$	—	—	-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5$ V, $I_C = 0$	—	—	-0.1	μA
DC current gain (Note)	$h_{FE} (1)$	$V_{CE} = -1$ V, $I_C = -100$ mA	70	—	400	
	$h_{FE} (2)$	$V_{CE} = -6$ 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, $I_E = 0$, $f = 1$ MHz	—	13	—	pF

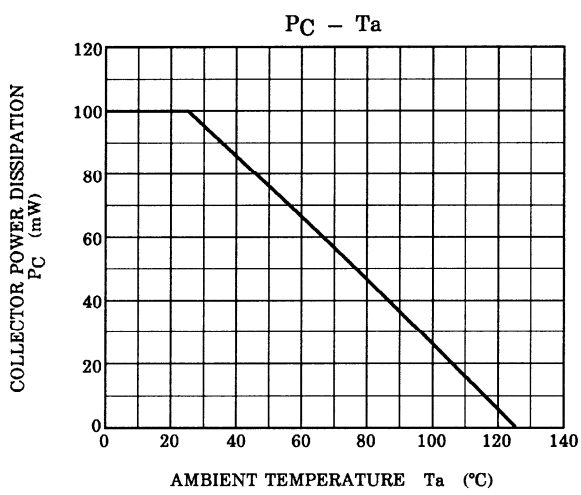
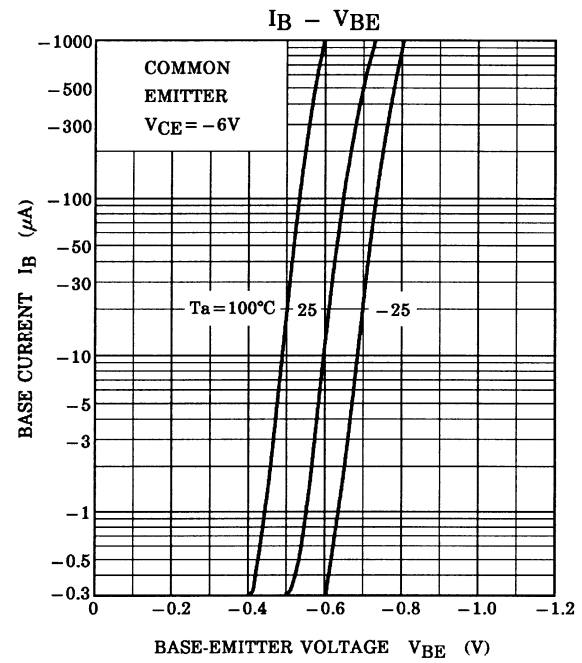
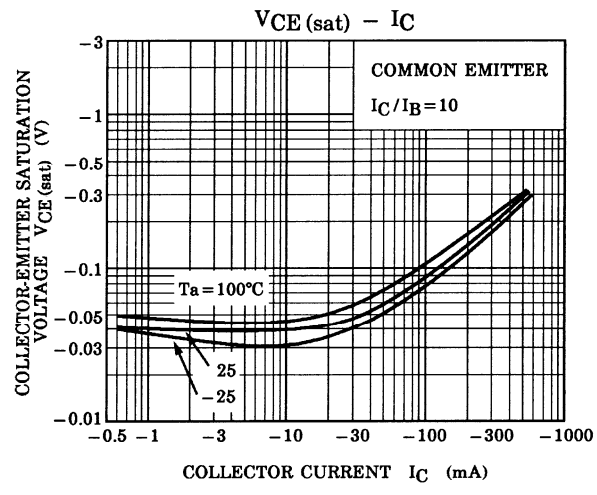
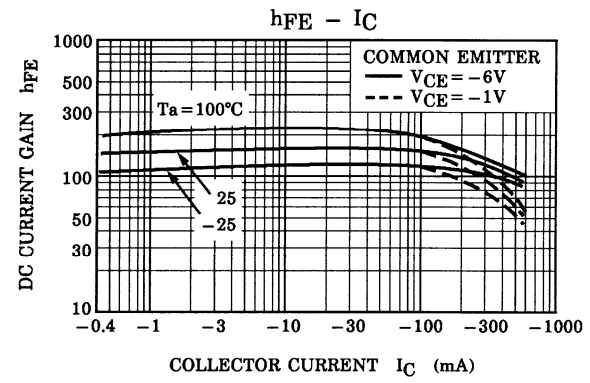
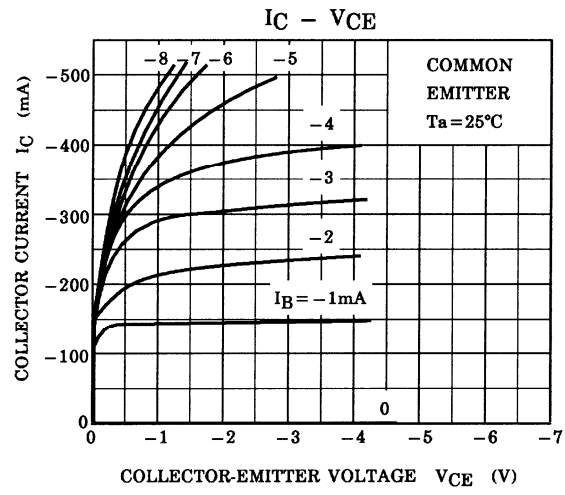
Note: $h_{FE} (1)$ classification O(O): 70~140, Y(Y): 120~240, GR(G): 200~400 () Marking Symbol

$h_{FE} (2)$ classification O: 25 (min), Y: 40 (min), GR: 75 (min)

Marking



Start of commercial production
1987-01



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