

TOSHIBA Transistor Silicon PNP Epitaxial Planar Type

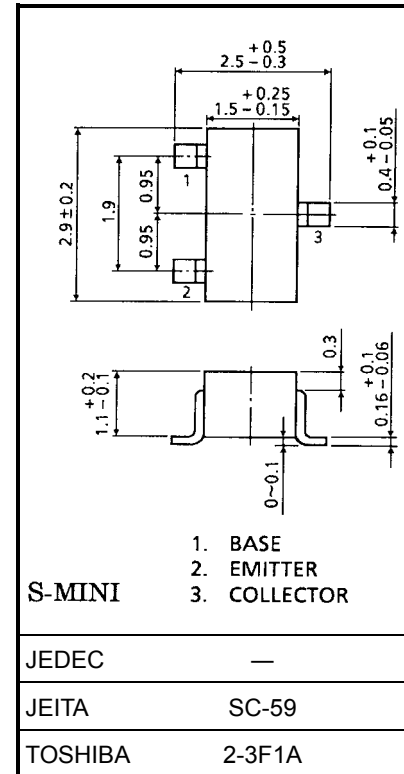
2SA1245

High Frequency Amplifier and Switching Applications
VHF~UHF Band Low Noise Amplifier Applications

Unit: mm

Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-15	V
Collector-emitter voltage	V_{CEO}	-8	V
Emitter-base voltage	V_{EBO}	-2	V
Collector current	I_C	-30	mA
Base current	I_B	-15	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	125	°C
Storage temperature range	T_{stg}	-55~125	°C



Microwave Characteristics (Ta = 25°C)

Weight: 0.012 g (typ.)

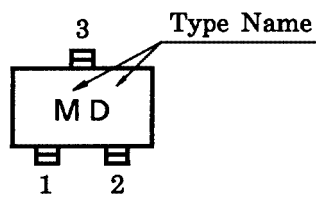
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Transition frequency	f_T	$V_{CE} = -5\text{ V}, I_C = -10\text{ mA}$	—	4	—	GHz
Insertion gain	$ S_{21e} ^2 (1)$	$V_{CE} = -5\text{ V}, I_C = -10\text{ mA}, f = 500\text{ MHz}$	—	14	—	dB
	$ S_{21e} ^2 (2)$	$V_{CE} = -5\text{ V}, I_C = -10\text{ mA}, f = 1\text{ GHz}$	—	9.5	—	
Noise figure	NF (1)	$V_{CE} = -5\text{ V}, I_C = -3\text{ mA}, f = 500\text{ MHz}$	—	2.5	—	dB
	NF (2)	$V_{CE} = -5\text{ V}, I_C = -3\text{ mA}, f = 1\text{ GHz}$	—	3.0	—	

