

2SC1554
2SC1555

9097250 TOSHIBA (DISCRETE/OPTO)

マイクロ波トランジスタ
中電力増幅/発振用

39C 00479 D T-31-23

- UHF～Sバンド中電力増幅用
- UHF～Sバンド発振用
- UHF～S Band Medium Power Amplifier Applications
- UHF～S Band Oscillator Applications
- ・ $P_{OUT} = 22\text{dBm}$ ($f=2\text{GHz}$)
- ・ $G_{pe} = 7\text{dB}$ ($f=2\text{GHz}$)

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}	30	V
コレクタ・エミッタ間電圧	V_{CEO}	15	V
エミッタ・ベース間電圧	V_{EBO}	3.0	V
コレクタ電流	I_C	120	mA
エミッタ電流	I_E	-120	mA
コレクタ損失($T_a=25^\circ\text{C}$)	P_C	0.6	W
コレクタ損失($T_c=25^\circ\text{C}$)	P_C	1.2	W
接合温度	T_j	175	$^\circ\text{C}$
保存温度	T_{stg}	-65~175	$^\circ\text{C}$

外形図
Outline

Refer to Page 149

TYPE	2SC1554	2SC1555
JEDEC	—	—
EIAJ	—	—
TOSHIBA	2-3C1A	2-3D1A

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

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
雑音指数 Fig. 1	NF	$V_{CE}=10\text{V}, I_C=5\text{mA}$ $f=1\text{GHz}$	—	3.0	4.0	dB
		$V_{CE}=10\text{V}, I_C=5\text{mA}$ $f=2\text{GHz}$	—	6.0	7.0	dB
電力利得 Fig. 1	G_{pe}	$V_{CE}=10\text{V}, I_C=30\text{mA}$ $f=1\text{GHz}$	11.5	12.5	—	dB
		$V_{CE}=10\text{V}, I_C=30\text{mA}$ $f=2\text{GHz}$	6.0	7.0	—	dB
トランジション周波数	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}$	3.0	4.0	—	GHz
最大発振周波数	f_{Max}	$V_{CE}=10\text{V}, I_C=30\text{mA}$	4.0	5.0	—	GHz
飽和出力	P_o	$V_{CE}=10\text{V}, I_C=50\text{mA}$ $f=2\text{GHz}$ (Note 1)	—	220	—	dBm

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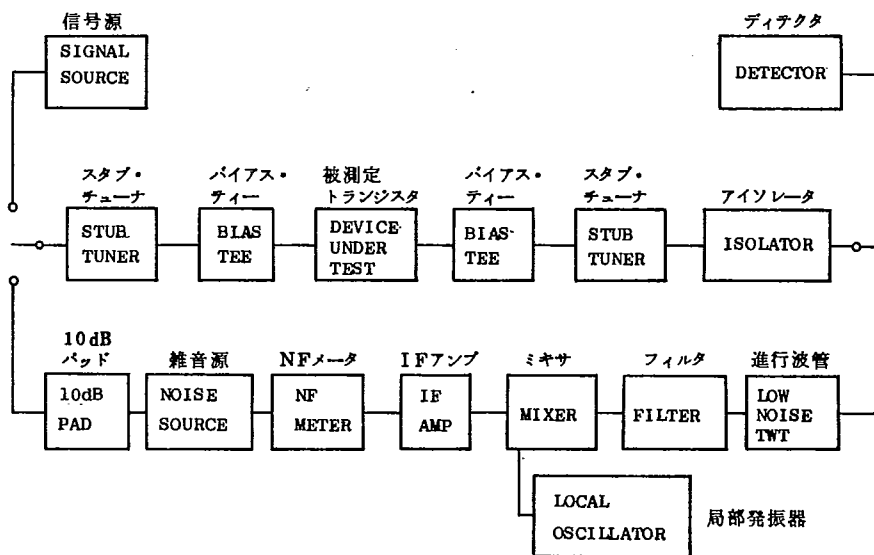
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9097250 TOSHIBA (DISCRETE/OPTO) 39C 00480 D T-31-23	<h1 style="margin: 0;">2SC1554</h1> <h1 style="margin: 0;">2SC1555</h1>
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電気的特性 ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
コレクタしゅ断電流	I _{CB0}	V _{CB} = 10V, I _E = 0	—	—	1.0	μA
エミッタしゅ断電流	I _{EB0}	V _{EB} = 20V, I _C = 0	—	—	10	μA
直流電流増幅率	h _{FE}	V _{CE} = 5V, I _C = 50mA	—	100	—	
コレクタ出力容量	C _{ob}	V _{CB} = 10V, I _E = 0	—	1.7	2.3	pF
帰還容量	C _{re}	V _{CB} = 10V, I _E = 0 (Note 2)	—	1.0	—	pF

