

2SC3099

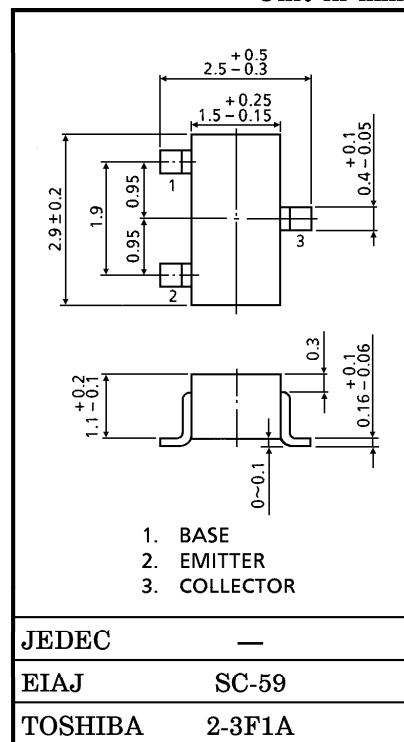
VHF ~ UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

- Low Noise Figure
- $NF = 1.7dB, |S_{21e}|^2 = 15dB (f = 500MHz)$
- $NF = 2.5dB, |S_{21e}|^2 = 9.5dB (f = 1GHz)$

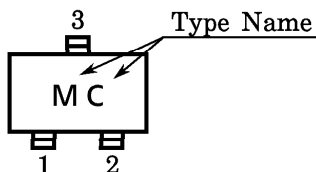
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CB0}	20	V
Collector-Emitter Voltage	V _{CEO}	20	V
Emitter-Base Voltage	V _{EB0}	3	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



Weight : 0.012g

Marking



MICROWAVE CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f _T	V _{CE} = 10V, I _C = 10mA	—	4.0	—	GHz
Insertion Gain	S _{21e} ² (1)	V _{CE} = 10V, I _C = 10mA, f = 500MHz	—	15.0	—	dB
	S _{21e} ² (2)	V _{CE} = 10V, I _C = 10mA, f = 1GHz	—	9.5	—	dB
Noise Figure	NF (1)	V _{CE} = 10V, I _C = 3mA, f = 500MHz	—	1.7	—	dB
	NF (2)	V _{CE} = 10V, I _C = 3mA, f = 1GHz	—	2.5	—	dB

