

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

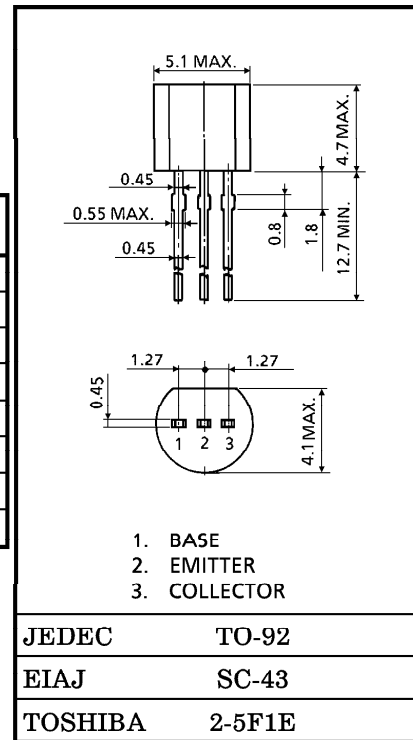
# 2SC2498

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATION

Unit in mm

**MAXIMUM RATINGS (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	30	V
Collector-Emitter Voltage	V <sub>CEO</sub>	20	V
Emitter-Base Voltage	V <sub>EB0</sub>	3	V
Collector Current	I <sub>C</sub>	50	mA
Base Current	I <sub>B</sub>	25	mA
Collector Power Dissipation	P <sub>C</sub>	300	mW
Junction Temperature	T <sub>j</sub>	125	°C
Storage Temperature Range	T <sub>stg</sub>	-55~125	°C



**MICROWAVE CHARACTERISTICS (Ta = 25°C)**

Weight : 0.21g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 10mA	—	3.5	—	GHz
Insertion Gain	S <sub>21e</sub>   <sup>2</sup> (1)	V <sub>CE</sub> = 10V, I <sub>C</sub> = 10mA, f = 500MHz	—	14.5	—	dB
	S <sub>21e</sub>   <sup>2</sup> (2)	V <sub>CE</sub> = 10V, I <sub>C</sub> = 10mA, f = 1GHz	—	9	—	
Noise Figure	NF (1)	V <sub>CE</sub> = 10V, I <sub>C</sub> = 5mA, f = 500MHz	—	2.5	—	dB
	NF (2)	V <sub>CE</sub> = 10V, I <sub>C</sub> = 5mA, f = 1GHz	—	4	—	

