

9097250 TOSHIBA (DISCRETE/OPTO)

2SC1559マイクロ波トランジスタ
低雑音増幅/超高速スイッチング用

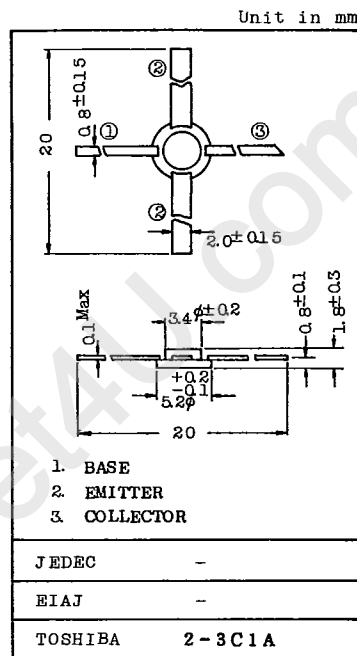
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- UHF~Cバンド低雑音増幅用
- 超高速スイッチング用 (CML)
- UHF~C Band Low Noise Amplifier Applications.
- High Speed Switching Applications.
- $f_T = 7\text{GHz}$
- $G_{pe} = 10\text{dB}$ ($f = 2\text{GHz}$)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
コレクタ・ベース間電圧	V_{CBO}	15	V
コレクタ・エミッタ間電圧	V_{CEO}	8	V
エミッタ・ベース間電圧	V_{EBO}	3.0	V
コレクタ電流	I_C	80	mA
エミッタ電流	I_E	-80	mA
コレクタ損失	P_C	400	mW
接合温度	T_j	175	$^\circ\text{C}$
保存温度	T_{stg}	-65~175	$^\circ\text{C}$

高周波特性 RF CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
トランジション周波数	f_T	$V_{CE} = 5\text{V}$, $I_C = 30\text{mA}$	6.0	7.0	—	GHz
電力利得	G_{pe}	$V_{CE} = 5\text{V}$ $I_C = 30\text{mA}$, $f = 2\text{GHz}$	8.5	10.0	—	dB
雑音指数	NF	$V_{CE} = 5\text{V}$ $I_{CE} = 10\text{mA}$, $f = 2\text{GHz}$	—	3.5	4.5	dB
最大発振周波数	f_{Max}	$V_{CE} = 5\text{V}$, $I_{CE} = 30\text{mA}$	—	8.0	—	GHz

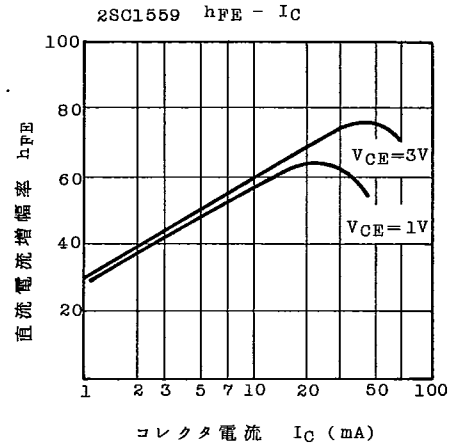
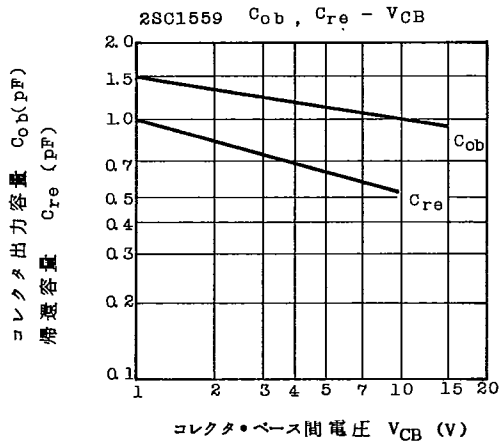
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電気的特性 ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
コレクタしや断電流	I_{CBO}	$V_{CB} = 10V, I_E = 0$	-	-	0.1	μA
エミッタしや断電流	I_{EBO}	$V_{EB} = 2.0V, I_C = 0$	-	-	1.0	μA
直流電流増幅率	h_{FE}	$V_{CE} = 3V, I_C = 50mA$	30	75	-	
コレクタ・エミッタ間飽和電圧	$V_{CE(sat)}$	$I_C = 30mA, I_B = 3mA$	-	0.25	-	V
ベース・エミッタ間飽和電圧	$V_{BE(sat)}$	$I_C = 30mA, I_B = 3mA$	-	0.87	-	V
コレクタ出力容量	C_{ob}	$V_{CB} = 5V, I_E = 0$	-	1.2	1.5	pF
帰還容量	C_{re}	$f = 1MHz$ (Note 1)	-	0.65	-	pF
入力容量	C_{ib}	$V_{EB} = C, I_C = 0, f = 1MHz$	-	1.7	-	pF



