

TOSHIBA Transistor Silicon PNP Epitaxial (PCT process)

# 2SA1588

Audio Frequency Low Power Amplifier Applications

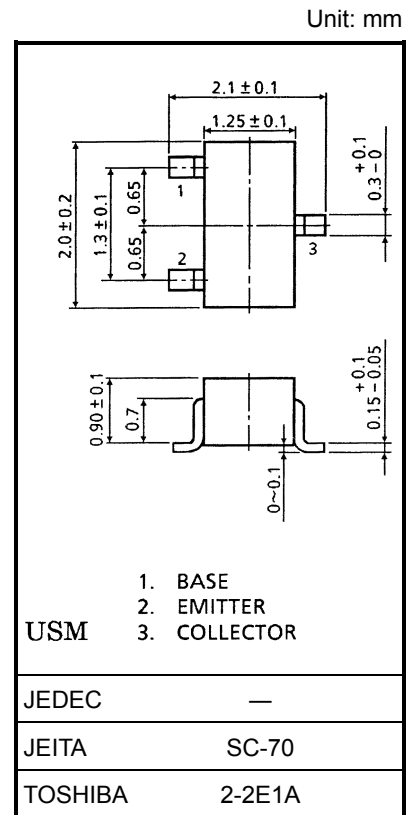
Driver Stage Amplifier Applications

Switching Applications

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

## 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	$T_{stg}$	-55~125	$^\circ\text{C}$



Weight: 0.006 g (typ.)

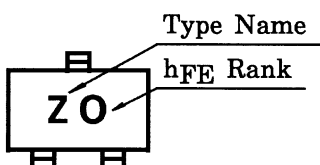
## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

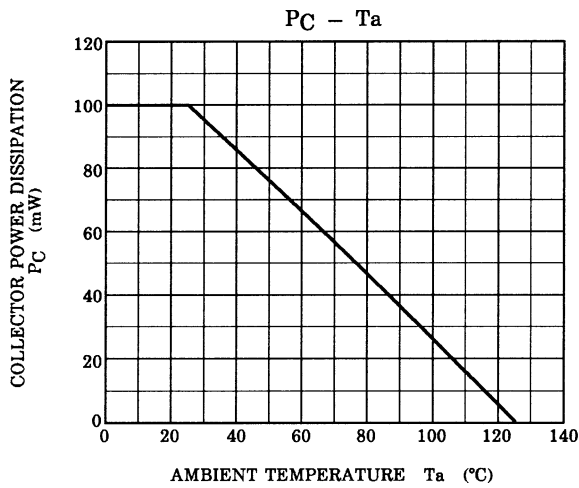
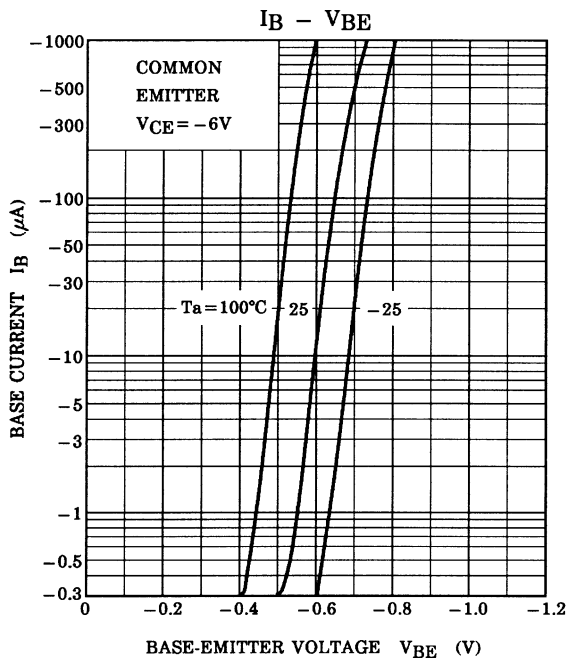
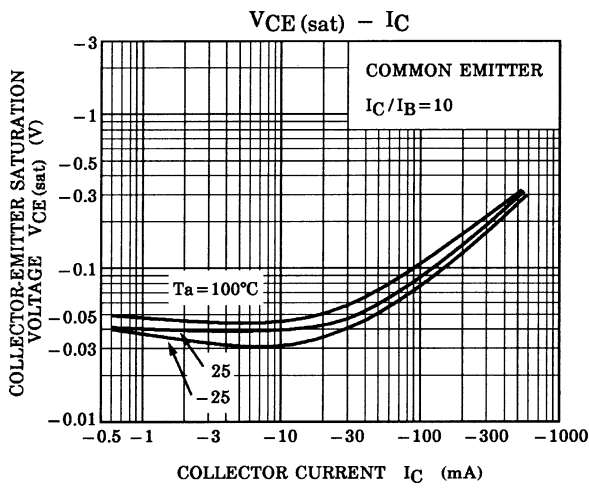
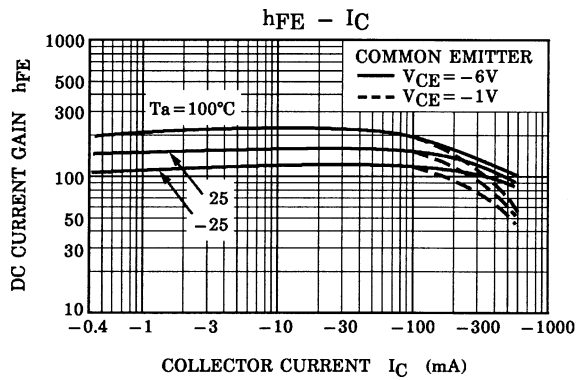
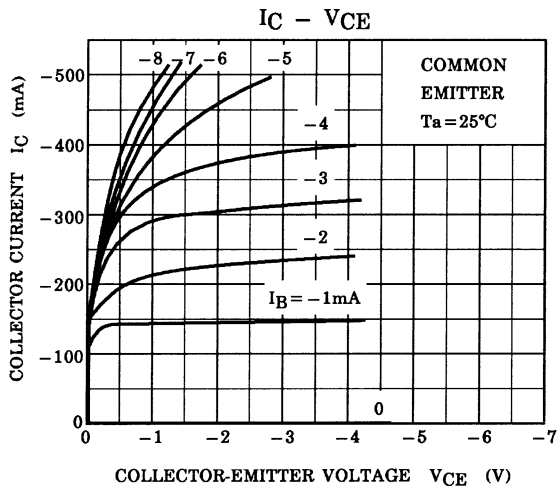
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = -35$ V, $I_E = 0$	—	—	-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5$ V, $I_C = 0$	—	—	-0.1	$\mu\text{A}$
DC current gain (Note)	$h_{FE} (1)$	$V_{CE} = -1$ V, $I_C = -100$ mA	70	—	240	
	$h_{FE} (2)$	$V_{CE} = -6$ 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: 70~140, Y: 120~240

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

## Marking





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