

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

**2SA1314**

Strobe Flash Applications

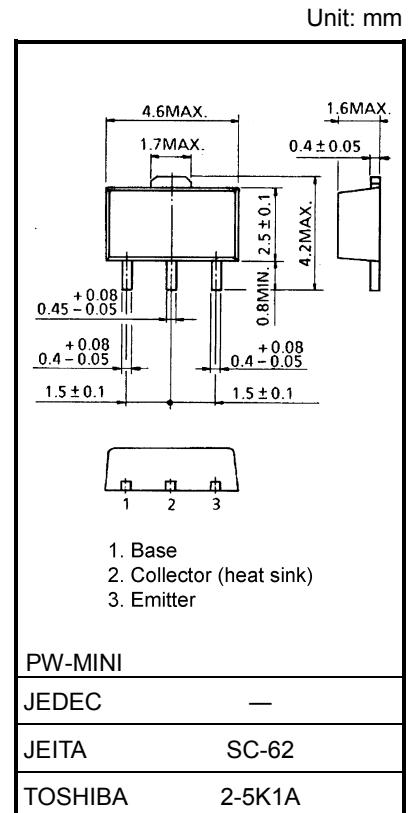
Audio Power Applications

- High DC current gain and excellent linearity
  - :  $hFE$  (1) = 140 to 600 ( $V_{CE} = -1$  V,  $I_C = -0.5$  A)
  - :  $hFE$  (2) = 60 (min), 120 (typ.), ( $V_{CE} = -1$  V,  $I_C = -4$  A)
- Low saturation voltage
  - :  $V_{CE(\text{sat})} = -0.5$  V (max) ( $I_C = -2$  A,  $I_B = -50$  mA)
- Small package
- Complementary to 2SC2982

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

Characteristics	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-20	V
Collector-emitter voltage	$V_{CEO}$	-10	V
Emitter-base voltage	$V_{EBO}$	-6	V
Collector current	DC	$I_C$	-2
	Pulsed (Note 1)	$I_{CP}$	-4
Base current	$I_B$	-2	A
Collector power dissipation	$P_C$	500	mW
	$P_C$ (Note 2)	1000	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55 to 150	$^\circ\text{C}$

Note 1: Pulse test: pulse width = 10 mS (max), duty cycle = 30% (max)

Note 2: Mounted on ceramic substrate (250 mm<sup>2</sup> × 0.8 t)

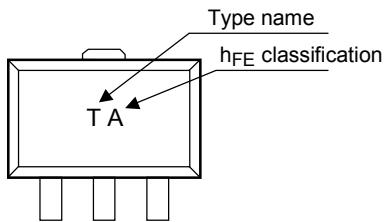
Weight: 0.05 g (typ.)

