

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL PLANAR TYPE

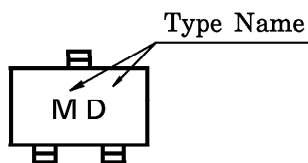
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- HIGH FREQUENCY AMPLIFIER AND SWITCHING APPLICATIONS.
- VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS.

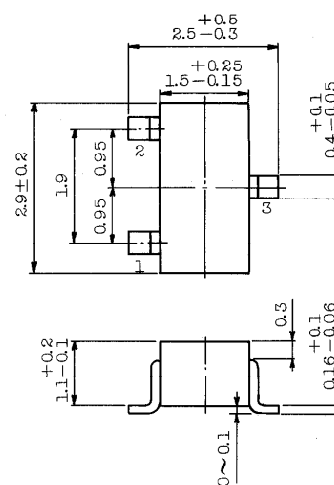
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	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

Marking



Unit in mm



1. EMITTER
2. BASE
S-MINI 3. COLLECTOR

JEDEC

—

EIAJ

SC-59

TOSHIBA

2-3F1A

MICROWAVE CHARACTERISTICS (Ta = 25°C)

Weight : 0.012g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f _T	V _{CE} = -5V, I _C = -10mA	—	4	—	GHz
Insertion Gain	S _{21e} ² (1)	V _{CE} = -5V, I _C = -10mA, f = 500MHz	—	14	—	dB
	S _{21e} ² (2)	V _{CE} = -5V, I _C = -10mA, f = 1GHz	—	9.5	—	dB
Noise Figure	NF (1)	V _{CE} = -5V, I _C = -3mA, f = 500MHz	—	2.5	—	dB
	NF (2)	V _{CE} = -5V, I _C = -3mA, f = 1GHz	—	3.0	—	dB

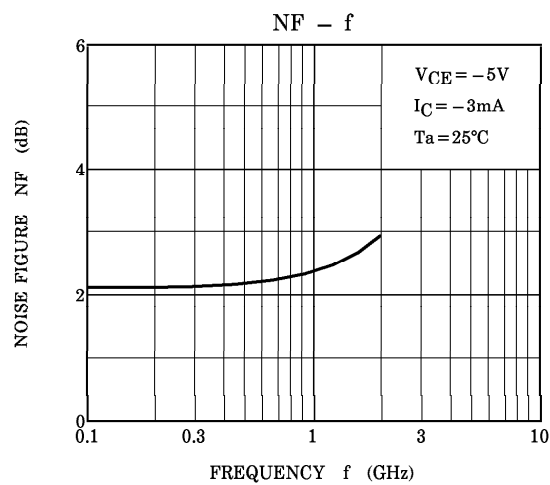
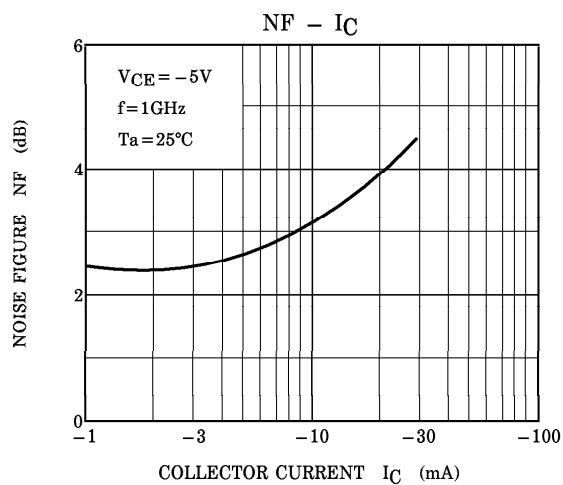
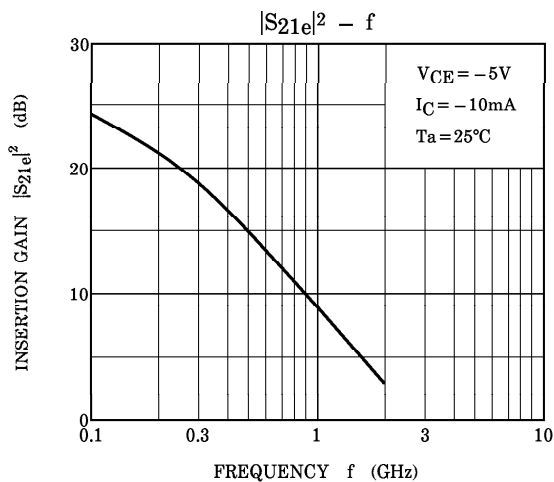
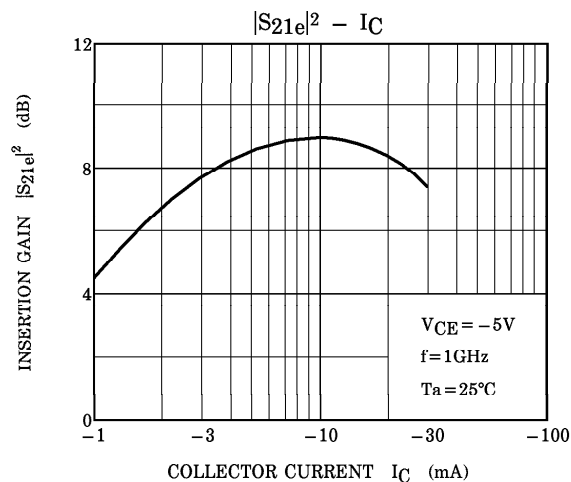
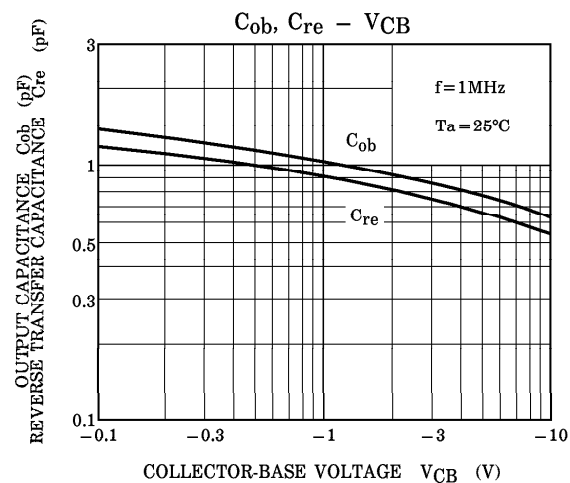
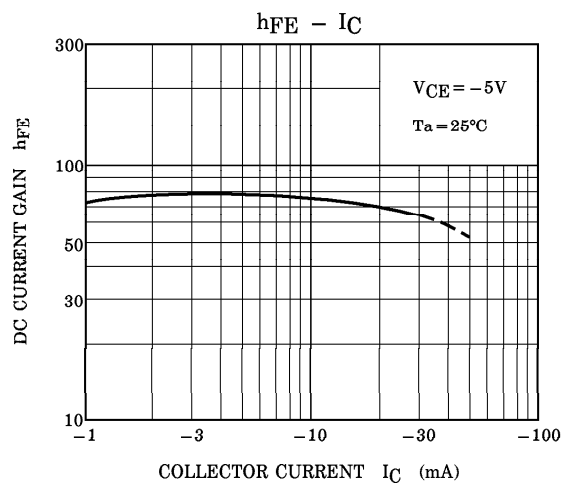
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I _{CBO}	V _{CB} = -5V, I _E = 0	—	—	-0.1	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} = -1V, I _C = 0	—	—	-0.1	μA
DC Current Gain	h _{FE}	V _{CE} = -5V, I _C = -10mA	20	—	—	—
Output Capacitance	C _{ob}	V _{CB} = -5V, I _E = 0, f = 1MHz (Note)	—	0.75	—	pF
Reserve Transfer Capacitance	C _{re}		—	0.60	—	pF