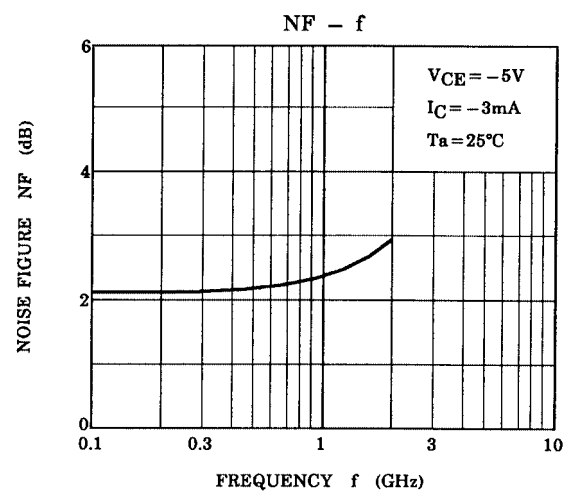
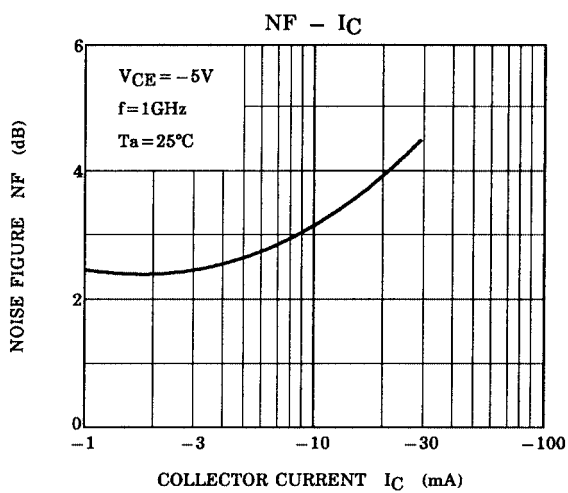
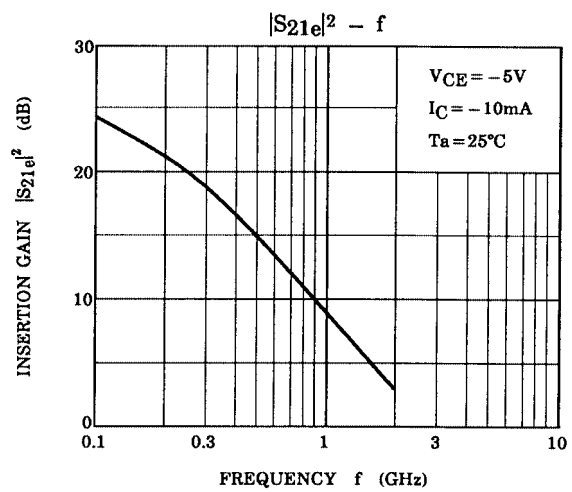
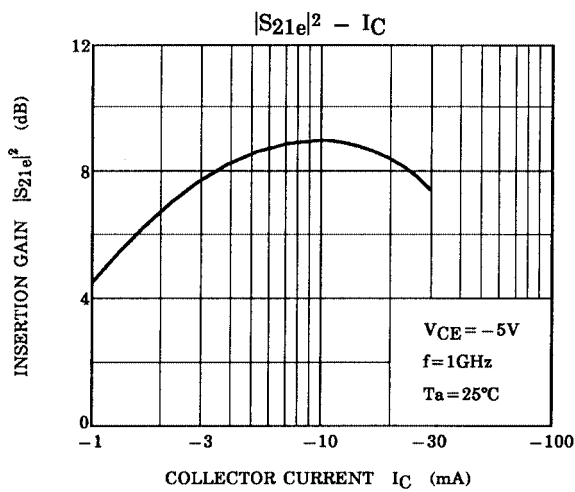
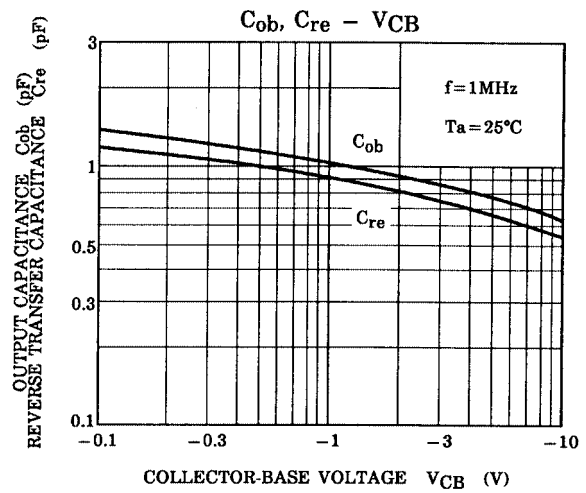
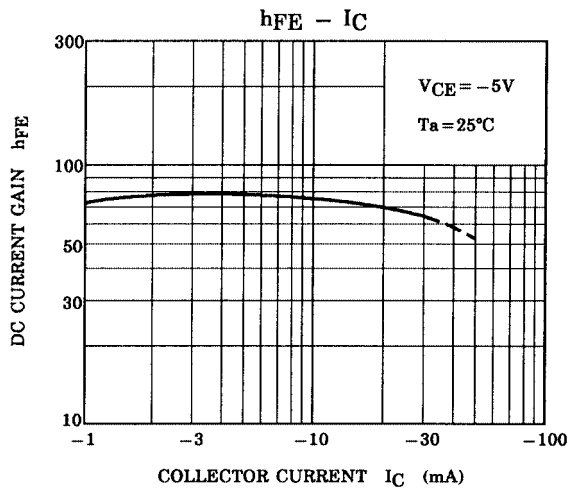
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = -5\text{ V}, I_E = 0$	—	—	-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -1\text{ V}, I_C = 0$	—	—	-0.1	μA
DC current gain	h_{FE}	$V_{CE} = -5\text{ V}, I_C = -10\text{ mA}$	20	—	—	
Output capacitance	C_{ob}	$V_{CB} = -5\text{ V}, I_E = 0, f = 1\text{ MHz}$ (Note)	—	0.75	—	pF
Reverse transfer capacitance	C_{re}		—	0.60	—	pF

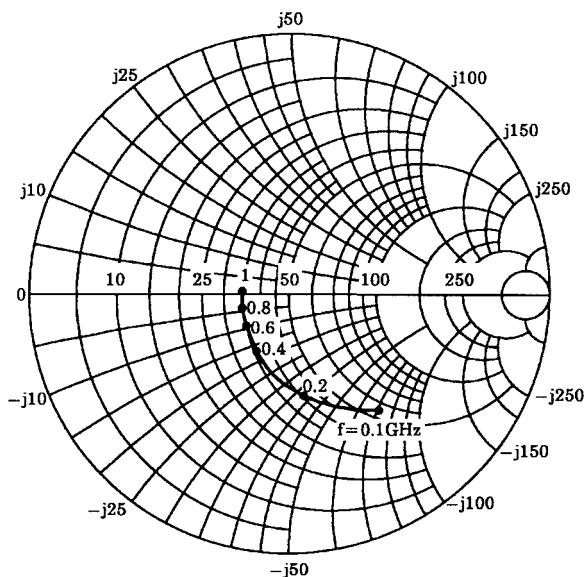
Note: C_{re} is measured by 3 terminal method with capacitance bridge.

