

XN6542

Silicon NPN epitaxial planer transistor

For high frequency amplification, oscillation, and mixing (Tr1),
For medium-frequency amplification (Tr2)

Features

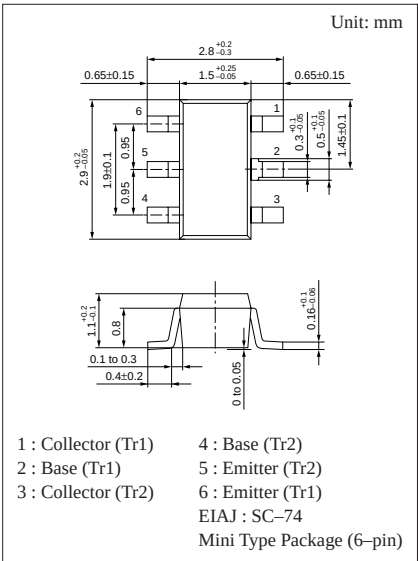
- Two elements incorporated into one package.
- Reduction of the mounting area and assembly cost by one half.

Basic Part Number of Element

- 2SC2480+2SC4444

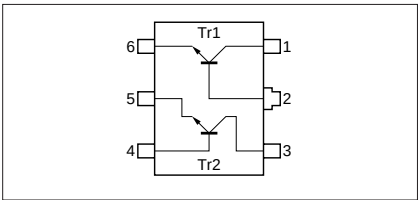
Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Ratings	Unit
Tr1	Collector to base voltage	V_{CBO}	30	V
	Collector to emitter voltage	V_{CEO}	20	V
	Emitter to base voltage	V_{EBO}	3	V
	Collector current	I_C	50	mA
Tr2	Collector to base voltage	V_{CBO}	45	V
	Collector to emitter voltage	V_{CEO}	35	V
	Emitter to base voltage	V_{EBO}	4	V
	Collector current	I_C	50	mA
Overall	Total power dissipation	P_T	300	mW
	Junction temperature	T_j	150	°C
	Storage temperature	T_{sig}	-55 to +150	°C



Marking Symbol: 5Z

Internal Connection



■ Electrical Characteristics (Ta=25°C)

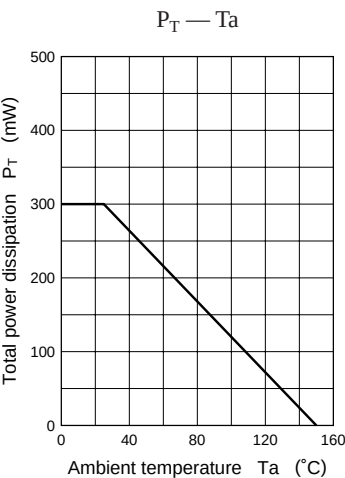
● Tr1

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V_{CBO}	$I_C = 100\mu A, I_E = 0$	30			V
Emitter to base voltage	V_{EBO}	$I_E = 10\mu A, I_C = 0$	3			V
Forward current transfer ratio	h_{FE}	$V_{CB} = 10V, I_E = -2mA$	25		250	
Base to emitter voltage	V_{BE}	$V_{CB} = 10V, I_E = -2mA$		720		mV
Common emitter reverse transfer capacitance	C_{re}	$V_{CB} = 10V, I_E = -1mA, f = 10.7MHz$		1.0	1.5	pF
Transition frequency	f_T	$V_{CB} = 10V, I_E = -15mA, f = 200MHz$	1000	1300	1600	MHz
Power gain	PG	$V_{CB} = 10V, I_E = -1mA, f = 100MHz$		20		dB
Reverse transfer capacitance	C_{rb}	$V_{CE} = 6V, I_C = 0, f = 1MHz$		0.8		pF