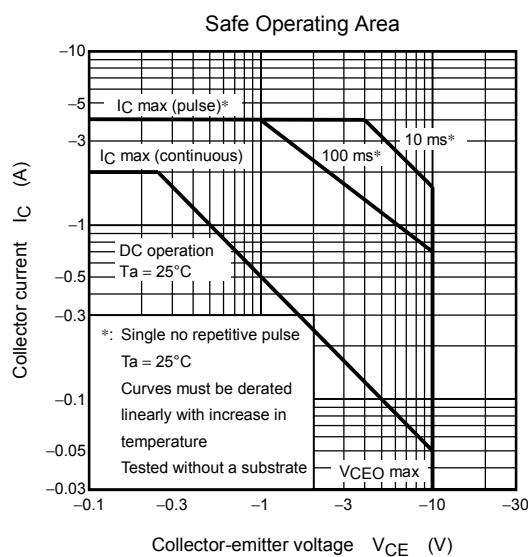
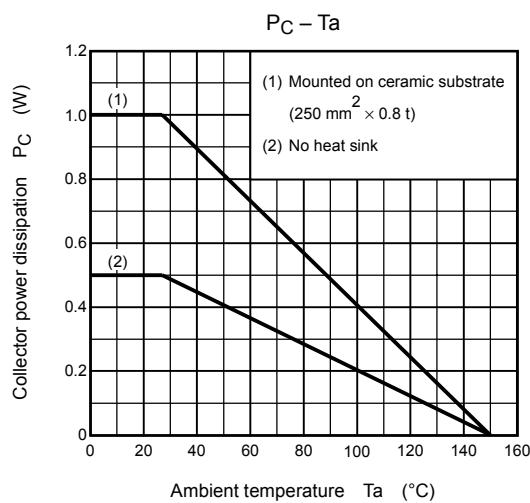
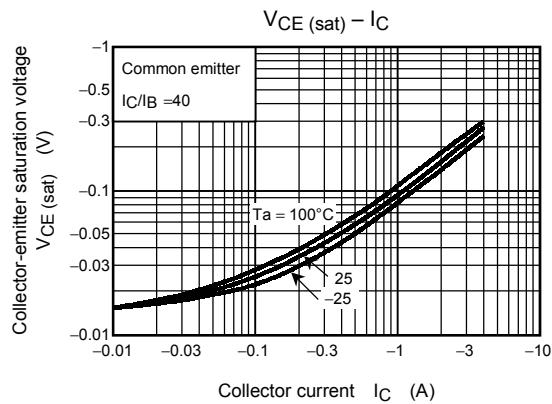
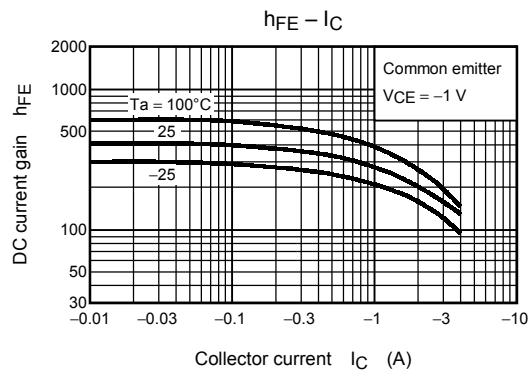
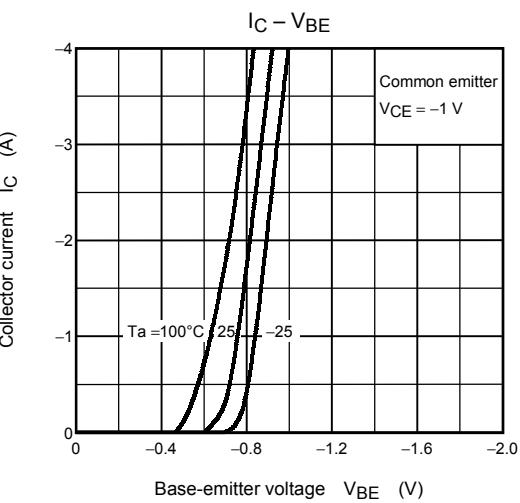
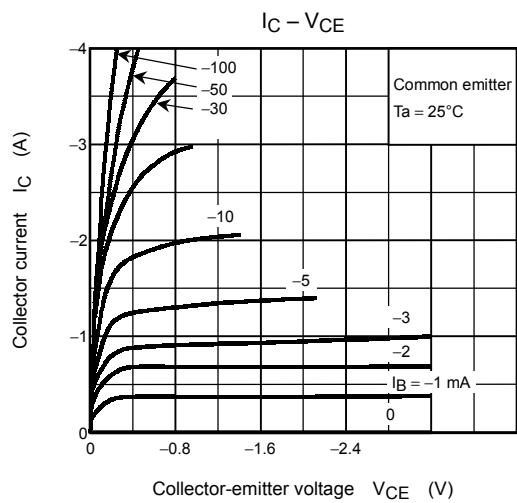
Electrical Characteristics ( $T_a = 25^\circ C$ )

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = -20 V, I_E = 0$	—	—	-100	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -6 V, I_C = 0$	—	—	-100	nA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10 mA, I_B = 0$	-10	—	—	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -1 mA, I_C = 0$	-6	—	—	V
DC current gain	$h_{FE}$ (1) (Note 3)	$V_{CE} = -1 V, I_C = -0.5 A$	140	—	600	
	$h_{FE}$ (2)	$V_{CE} = -1 V, I_C = -4 A$	60	120	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2 A, I_B = -50 mA$	—	-0.2	-0.5	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = -1 V, I_C = -2 A$	—	-0.83	-1.5	V
Transition frequency	$f_T$	$V_{CE} = -1 V, I_C = -0.5 A$	—	140	—	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10 V, I_E = 0, f = 1 MHz$	—	50	—	pF

Note 3:  $h_{FE}$  (1) classification A: 140 to 280, B: 200 to 400, C: 300 to 600

## Marking





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