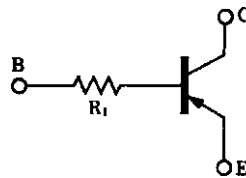


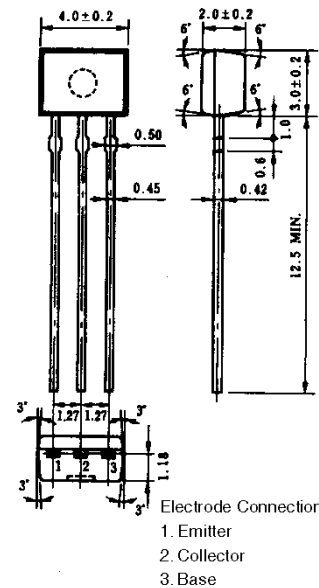
### on-chip resistor PNP silicon epitaxial transistor For mid-speed switching

#### FEATURES

- On-chip bias resistor  
( $R_1 = 22 \text{ k}\Omega$ )
- Complementary transistor with BA1F4Z



#### PACKAGE DRAWING (UNIT: mm)



#### 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	$V_{CE0}$	-50	V
Emitter to base voltage	$V_{EB0}$	-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	280	600	-
DC current gain	$h_{FE2}$ **	$V_{CE} = -5.0 \text{ V}$ , $I_C = -50 \text{ mA}$	100	200		-
Collector saturation voltage	$V_{CE(sat)}$ **	$I_C = -5.0 \text{ mA}$ , $I_B = -0.25 \text{ mA}$		-0.06	-0.2	V
Low level input voltage	$V_{IL}$ **	$V_{CE} = -5.0 \text{ V}$ , $I_C = -100 \mu\text{A}$		-0.57	-0.5	V
High level input voltage	$V_{IH}$ **	$V_{CE} = -0.2 \text{ V}$ , $I_C = -5.0 \text{ mA}$	-3.0	-1.1		V
Input resistance	$R_1$		15.4	22	28.6	$\text{k}\Omega$
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	$t_{stg}$	$V_i = -5.0 \text{ V}$ , $PW = 2.0 \mu\text{s}$			5.0	$\mu\text{s}$
Turn-off time	$t_{off}$	duty cycle $\leq 2 \%$			6.0	$\mu\text{s}$