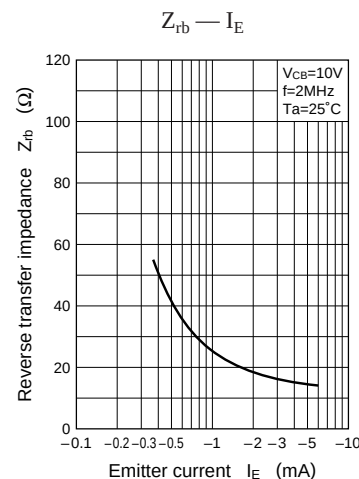
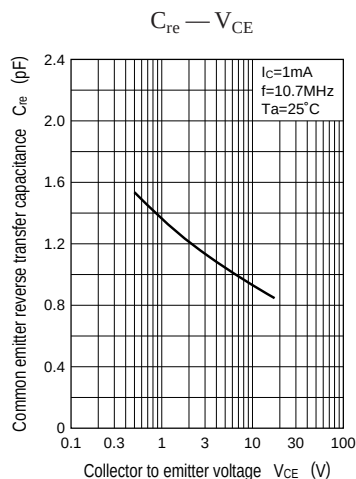
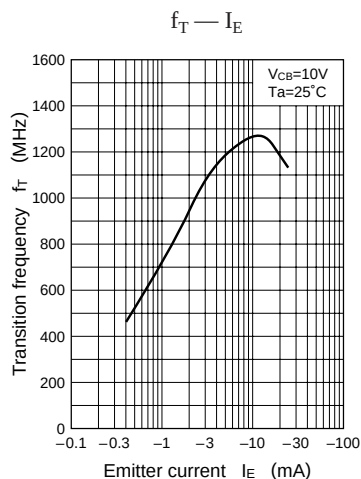
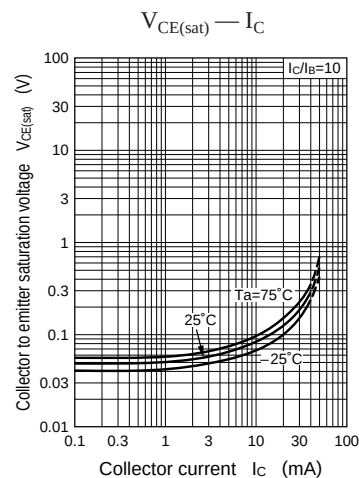
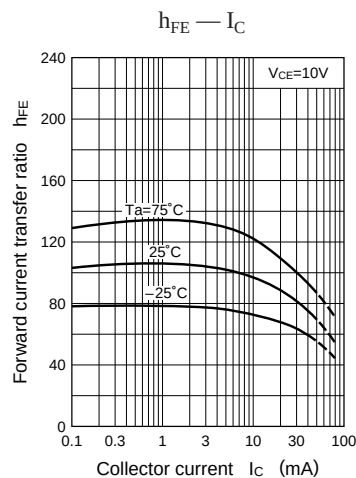
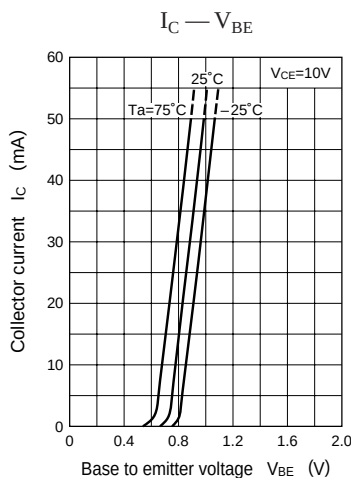
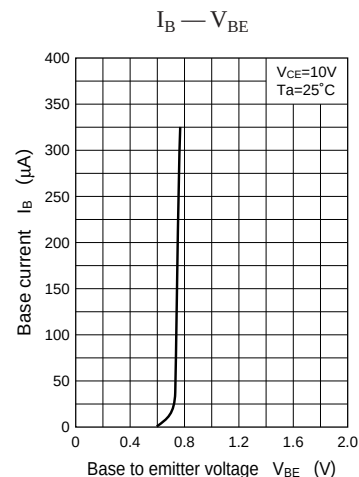
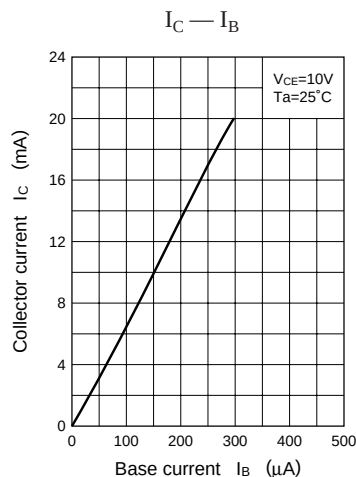
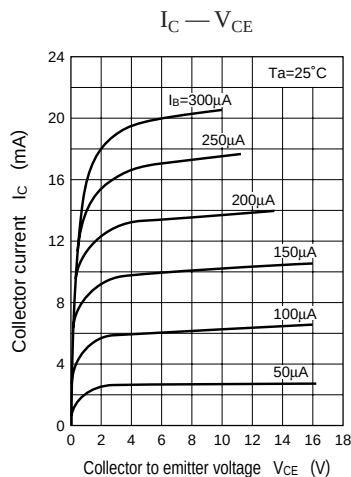
● Tr2

