

TOSHIBA

2SC2644

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC2644

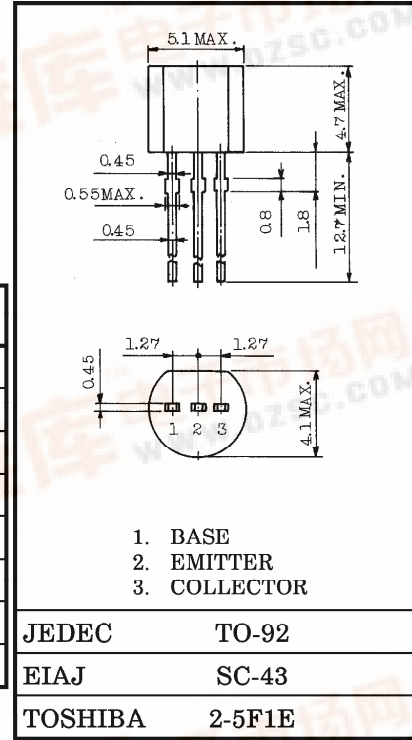
VHF~UHF BAND WIDEBAND AMPLIFIER APPLICATIONS.

Unit in mm

- High Gain
- Low IMD
- $f_T = 4\text{GHz}$ (Typ.)

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	25	V
Collector-Emitter Voltage	V_{CE0}	12	V
Emitter-Base Voltage	V_{EB0}	3.0	V
Collector Current	I_C	120	mA
Emitter Current	I_B	40	mA
Collector Power Dissipation	P_C	0.5	W
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~125	$^\circ\text{C}$



Weight : 0.21g

MICROWAVE CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f_T	$V_{CE} = 10\text{V}, I_C = 30\text{mA}$	—	4.0	—	GHz
Insertion Gain	$ S_{21e} ^2(1)$	$V_{CE} = 10\text{V}, I_C = 30\text{mA}, f = 0.5\text{GHz}$	—	14.0	—	dB
	$ S_{21e} ^2(2)$	$V_{CE} = 10\text{V}, I_C = 30\text{mA}, f = 1\text{GHz}$	—	8.5	—	dB
Noise Figure	NF(1)	$V_{CE} = 10\text{V}, I_C = 10\text{mA}, f = 0.5\text{GHz}$	—	2.3	—	dB
	NF(2)	$V_{CE} = 10\text{V}, I_C = 10\text{mA}, f = 1\text{GHz}$	—	3.0	—	dB

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

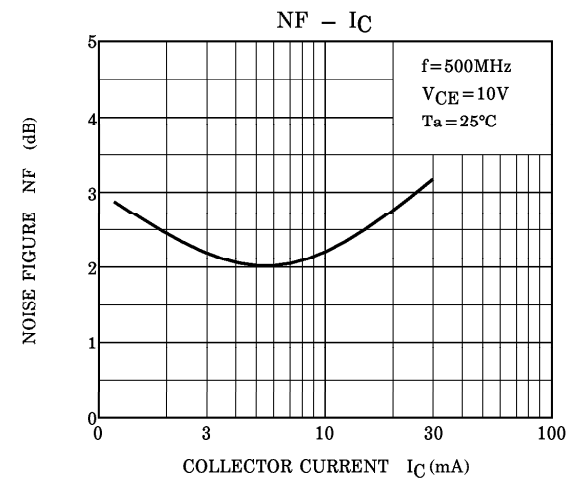
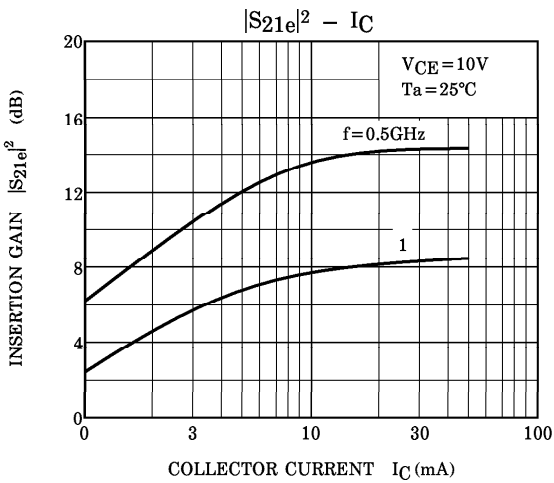
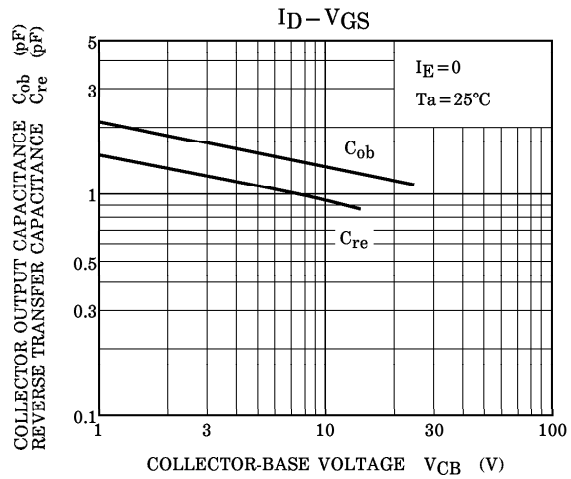
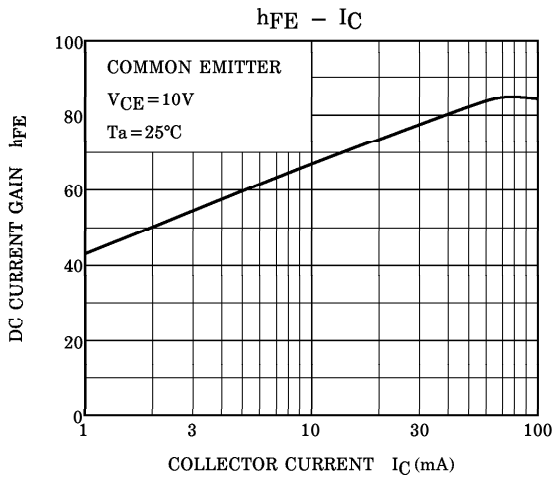
CHARACTERISTIC	SYMBOL	TEST COND'TION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 10\text{V}, I_E = 0$	—	—	1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1.0\text{V}, I_C = 0$	—	—	10	μA
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 50\text{mA}$	20	50	—	—
Collector Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0,$	—	1.6	—	pF
Reverse Transfer Capacitance	C_{re}	$f = 1\text{MHz}$ (Note)	—	1.1	—	pF

