

**2SC1556**

9097250 TOSHIBA (DISCRETE/OPTO)

マイクロ波トランジスタ

中電力増幅/発振用

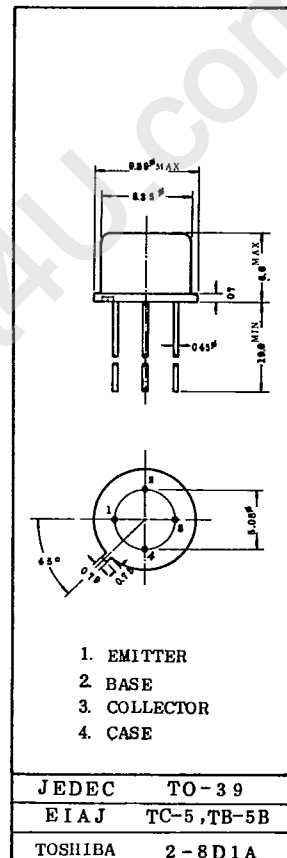
39C 00485 0 T-31-23

- UHF 帯中電力増幅用
- UHF 帯発振用
- UHF Band Medium Power Amplifier Applications
- UHF Band Oscillator Applications
- $G_{pe} = 9 \text{ dB}$  ( $f = 1 \text{ GHz}$ )
- $P_o = 22 \text{ dBm}$  ( $f = 1 \text{ GHz}$ )
- $f_T = 3.5 \text{ GHz}$

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	$^\circ\text{C}$

Unit in mm



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9097250 TOSHIBA (DISCRETE/OPTO)

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高周波特性 RF CHARACTERISTICS ( Ta = 25 °C )

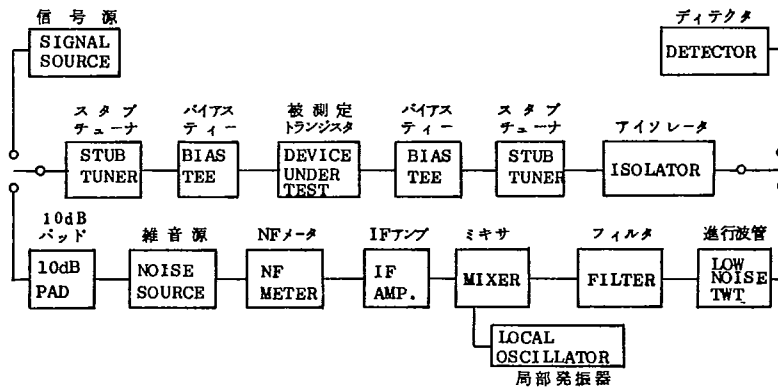
CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
電力利得 Fig 1	G <sub>pe</sub>	V <sub>CE</sub> =10 V, I <sub>C</sub> =30 mA, f=0.5GHz	13	14	—	dB
		V <sub>CE</sub> =10 V, I <sub>C</sub> =30 mA, f=1 GHz	8	9	—	dB
挿入電力利得	S <sub>21</sub>   <sup>2</sup>	V <sub>CE</sub> =10 V, I <sub>C</sub> =30 mA, f=0.5GHz	11	12	—	dB
		V <sub>CE</sub> =10 V, I <sub>C</sub> =30 mA, f=1 GHz	6	7	—	dB
雑音指数 Fig 1	NF	V <sub>CE</sub> =10 V, I <sub>C</sub> =10 mA, f=0.5GHz	—	2	—	dB
		V <sub>CE</sub> =10 V, I <sub>C</sub> =10 mA, f=1 GHz	—	3	—	dB
トランジション周波数	f <sub>T</sub>	V <sub>CE</sub> =10 V, I <sub>C</sub> =30 mA	—	3.5	—	GHz
最大発振周波数	f <sub>max</sub>	V <sub>CE</sub> =10 V, I <sub>C</sub> =30 mA	—	4.0	—	GHz
飽和出力	P <sub>O</sub>	V <sub>CE</sub> =10 V, I <sub>C</sub> =50 mA, f=1 GHz Note 1	—	22	—	dBm

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

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
コレクタシャ断電流	I <sub>CB0</sub>	V <sub>CB</sub> =10 V, I <sub>E</sub> =0 mA	—	—	1.0	μA
エミッタシャ断電流	I <sub>EB0</sub>	V <sub>EB</sub> =2.0 V, I <sub>C</sub> =0 mA	—	—	1.0	μA
直流電流増幅率	h <sub>FE</sub>	V <sub>CE</sub> =5 V, I <sub>C</sub> =50 mA	—	100	—	
コレクタ出力容量	C <sub>ob</sub>	V <sub>CB</sub> =10 V, I <sub>E</sub> =0 mA	—	2.0	2.3	pF
掃選容量	C <sub>re</sub>	V <sub>CB</sub> =10 V, I <sub>E</sub> =0 mA (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