Fig 1 雑音指数および電力利得測定ブロックダイアグラム
 NOISE FIGURE AND POWER GAIN TEST SET BLOCK DIAGRAM



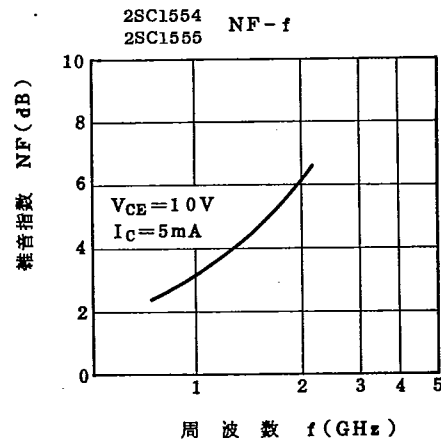
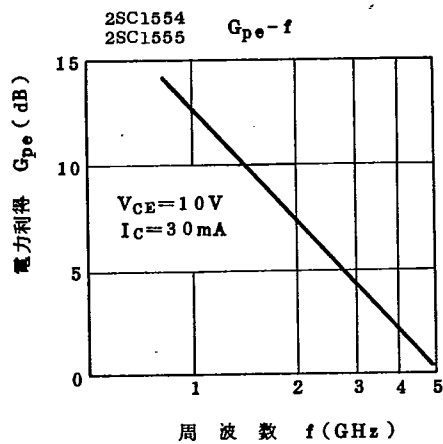
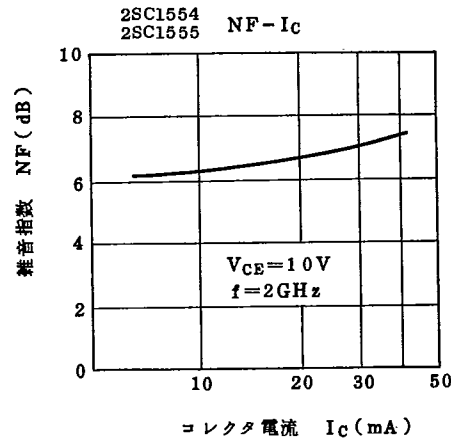
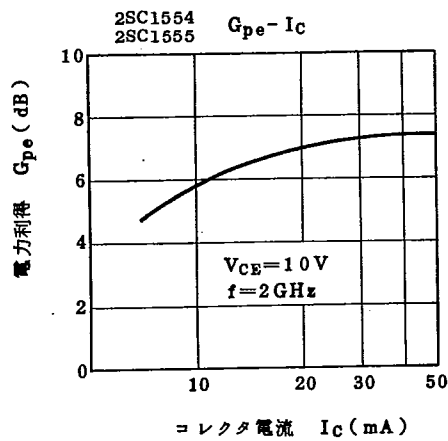
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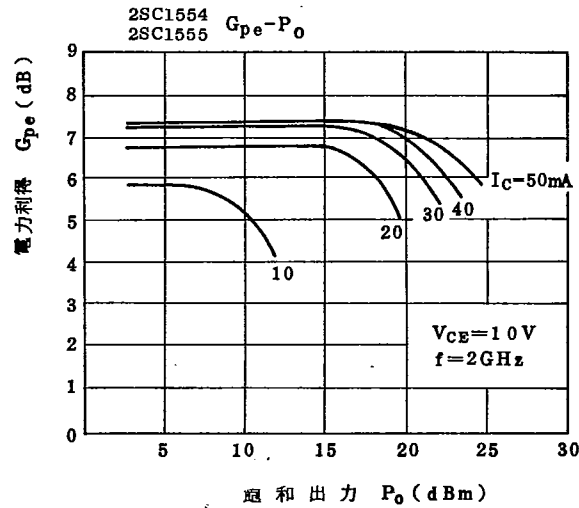
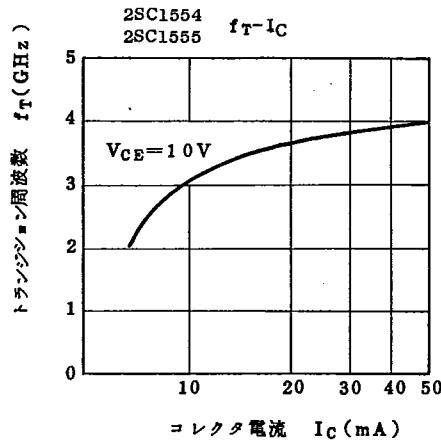


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- Note 1. 電力利得が 1 dB 低下する点での出力
 1dB gain compression.
2. C_{re} は Boonton Electronics Corp. 製 75D Direct Capacitance Bridge
 によって三端子法で測定
 C_{re} is measured by 3 terminal method with Boonton Electronics
 Corporations 75D direct capacitance bridge.