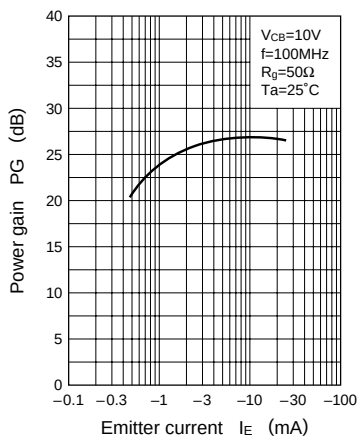
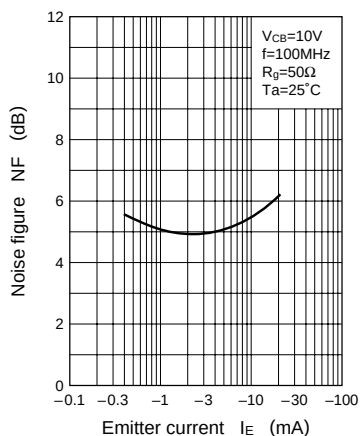
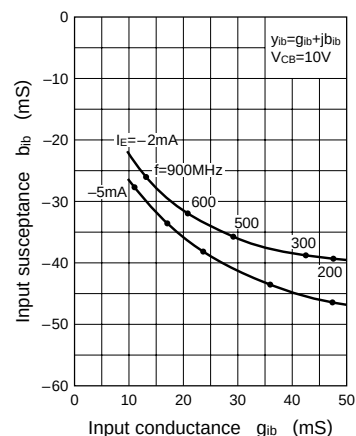
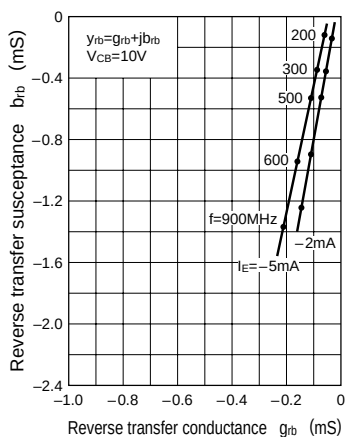
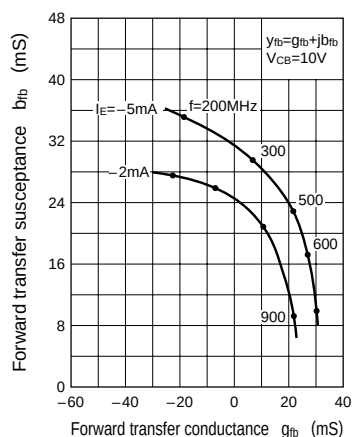
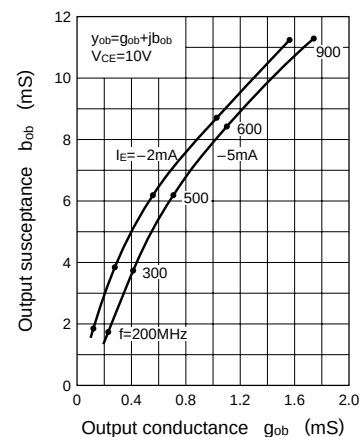
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V_{CBO}	$I_C = 10\mu A, I_E = 0$	45			V
Collector to emitter voltage	V_{CEO}	$I_C = 1mA, I_B = 0$	35			V
Emitter to base voltage	V_{EBO}	$I_E = 10\mu A, I_C = 0$	4			V
Collector cutoff current	I_{CEO}	$V_{CE} = 20V, I_B = 0$			10	μA
Forward current transfer ratio	h_{FE}	$V_{CB} = 10V, I_E = -10mA$	20	50	100	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20mA, I_B = 2mA$			0.5	V
Transition frequency	f_T	$V_{CB} = 10V, I_E = -10mA, f = 100MHz$	300	500		MHz
Common emitter reverse transfer capacitance	C_{re}	$V_{CB} = 10V, I_E = -1mA, f = 10.7MHz$			1.5	pF
Power gain	PG	$V_{CB} = 10V, I_E = -10mA, f = 58MHz$		18		dB

Common characteristics chart



Characteristics charts of Tr1



PG — I_E NF — I_E  $b_{ib} — g_{ib}$  $b_{rb} — g_{rb}$  $b_{fb} — g_{fb}$  $b_{ob} — g_{ob}$ 

Characteristics charts of Tr2

