

# RF Transistor

30 V, 300 mA,  $f_T = 3.5$  GHz, NPN Single PCP

## 2SC5551A

### 特長

- 高  $f_T$  である : ( $f_T = 3.5$  GHz Typ)
- 大電流である : ( $I_C = 300$  mA)
- コレクタ損失が大きい : (1.3 W Max)
- These are Pb-Free Devices

### 製品と外形に伴う情報

- パッケージ名 : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- 最小梱包単位 : 1,000 Pcs./Reel

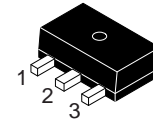
### 絶対最大定格 ABSOLUTE MAXIMUM RATINGS (at $T_a = 25^\circ\text{C}$ )

項目	記号	条件	定格値	Unit
コレクタ・ベース電圧	$V_{CBO}$		40	V
コレクタ・エミッタ電圧	$V_{CEO}$		30	V
エミッタ・ベース電圧	$V_{EBO}$		2	V
コレクタ電流	$I_C$		300	mA
コレクタ電流 (パルス)	$I_{CP}$		600	mA
コレクタ損失	$P_C$	セラミック基板 (250 mm <sup>2</sup> x 0.8 mm) 装着時	1.3	W
接合部温度	$T_j$		150	°C
保存周囲温度	$T_{stg}$		-55~+150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

(参考訳)

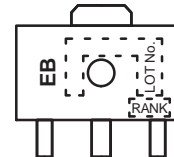
最大定格を超えるストレスは、デバイスにダメージを与える危険性があります。これらの定格値を超えた場合は、デバイスの機能性を損ない、ダメージが生じ、信頼性に影響を及ぼす危険性があります。



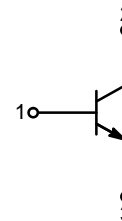
- 1: Base
- 2: Collector
- 3: Emitter

SOT-89 / PCP-1  
CASE 419AU

### マーキング



### 電氣的接続図



### ORDERING INFORMATION

Device	パッケージ名	最小梱包単位†
2SC5551AE-TD-E	PCP (Pb-Free)	1,000 / Tape & Reel
2SC5551AF-TD-E	PCP (Pb-Free)	1,000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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## 電氣的特性 ELECTRICAL CHARACTERISTICS (at Ta = 25°C)

項目	記号	条件	定格値			Unit
			Min	Typ	Max	
コレクタしゃ断電流	$I_{CBO}$	$V_{CB} = 20\text{ V}, I_E = 0\text{ A}$	-	-	1.0	$\mu\text{A}$
エミッタしゃ断電流	$I_{EBO}$	$V_{EB} = 1\text{ V}, I_C = 0\text{ A}$	-	-	5.0	$\mu\text{A}$
直流電流増幅率	$h_{FE1}$	$V_{CE} = 5\text{ V}, I_C = 50\text{ mA}$	90	-	270	
	$h_{FE2}$	$V_{CE} = 5\text{ V}, I_C = 300\text{ mA}$	20	-	-	
利得帯域幅積	$f_T$	$V_{CE} = 5\text{ V}, I_C = 50\text{ mA}$	-	3.5	-	GHz
出力容量	$C_{ob}$	$V_{CB} = 10\text{ V}, f = 1\text{ MHz}$	-	2.9	4.0	pF
帰還容量	$C_{re}$		-	1.5		pF
コレクタ・エミッタ飽和電圧	$V_{CE(sat)}$	$I_C = 50\text{ mA}, I_B = 5\text{ mA}$	-	0.07	0.3	V
ベース・エミッタ飽和電圧	$V_{BE(sat)}$	$I_C = 50\text{ mA}, I_B = 5\text{ mA}$	-	0.8	1.2	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

(参考訳)

製品パラメータは、特別な記述が無い限り、記載されたテスト条件に対する電氣的特性で示しています。異なる条件下で製品動作を行った時には、電氣的特性で示している特性を得られない場合があります。

\*2SC5551Aは、50 mA  $h_{FE}$ により次のように分類している。

Table 1.