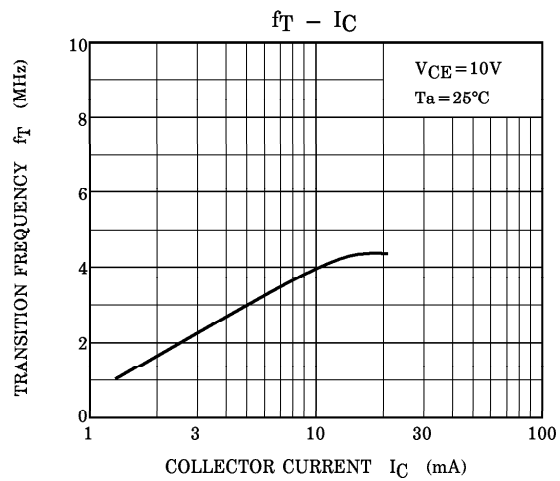
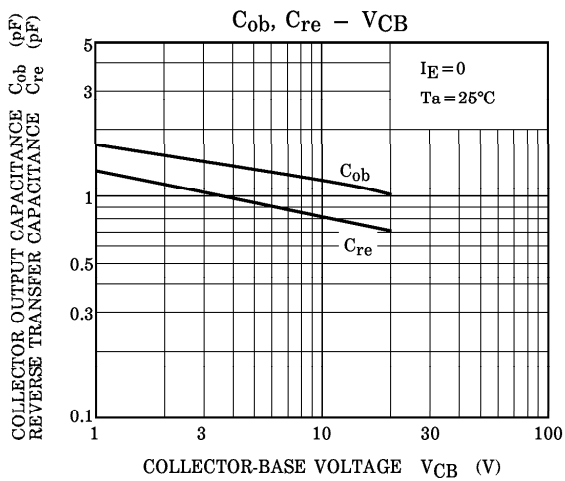
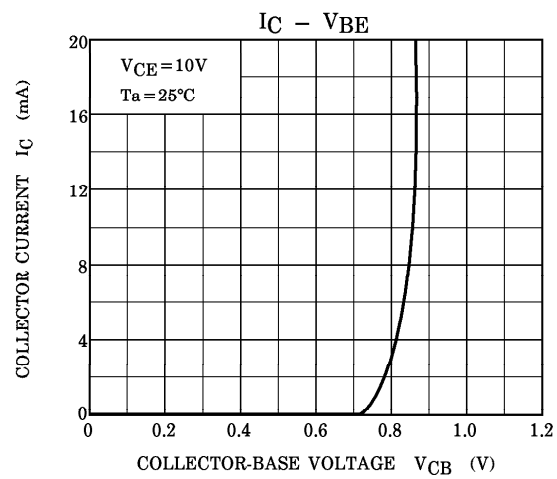
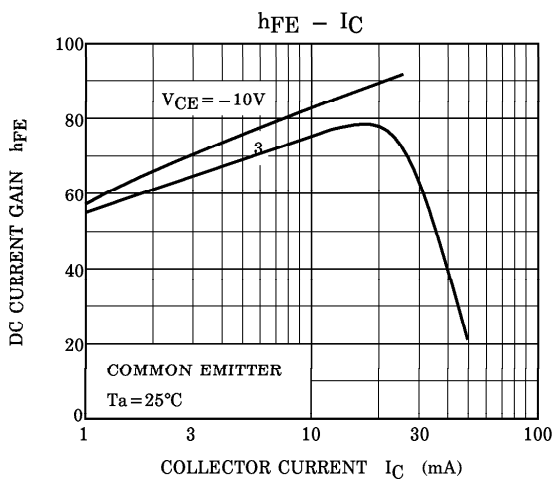
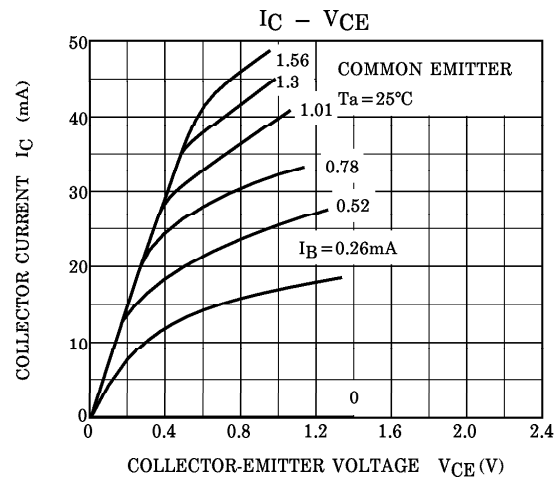
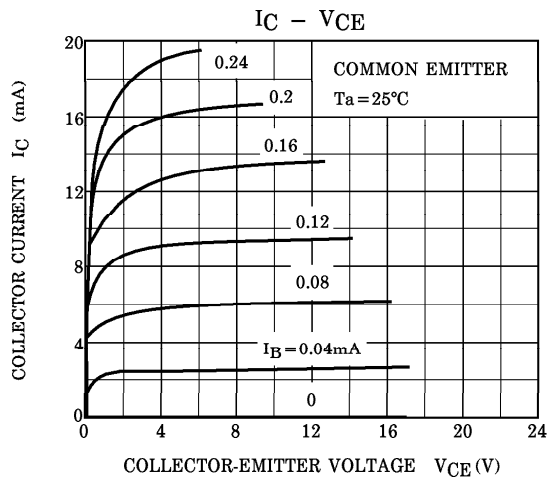
**MICROWAVE CHARACTERISTICS (Ta = 25°C)**