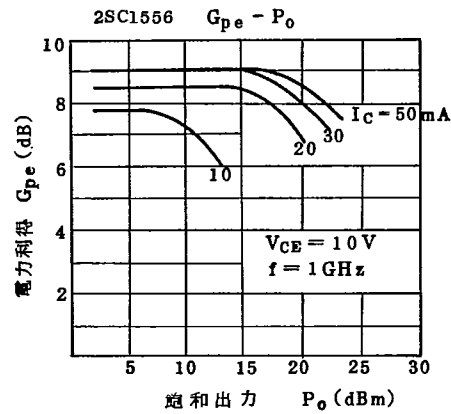
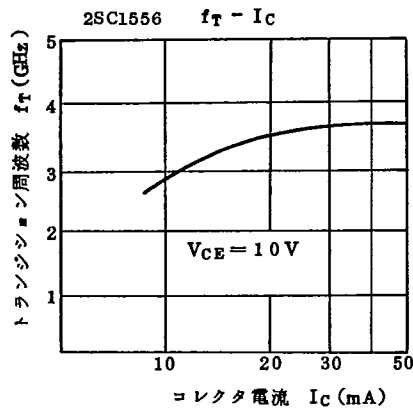
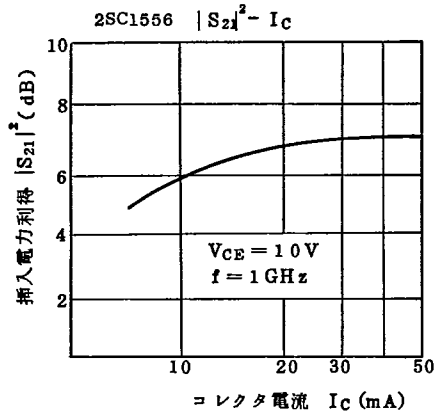
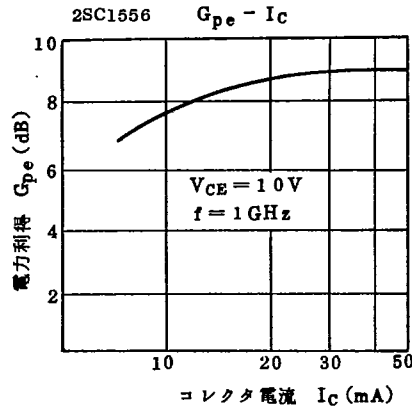


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SC --- 21556-2X

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Note 1. 電力利得が 1 dB 低下する点での出力  
Output power at 1dB gain compression point.

Note 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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SC --- 21556-3X

9097250 TOSHIBA (DISCRETE/OPTO)  
 39C 00488 D T-31-23

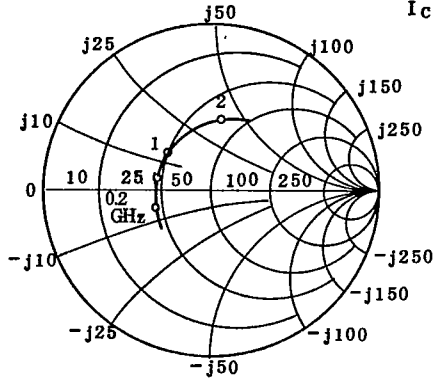
# 2SC1556

2SC1556のエミッタ接地, 小信号Sパラメータ

COMMON EMITTER SMALL SIGNAL S-PARAMETERS OF 2SC1556

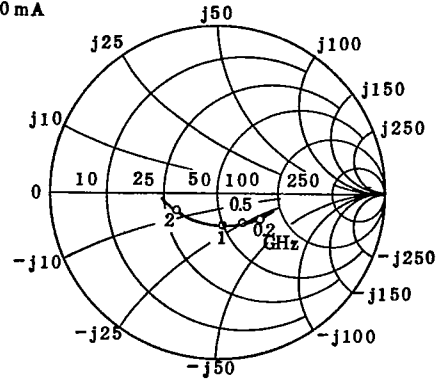
$V_{CE} = 10V$

$I_C = 30mA$



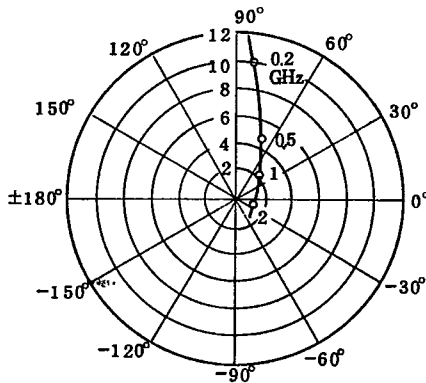
S11

(Unit in  $\Omega$ )

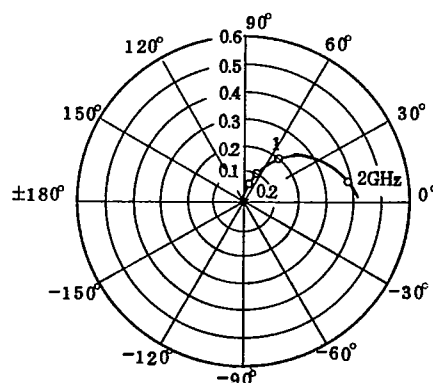


S22

(Unit in  $\Omega$ )



S21



S12

0229

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