ランク	E	F
$h_{FE}$	90~180	135~270

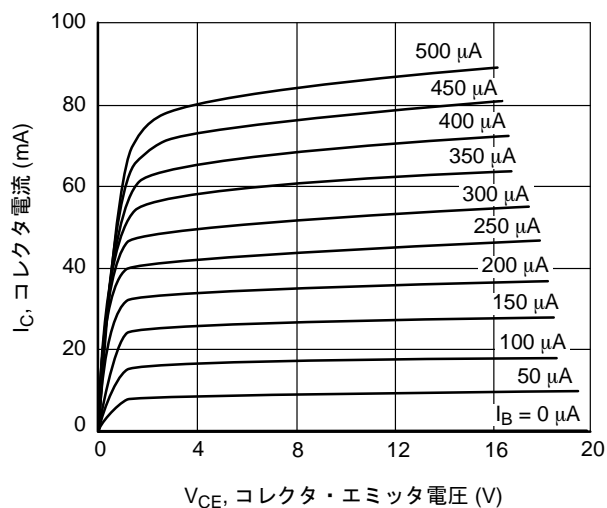


Figure 1.  $I_C - V_{CE}$

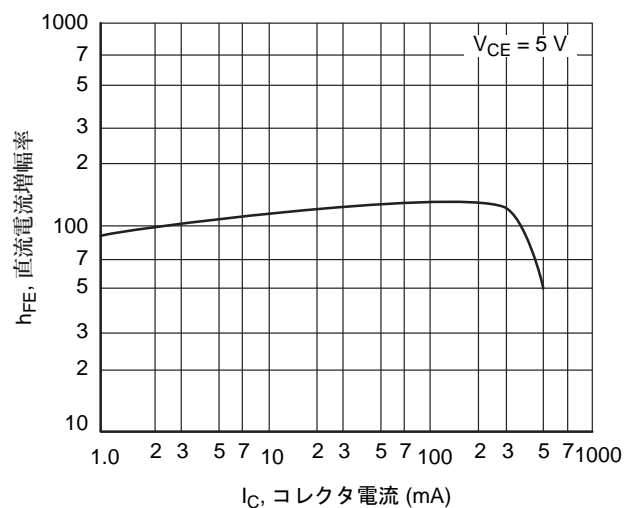


Figure 2.  $h_{FE} - I_C$

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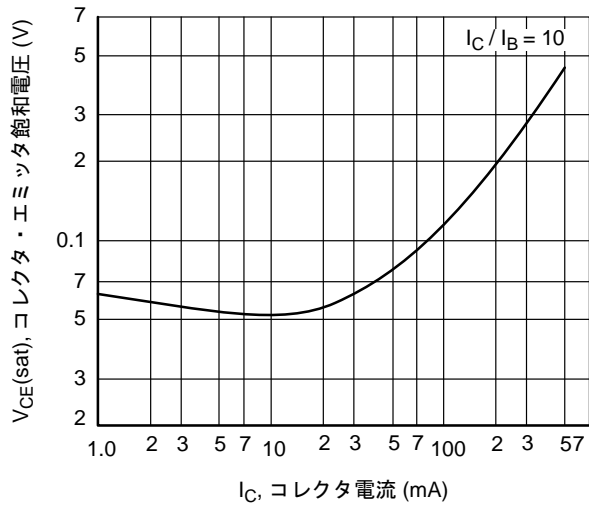