Marking

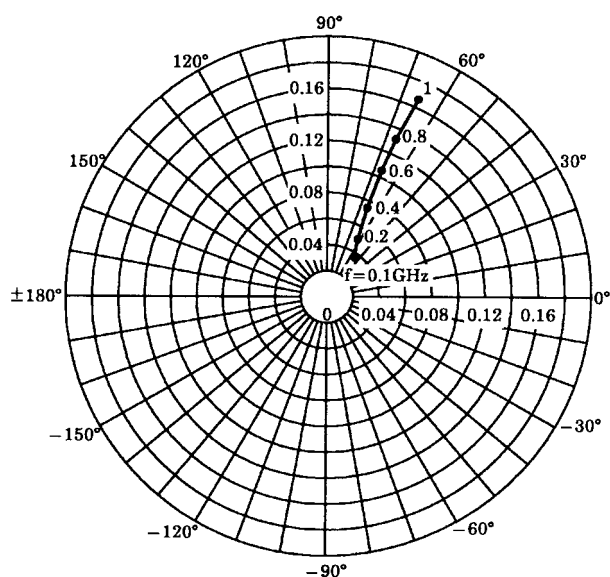




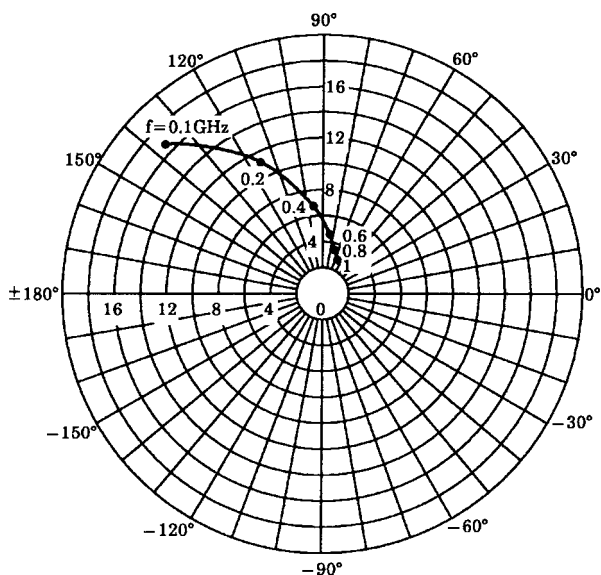
S_{11e}
 $V_{CE} = -5V$
 $I_C = -10mA$
 $T_a = 25^\circ C$
 (UNIT : Ω)



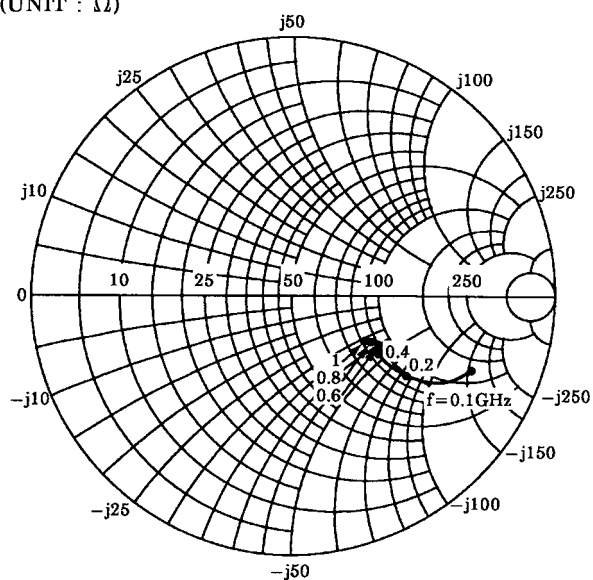
S_{12e}
 $V_{CE} = -5V$
 $I_C = -10mA$
 $T_a = 25^\circ C$



S_{21e}
 $V_{CE} = -5V$
 $I_C = -10mA$
 $T_a = 25^\circ C$



S_{22e}
 $V_{CE} = -5V$
 $I_C = -10mA$
 $T_a = 25^\circ C$
 (UNIT : Ω)



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