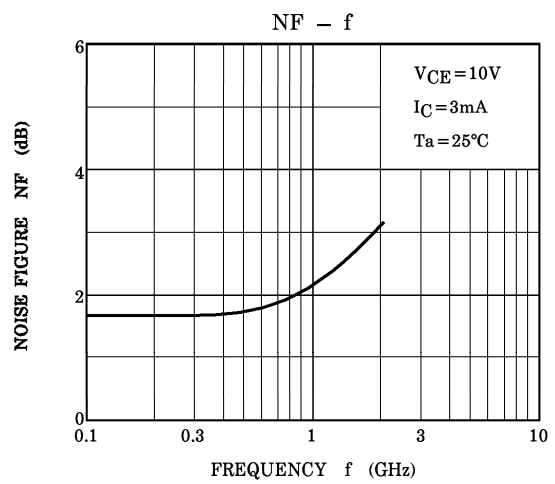
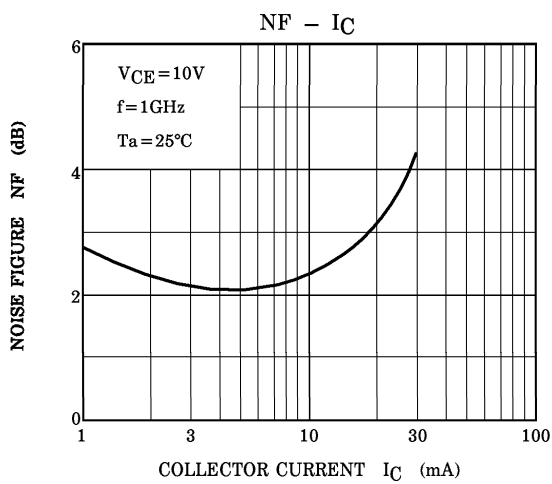
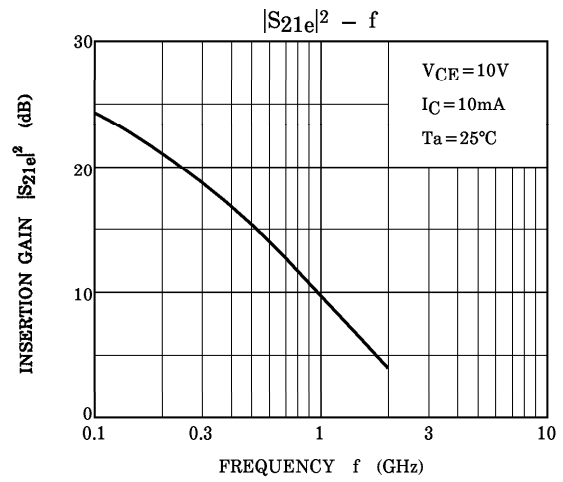
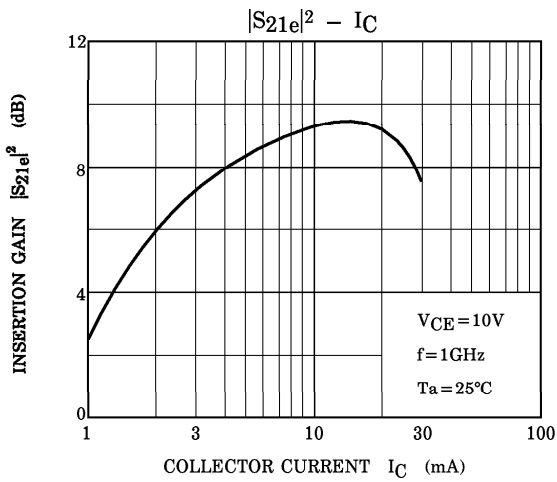
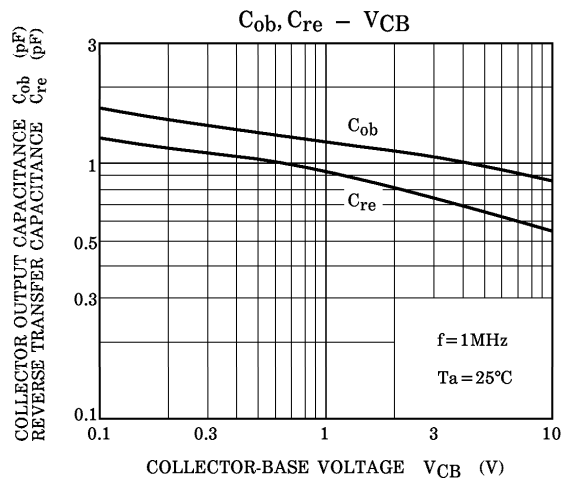
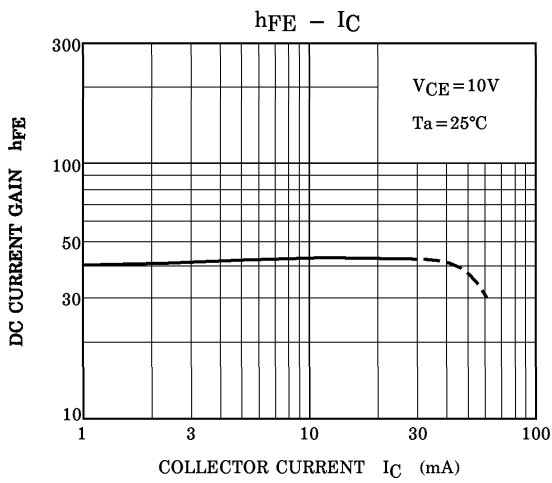
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I _{CB0}	V _{CB} = 10V, I _E = 0	—	—	0.1	μA
Emitter Cut-off Current	I _{EB0}	V _{EB} = 1V, I _C = 0	—	—	1.0	μA
DC Current Gain	h _{FE}	V _{CE} = 10V, I _C = 5mA	30	—	250	—
Output Capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz	—	0.9	—	pF
Reverse Transfer Capacitance	C _{re}	(Note)	—	0.6	—	pF

(Note) C_{re} is measured by 3 terminal method with Capacitance Bridge.

