

# XN4608

Silicon NPN epitaxial planer transistor (Tr1)  
 Silicon PNP epitaxial planer transistor (Tr2)

For general amplification (Tr1)

For amplification of low frequency output (Tr2)

### ■ Features

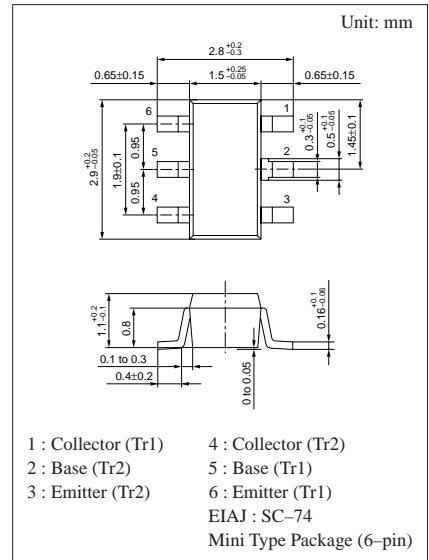
- Two elements incorporated into one package.
- Reduction of the mounting area and assembly cost by one half.

### ■ Basic Part Number of Element

- 2SD601A+2SB970

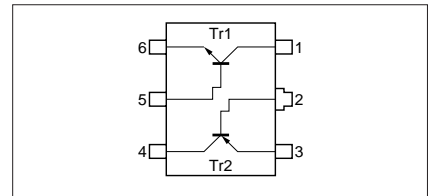
### ■ Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Ratings	Unit
Tr1	Collector to base voltage	$V_{CBO}$	60	V
	Collector to emitter voltage	$V_{CEO}$	50	V
	Emitter to base voltage	$V_{EBO}$	7	V
	Collector current	$I_C$	100	mA
	Peak collector current	$I_{CP}$	200	mA
Tr2	Collector to base voltage	$V_{CBO}$	-15	V
	Collector to emitter voltage	$V_{CEO}$	-10	V
	Emitter to base voltage	$V_{EBO}$	-7	V
	Collector current	$I_C$	-0.5	A
	Peak collector current	$I_{CP}$	-1	A
Overall	Total power dissipation	$P_T$	300	mW
	Junction temperature	$T_j$	150	°C
	Storage temperature	$T_{stg}$	-55 to +150	°C



Marking Symbol: 5E

Internal Connection



■ Electrical Characteristics (Ta=25°C)

● Tr1

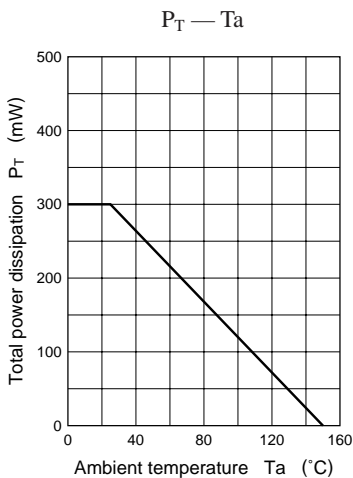
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V <sub>CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> = 0	60			V
Collector to emitter voltage	V <sub>CEO</sub>	I <sub>C</sub> = 2mA, I <sub>B</sub> = 0	50			V
Emitter to base voltage	V <sub>EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	7			V
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = 20V, I <sub>E</sub> = 0			0.1	μA
	I <sub>CEO</sub>	V <sub>CE</sub> = 10V, I <sub>B</sub> = 0			100	μA
Forward current transfer ratio	h <sub>FE</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 2mA	160		460	
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 100mA, I <sub>B</sub> = 10mA		0.1	0.3	V
Transition frequency	f <sub>T</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = -2mA, f = 200MHz		150		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz		3.5		pF