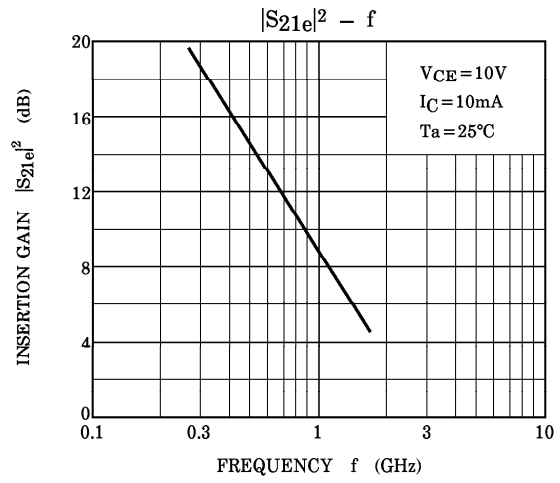
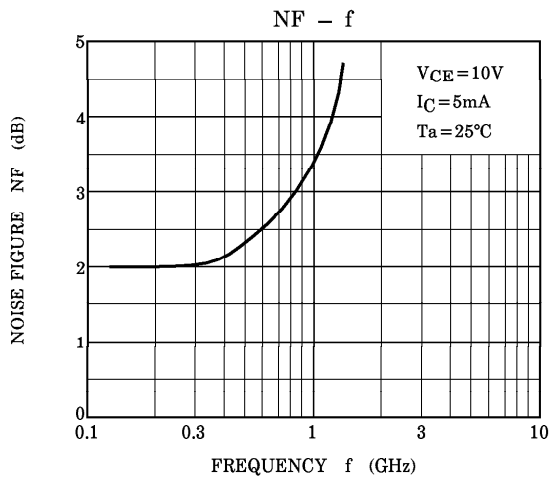
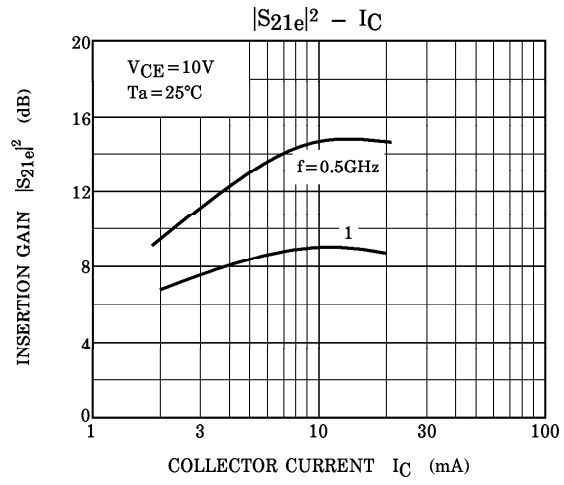
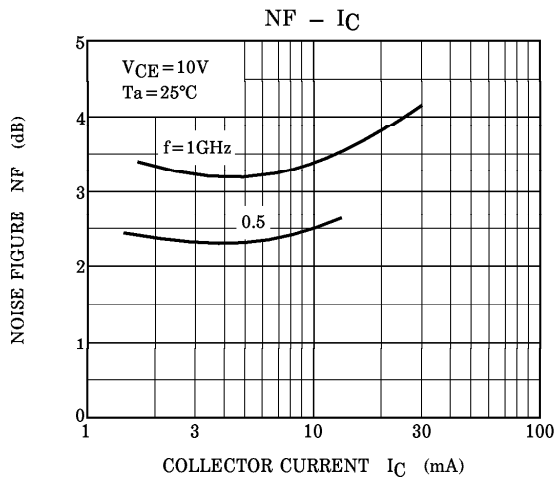
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0	—	—	1	μA
Emitter Cut-off Current	I <sub>EB0</sub>	V <sub>EB</sub> = 1V, I <sub>C</sub> = 0	—	—	1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 10mA	30	80	300	—
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz (Note)	—	1.15	—	pF
Reverse Transfer Capacitance	C <sub>re</sub>		—	0.75	—	

(Note) C<sub>re</sub> is measured by 3 terminal method with Capacitance Bridge.