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

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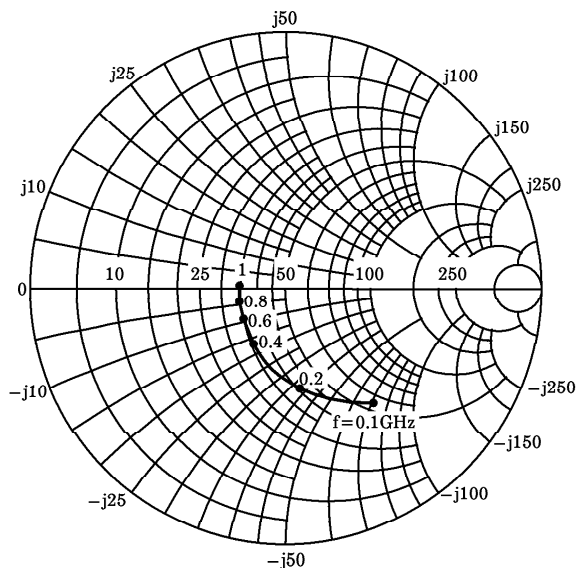
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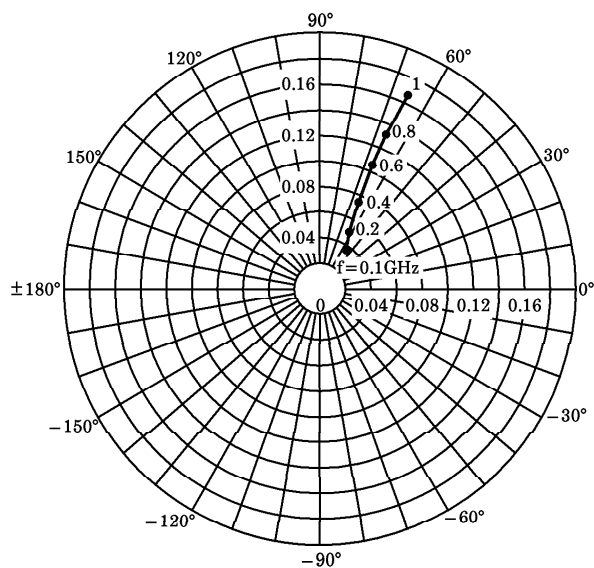
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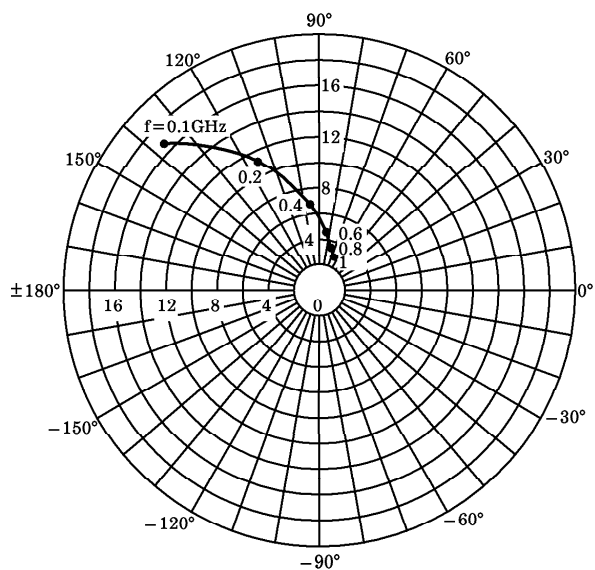
S_{11e}
 $V_{CE} = -5V$
 $I_C = -10mA$
 $T_a = 25^\circ C$
 (UNIT : Ω)



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)