● Tr2

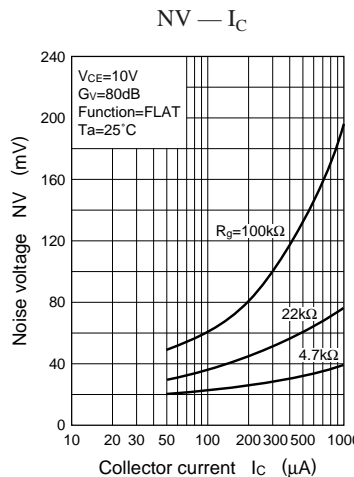
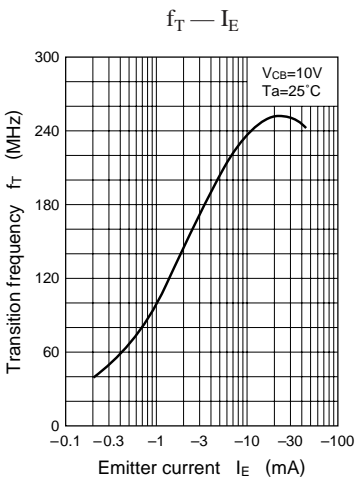
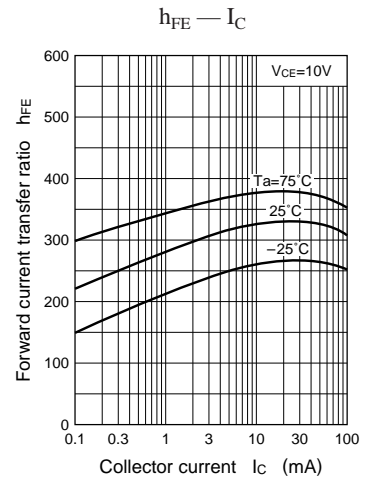
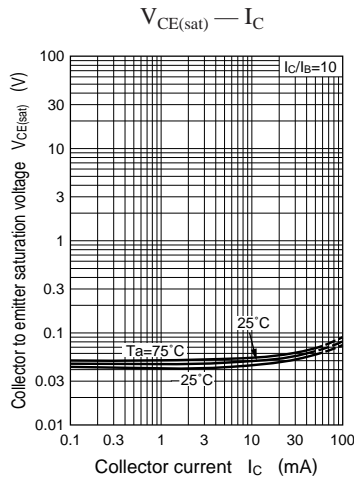
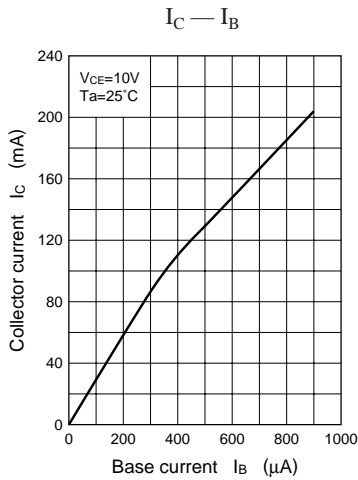
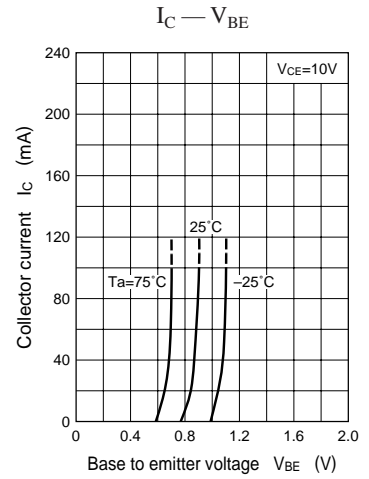
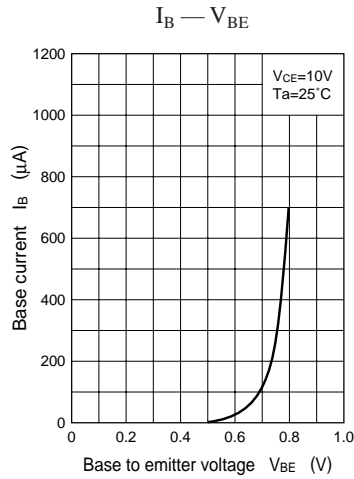
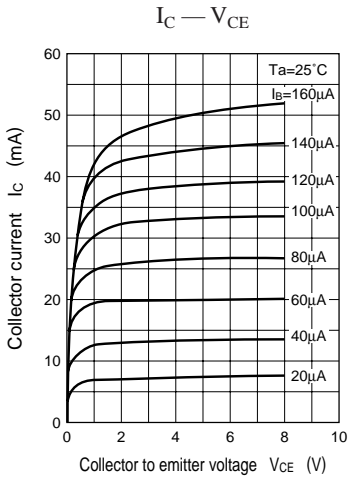
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V <sub>CBO</sub>	I <sub>C</sub> = -10μA, I <sub>E</sub> = 0	-15			V
Collector to emitter voltage	V <sub>CEO</sub>	I <sub>C</sub> = -1mA, I <sub>B</sub> = 0	-10			V
Emitter to base voltage	V <sub>EBO</sub>	I <sub>E</sub> = -10μA, I <sub>C</sub> = 0	-7			V
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0			-0.1	μA
Forward current transfer ratio	h <sub>FE1</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -0.5A*	100		350	
	h <sub>FE2</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -1A*	60			
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -0.4A, I <sub>B</sub> = -8mA		-0.16	-0.3	V
Base to emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = -0.4A, I <sub>B</sub> = -8mA		-0.8	-1.2	V
Transition frequency	f <sub>T</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 50mA, f = 200MHz		130		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz		22		pF

\* Pulse measurement

Common characteristics chart



Characteristics charts of Tr1



Characteristics charts of Tr2

