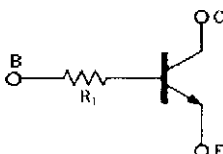


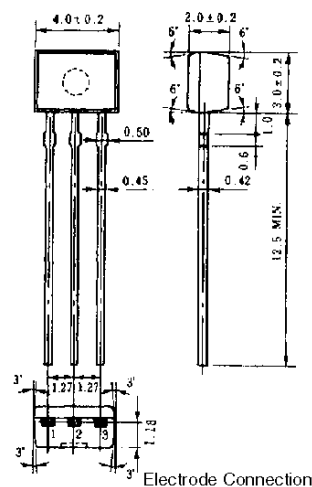
on-chip resistor NPN silicon epitaxial transistor
For mid-speed switching

FEATURES

- On-chip bias resistor (R₁ = 22 kΩ)
- Complementary transistor with BN1F4Z



PACKAGE DRAWING (UNIT: mm)



Electrode Connection
1. Emitter
2. Collector
3. Base

ABSOLUTE MAXIMUM RATINGS (Ta = 25°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 _{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	°C
Storage temperature	T _{stg}	-55 to +150	°C

* PW ≤ 10 ms, duty cycle ≤ 50 %

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I _{CB0}	V _{CB} = 50 V, I _E = 0			100	nA
DC current gain	h _{FE1} **	V _{CE} = 5.0 V, I _C = 5.0 mA	135	330	600	-
DC current gain	h _{FE2} **	V _{CE} = 5.0 V, I _C = 50 mA	100	290		-
Collector saturation voltage	V _{CE(sat)} **	I _C = 5.0 mA, I _B = 0.25 mA		0.04	0.2	V
Low level input voltage	V _{IL} **	V _{CE} = 5.0 V, I _C = 100 μA		0.55	0.5	V
High level input voltage	V _{IH} **	V _{CE} = 0.2 V, I _C = 5.0 mA	3.0	1.05		V
Input resistance	R ₁		15.4	22	28.6	kΩ
Turn-on time	t _{on}	V _{CC} = 5.0 V, R _L = 1.0 kΩ			0.2	μs
Storage time	t _{stg}	V _i = 5.0 V, PW = 2.0 μs			5.0	μs
Turn-off time	t _{off}	duty cycle ≤ 2 %			6.0	μs

