

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# 2SC2644

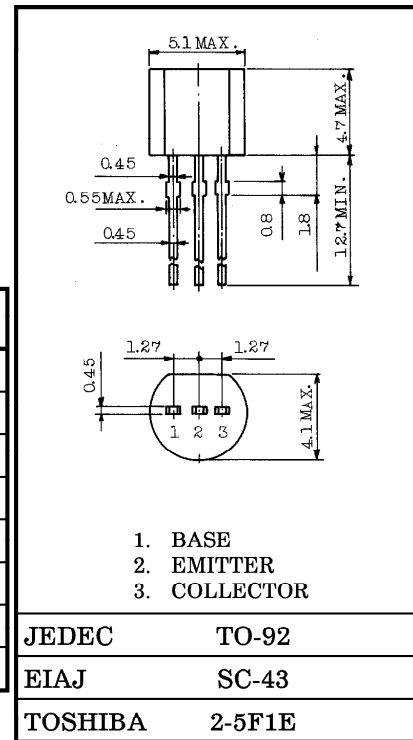
VHF~UHF BAND WIDEBAND AMPLIFIER APPLICATIONS.

Unit in mm

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

**MAXIMUM RATINGS (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CB0}$	25	V
Collector-Emitter Voltage	$V_{CEO}$	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	°C
Storage Temperature Range	$T_{stg}$	-55~125	°C



Weight : 0.21g

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

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

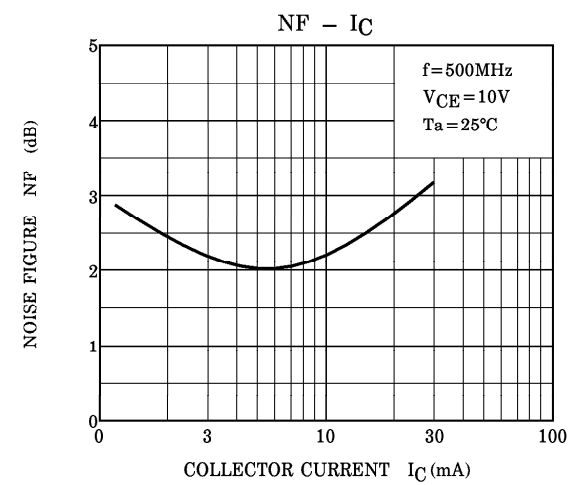
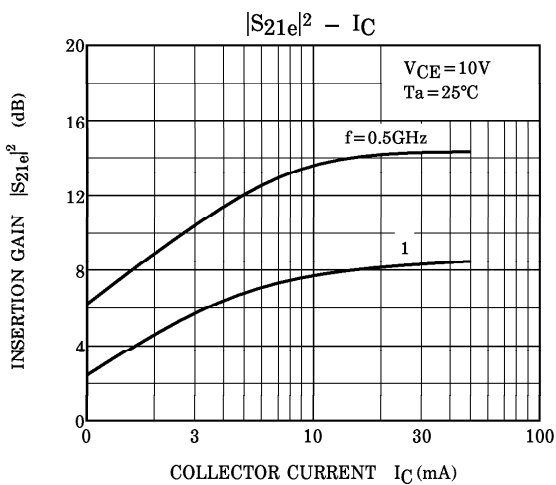
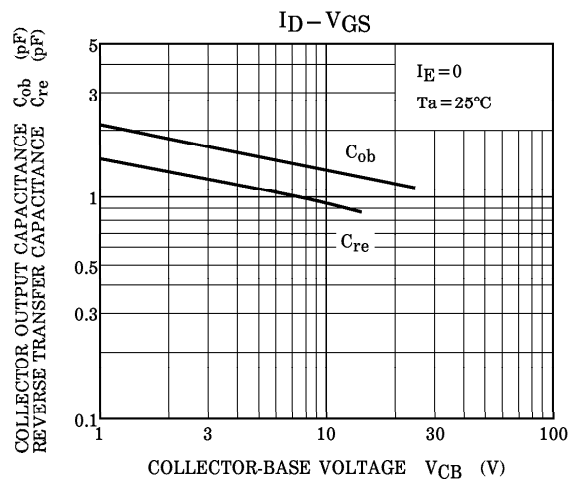
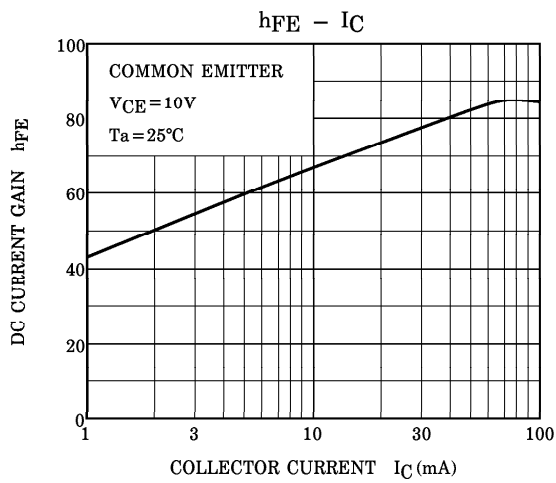
**ELECTRICAL CHARACTERISTICS (Ta = 25°C)**

