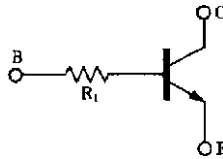


### on-chip resistor PNP silicon epitaxial transistor For mid-speed switching

#### FEATURES

- On-chip bias resistor  
( $R_1 = 10\text{ k}\Omega$ )
- Complementary transistor with BA1A4Z



#### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CB0}$	60	V
Collector to emitter voltage	$V_{CEO}$	50	V
Emitter to base voltage	$V_{EBO}$	5	V
Collector current (DC)	$I_{C(DC)}$	100	mA
Collector current (Pulse)	$I_{C(pulse)}$ *	200	mA
Total power dissipation	$P_T$	250	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\*  $PW \leq 10\text{ ms}$ , duty cycle  $\leq 50\%$

#### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 50\text{ V}$ , $I_E = 0$			100	nA
DC current gain	$h_{FE1}$ **	$V_{CE} = 5.0\text{ V}$ , $I_C = 5.0\text{ mA}$	135	340	600	-
DC current gain	$h_{FE2}$ **	$V_{CE} = 5.0\text{ V}$ , $I_C = 50\text{ mA}$	100	300		-
Collector saturation voltage	$V_{CE(sat)}$ **	$I_C = 5.0\text{ mA}$ , $I_B = 0.25\text{ mA}$		0.04	0.2	V
High level input voltage	$V_{IL}$ **	$V_{CE} = 0.2\text{ V}$ , $I_C = 5.0\text{ mA}$	2.0	0.8		V
Low level input voltage	$V_{IH}$ **	$V_{CE} = 5.0\text{ V}$ , $I_C = 100\text{ }\mu\text{A}$		0.55	0.5	V
Input resistance	$R_1$		0.7	10	13.0	k $\Omega$
Turn-on time	$t_{on}$	$V_{CC} = 5.0\text{ V}$ , $R_L = 1.0\text{ k}\Omega$			0.2	$\mu\text{s}$
Storage time	$t_{stg}$	$V_i = 5.0\text{ V}$ , $PW = 2.0\text{ }\mu\text{s}$			5.0	$\mu\text{s}$
Turn-off time	$t_{off}$	duty cycle $\leq 2\%$			6.0	$\mu\text{s}$

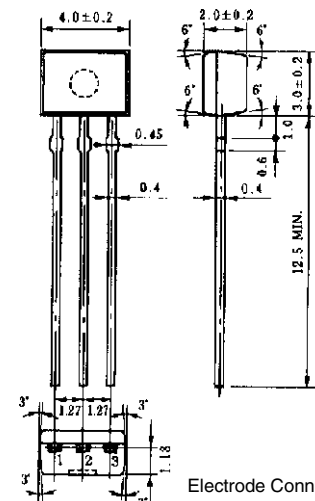
\*\* Pulse test  $PW \leq 350\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$