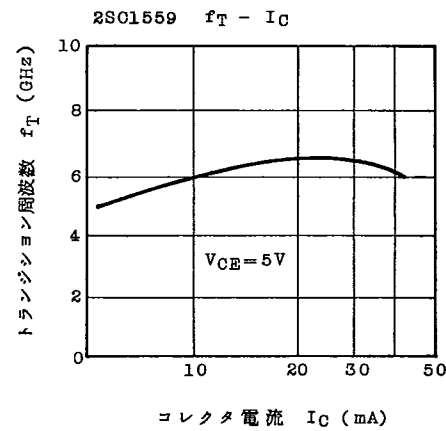
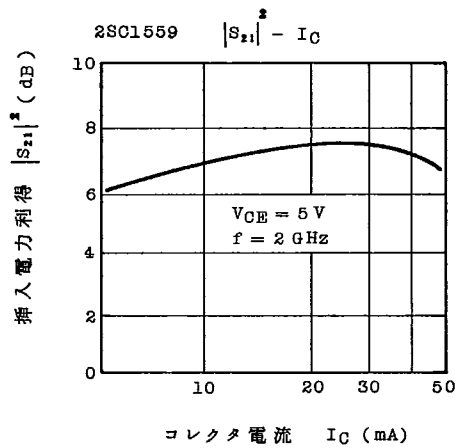
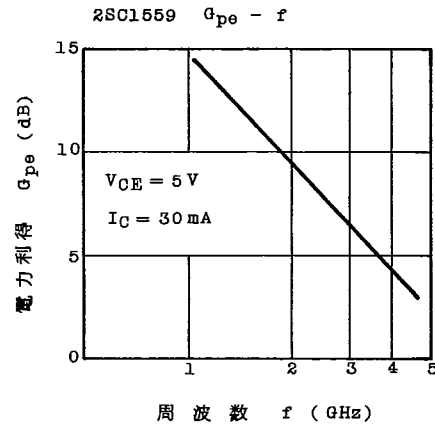
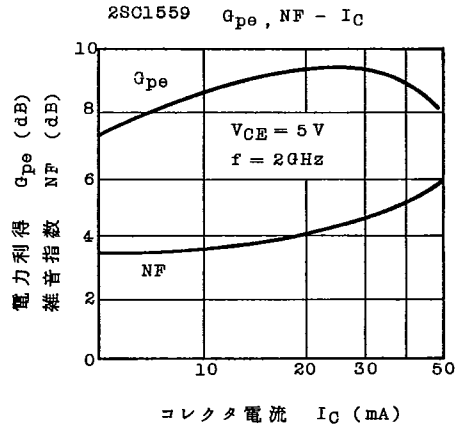
(Note 1): C_{re} は Boonton Electronics Corp. 製 75D Direct Capacitance Bridge
によつて三端子法で測定。

C_{re} is measured by 3 terminal method with Boonton Electronics
Corporations 75D direct capacitance bridge.

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9097250 TOSHIBA (DISCRETE/OPTO)

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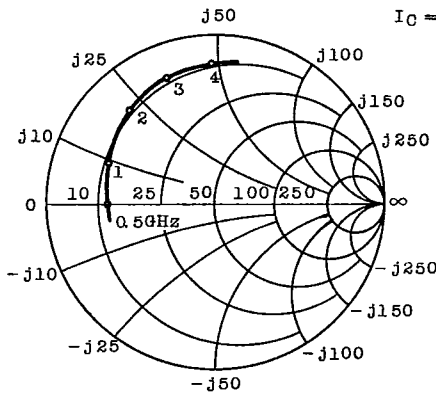
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2SC1559 のエミッタ接地小信号 S パラメータ

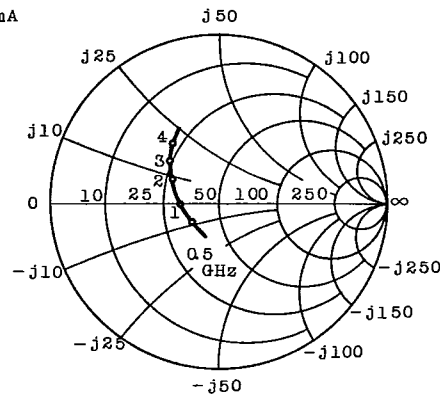
COMMON EMITTER SMALL SIGNAL S-PARAMETERS OF 2SC1559

$V_{CB} = 5V$

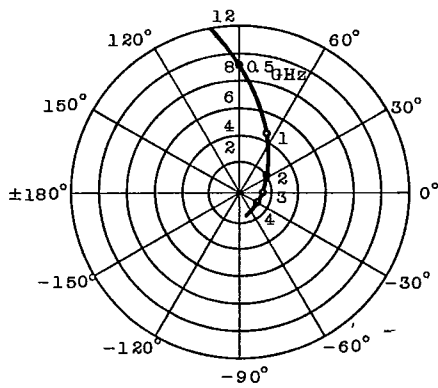
$I_C = 30mA$



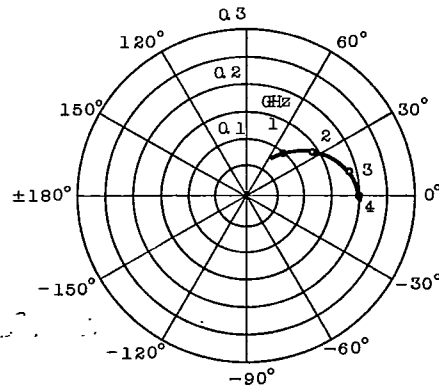
S11
(Unit in Ω)



S22
(Unit in Δ)



S21



S12

0185

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