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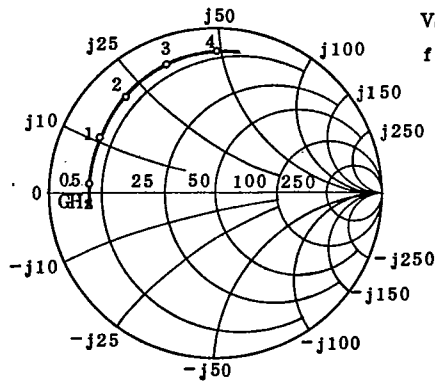
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2SC1554 のエミッタ接地, 小信号 S パラメータ
2SC1555

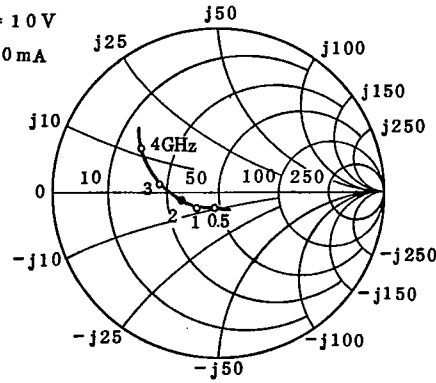
COMMON EMITTER SMALL SIGNAL S-PARAMETERS OF 2SC1554 AND 2SC1555



S 11

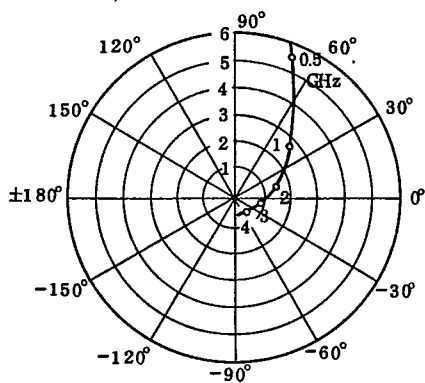
(Unit in Ω)

$V_{CE} = 10 V$
 $f = 20 mA$

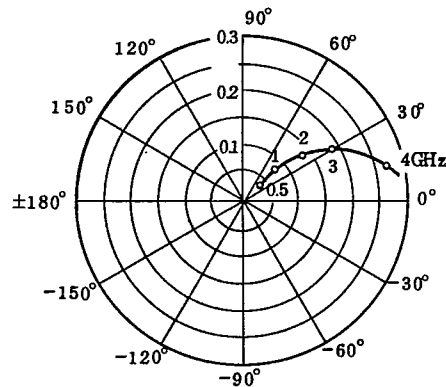


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(Unit in Ω)



S 21



S 12

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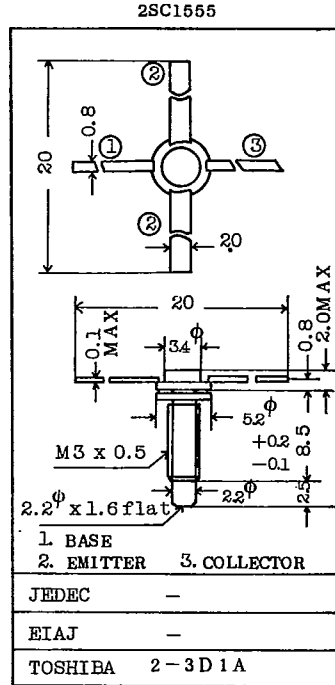
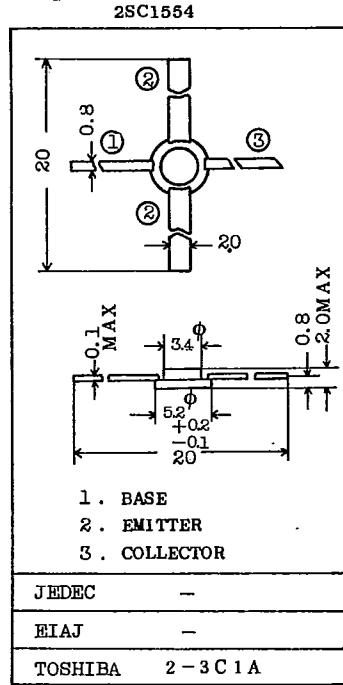
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外形图
OUTLINE

Unit in mm



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