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

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

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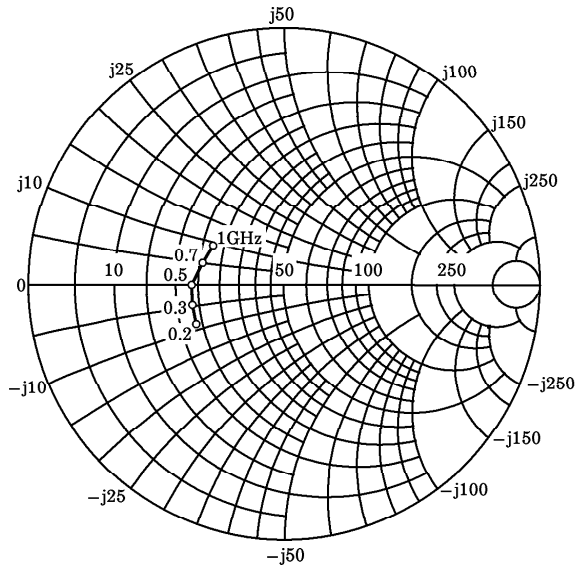
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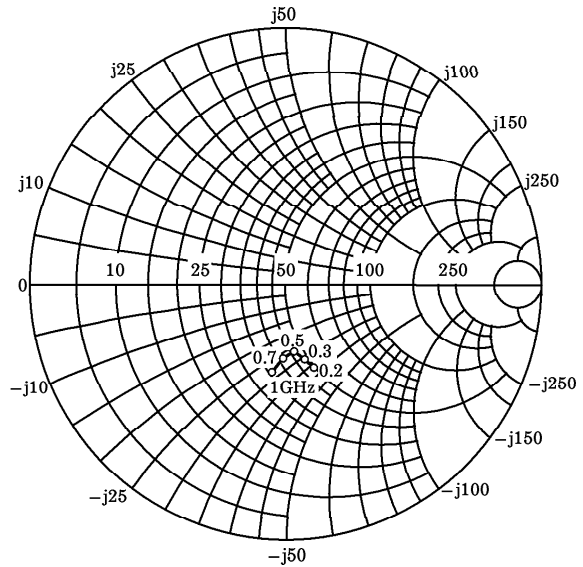
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COMMON EMITTER SMALL S-PARAMETERS OF 2SC2644

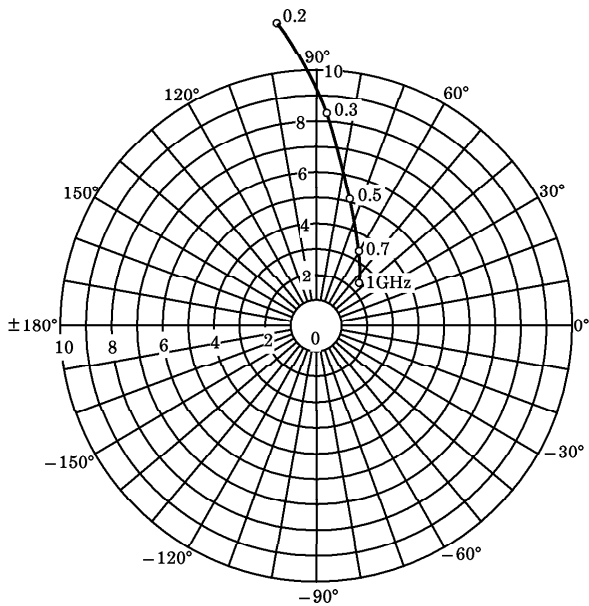
$V_{CE} = 10V, I_C = 30mA$



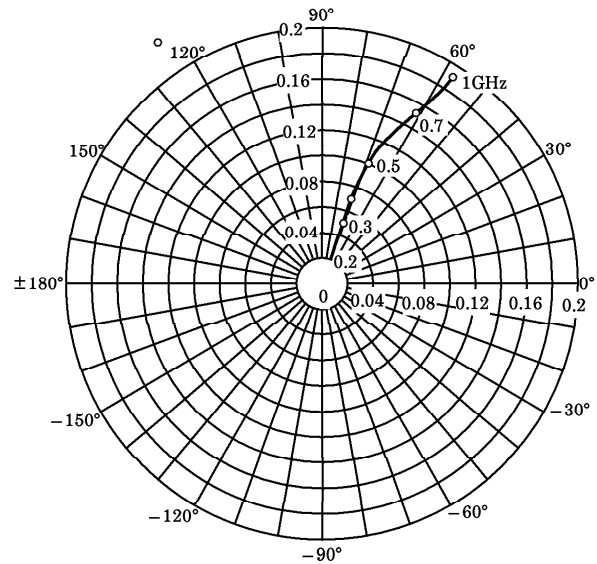
$S_{11e}$  (UNIT :  $\Omega$ )



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



$S_{21e}$



$S_{12e}$