#### $h_{FE}$ CLASSIFICATION

Marking	Q	P	K
$h_{FE1}$	135 to 270	200 to 400	300 to 600

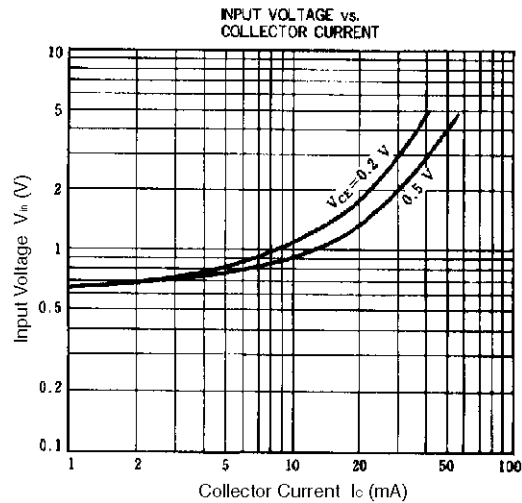
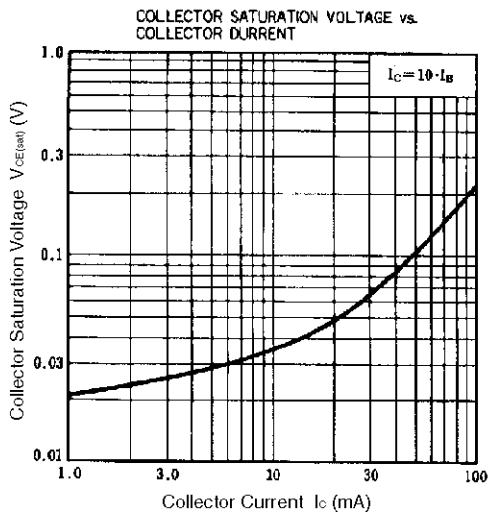
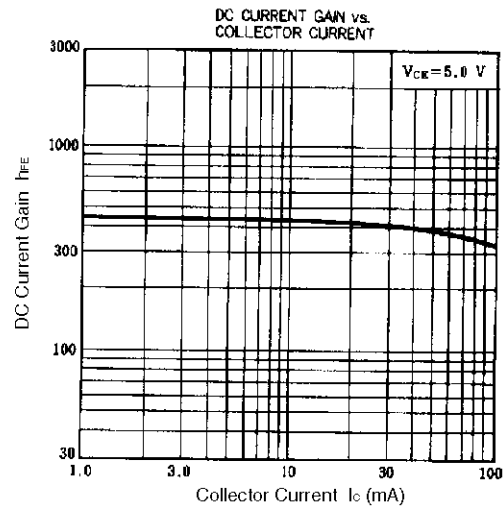
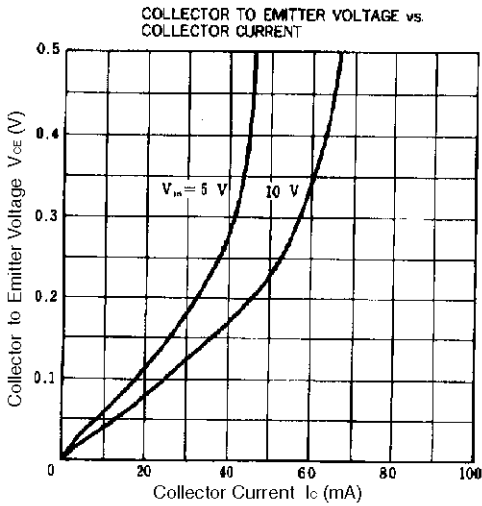
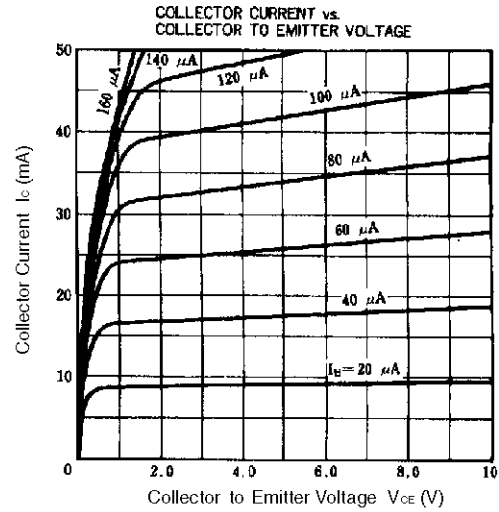
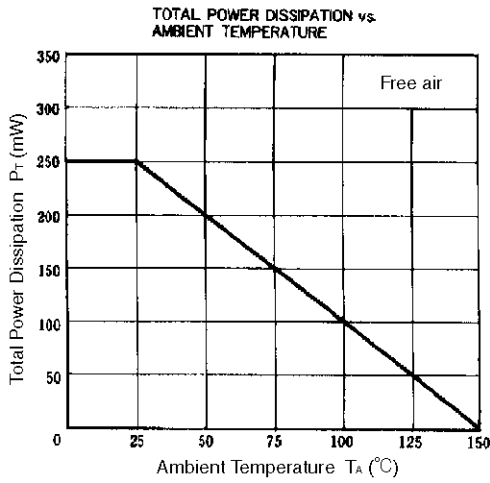
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#### PACKAGE DRAWING (UNIT: mm)



Electrode Connection  
1. Emitte  
2. Collector  
3. Base

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )



[MEMO]

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