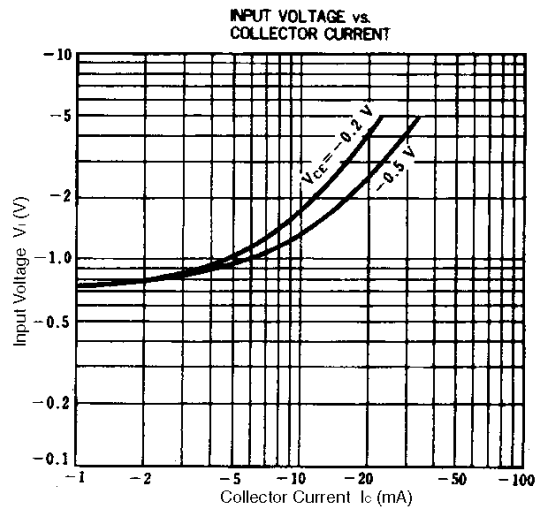
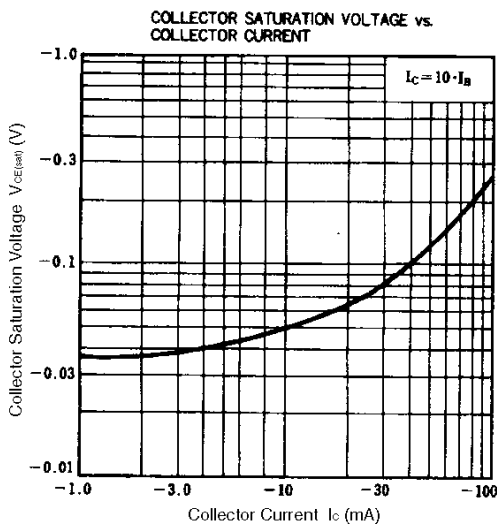
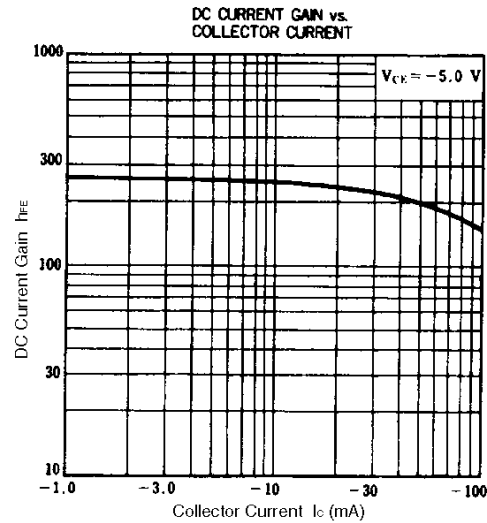
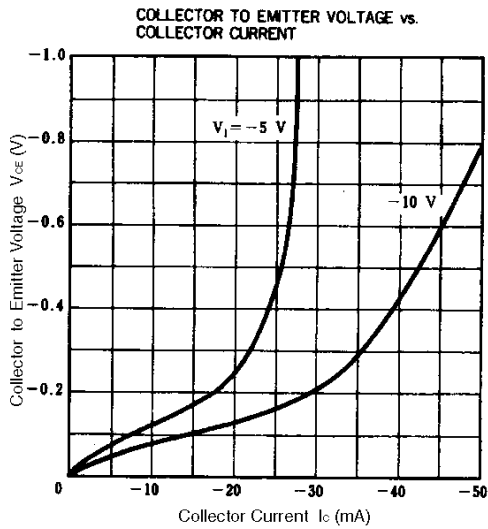
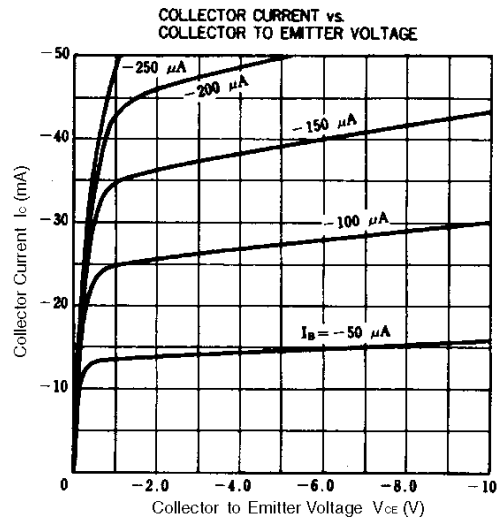
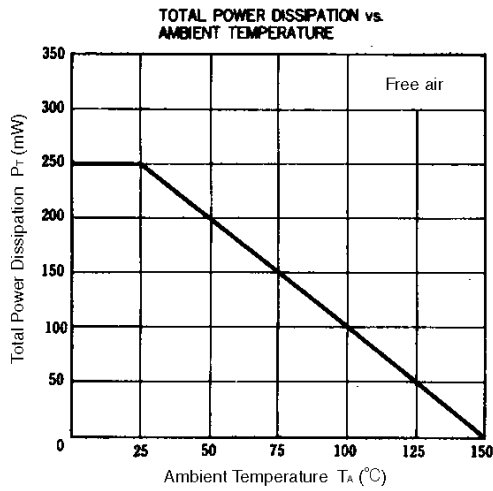
\*\* Pulse test  $PW \leq 350 \mu\text{s}$ , duty cycle  $\leq 2 \%$

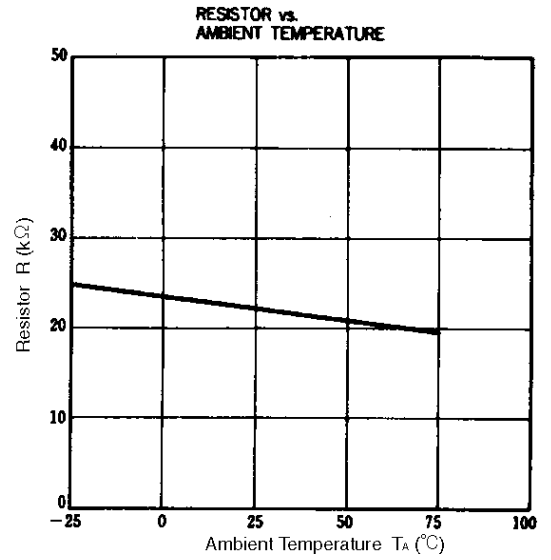
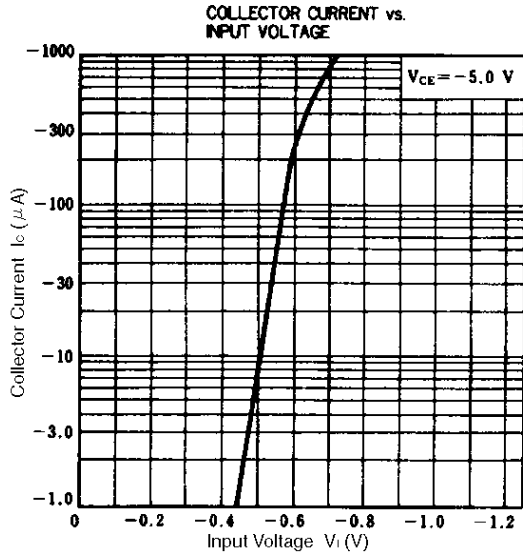
#### $h_{FE}$ CLASSIFICATION

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

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





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