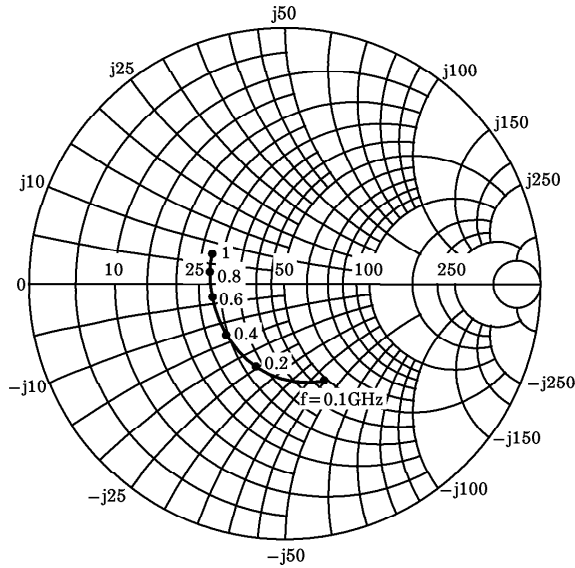
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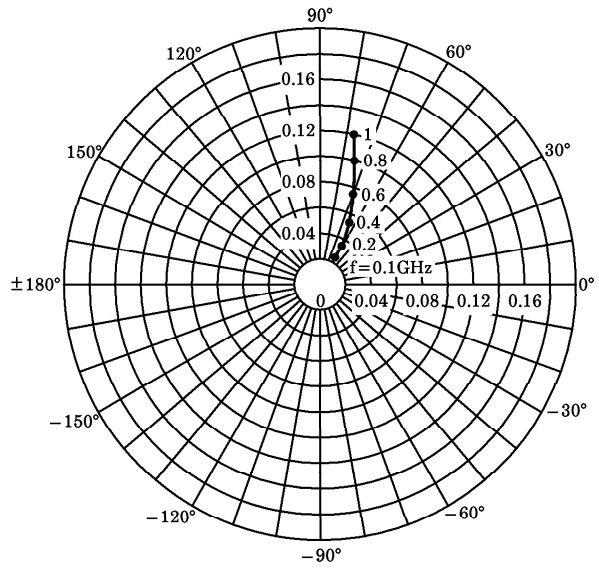


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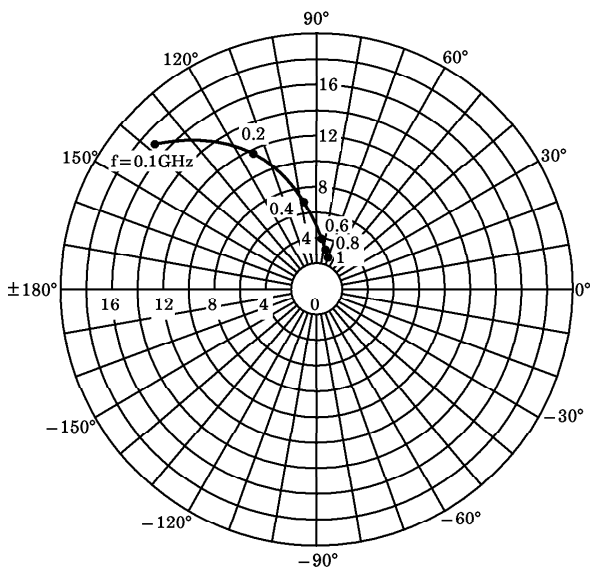
S11e
 $V_{CE} = 10V$
 $I_C = 10mA$
 $T_a = 25^\circ C$
 (UNIT : Ω)



S12e
 $V_{CE} = 10V$
 $I_C = 10mA$
 $T_a = 25^\circ C$



S21e
 $V_{CE} = 10V$
 $I_C = 10mA$
 $T_a = 25^\circ C$



S22e
 $V_{CE} = 10V$
 $I_C = 10mA$
 $T_a = 25^\circ C$
 (UNIT : Ω)