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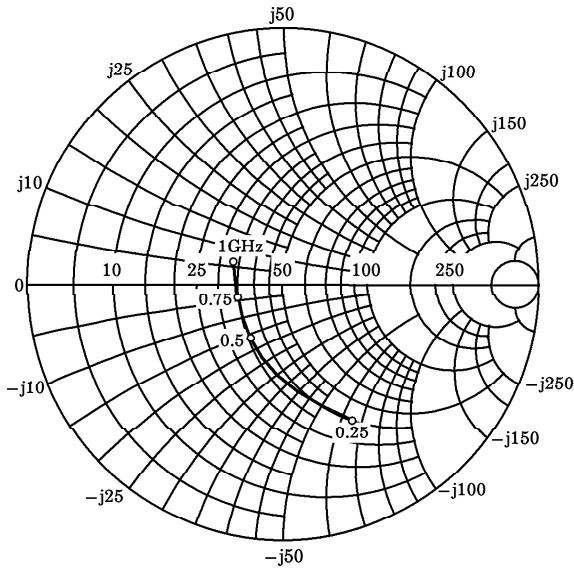
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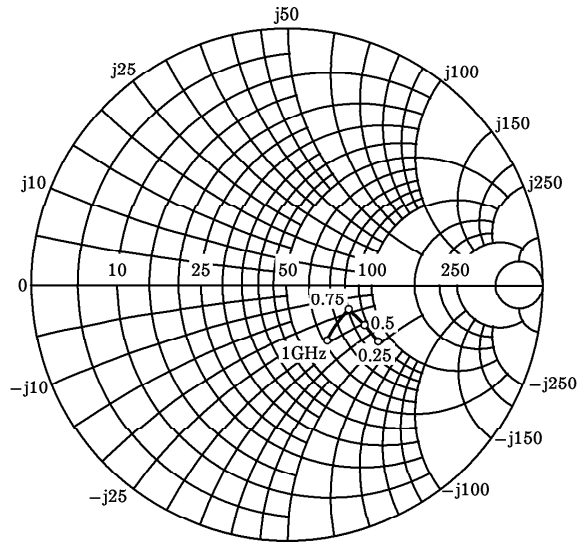


COMMON EMITTER SMALL SIGNAL S-PARAMETERS OF 2SC2498.

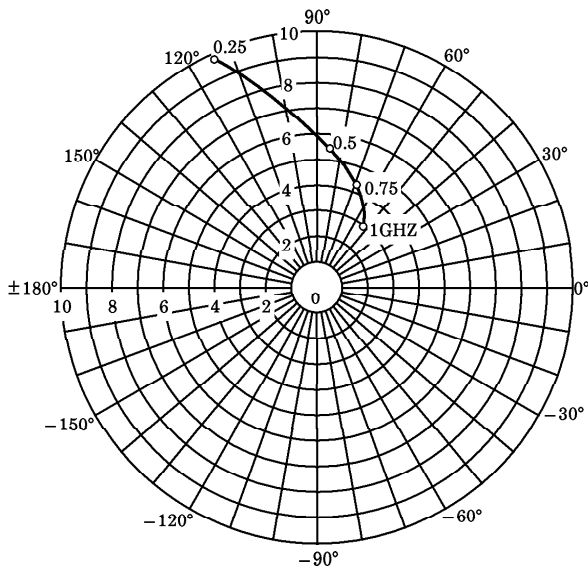
$V_{CE} = 10V, I_C = 10mA$



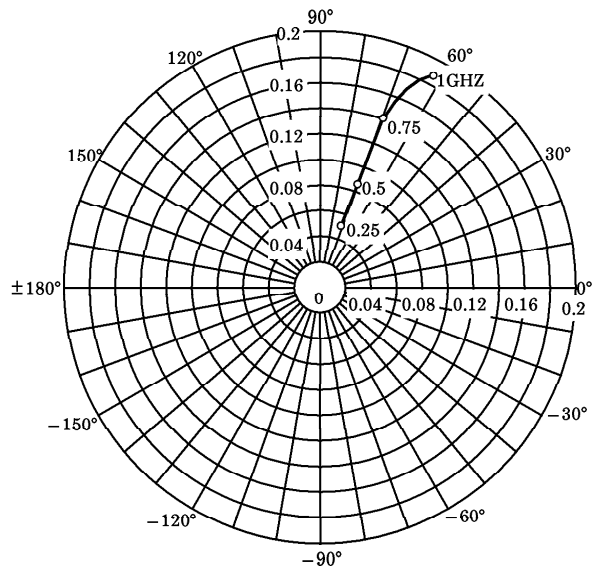
$S_{11e}$  (UNIT :  $\Omega$ )



$S_{22e}$  (UNIT :  $\Omega$ )



$S_{21e}$



$S_{12e}$