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

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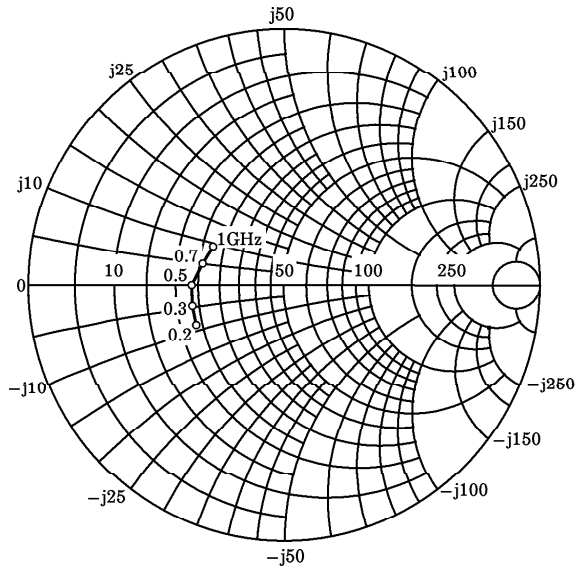


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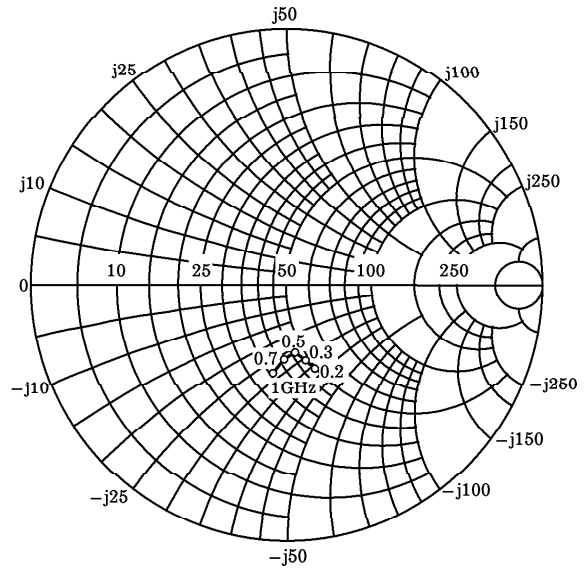
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COMMON EMITTER SMALL S-PARAMETERS OF 2SC2644

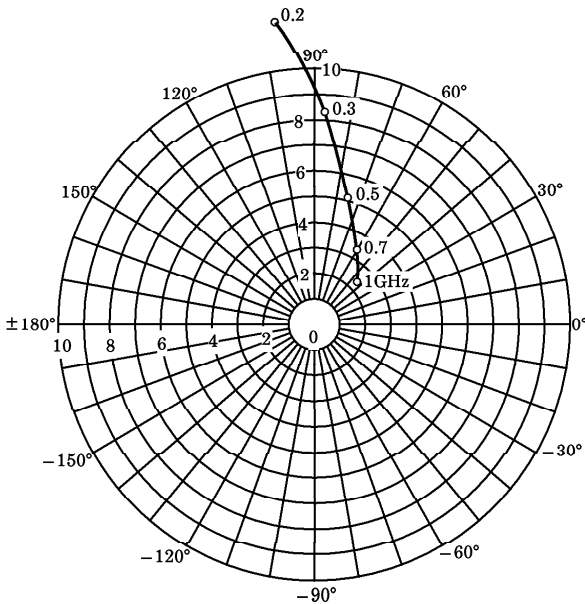
$V_{CE}=10V, I_C=30mA$



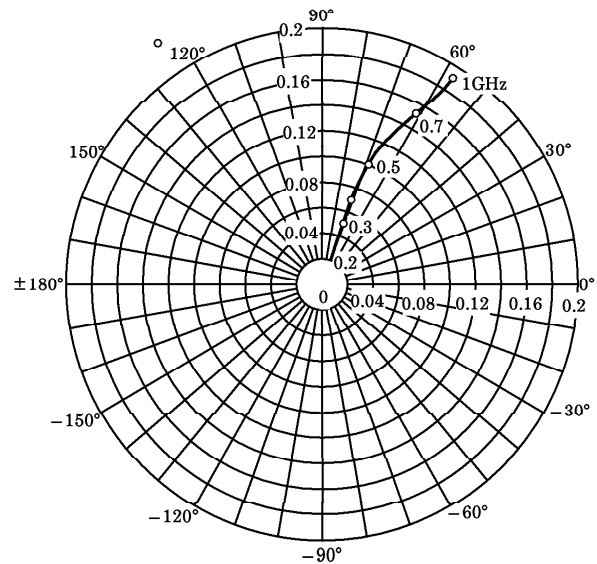
S_{11e} (UNIT : Ω)



S_{22e} (UNIT : Ω)



S_{21e}



S_{12e}