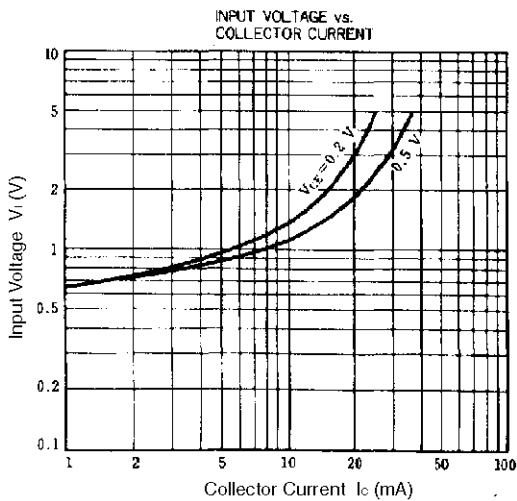
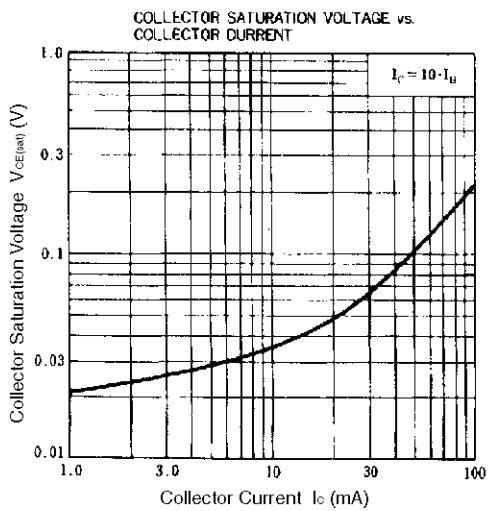
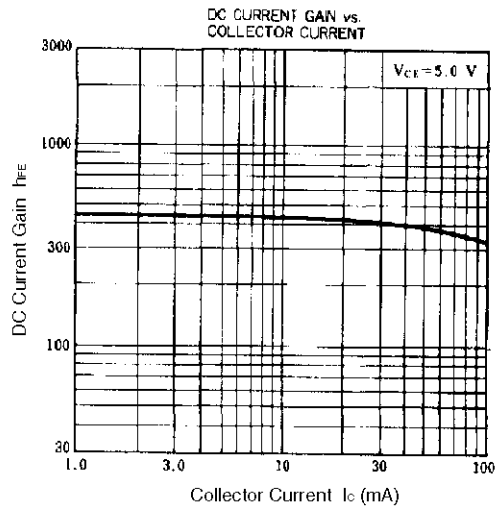
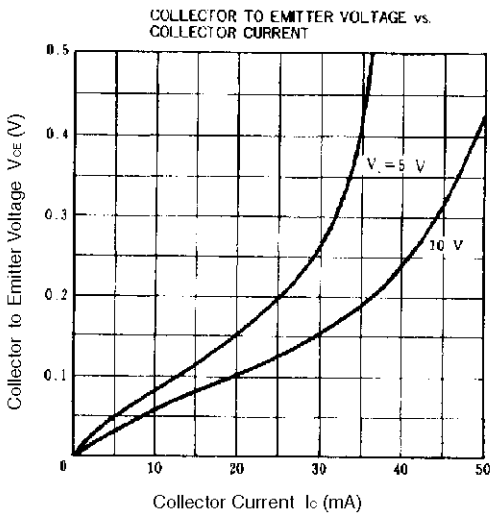
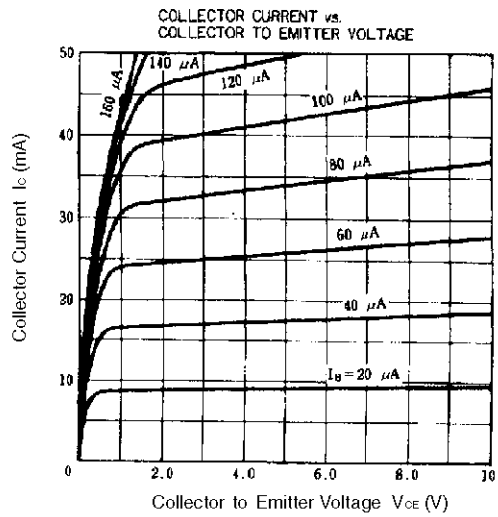
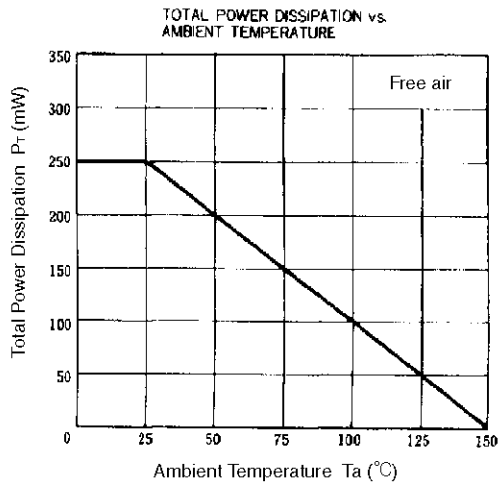
** Pulse test PW ≤ 350 μs, duty cycle ≤ 2 %

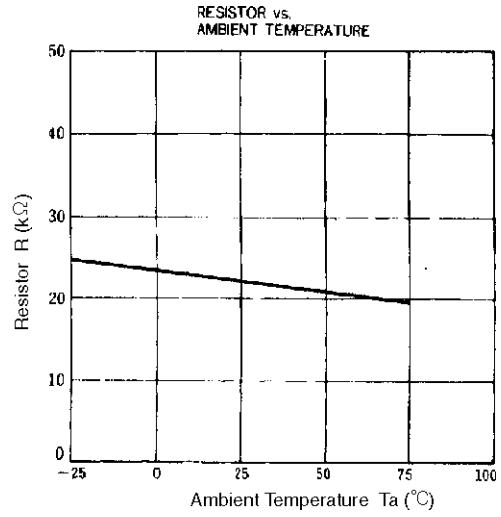
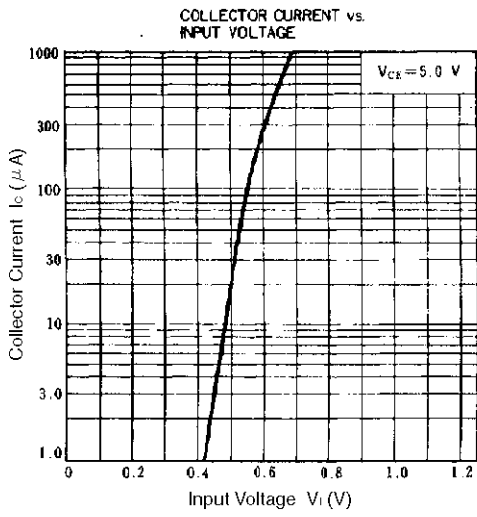
h_{FE} CLASSIFICATION

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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