Figure 3.  $V_{CE(sat)} - I_C$

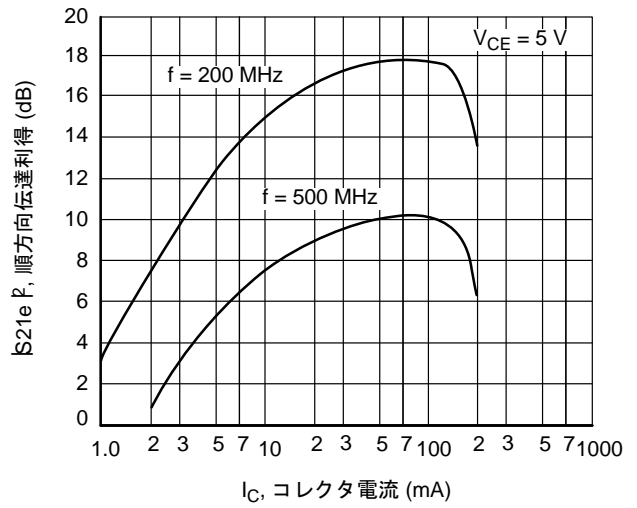


Figure 4.  $|S_{21e}|^2 - I_C$

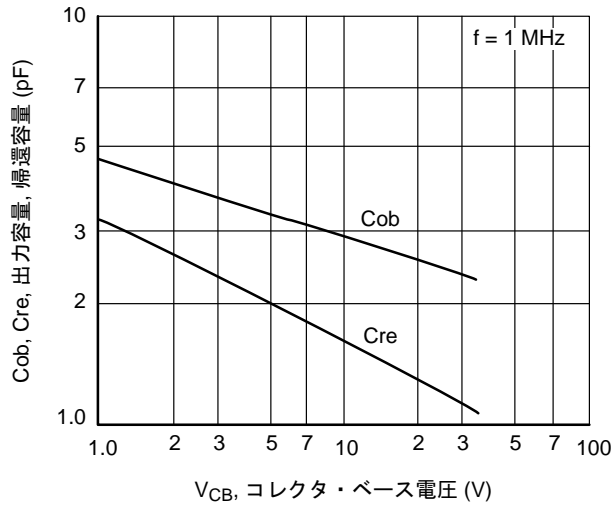


Figure 5.  $C_{ob}, C_{re} - V_{CB}$

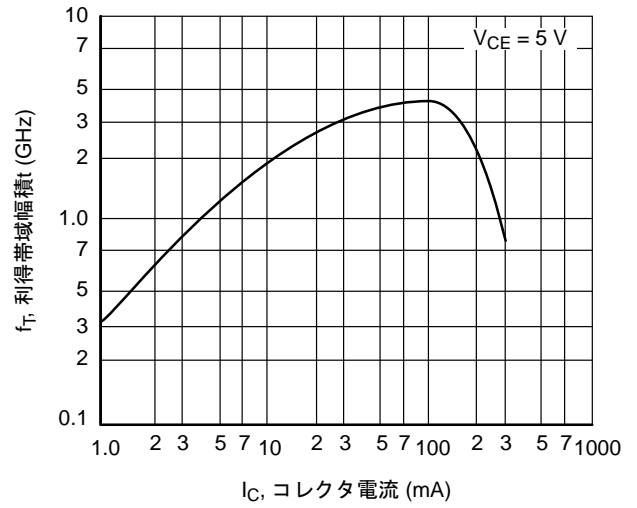


Figure 6.  $f_T - I_C$

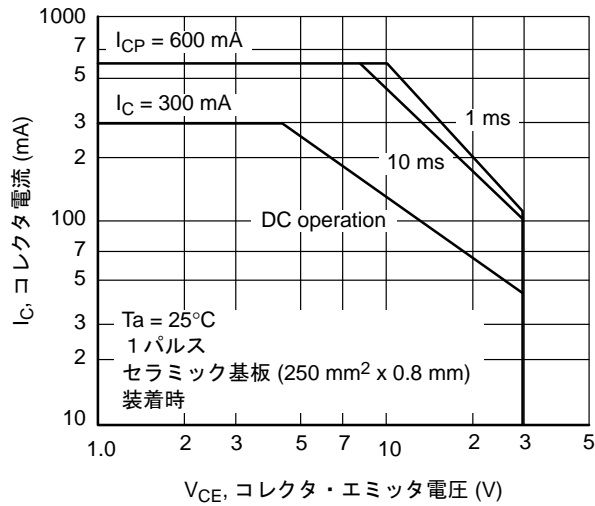


Figure 7. ASO

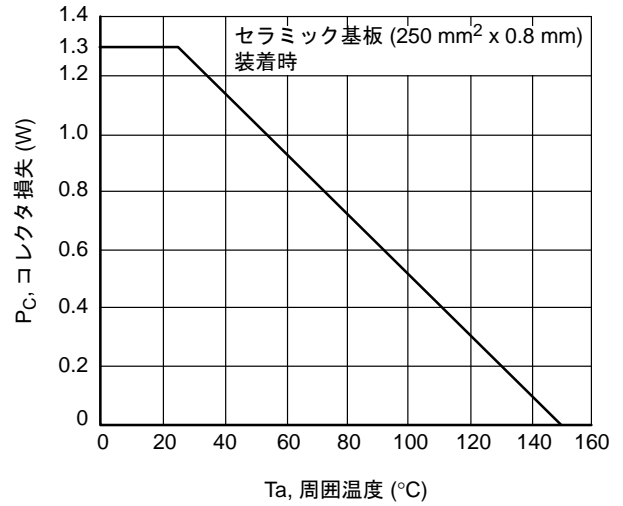


Figure 8.  $P_C - T_a$

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## Land Pattern Example

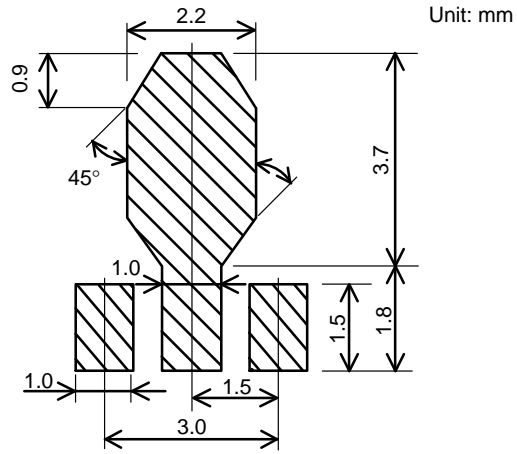


Figure 9. Land Pattern Example

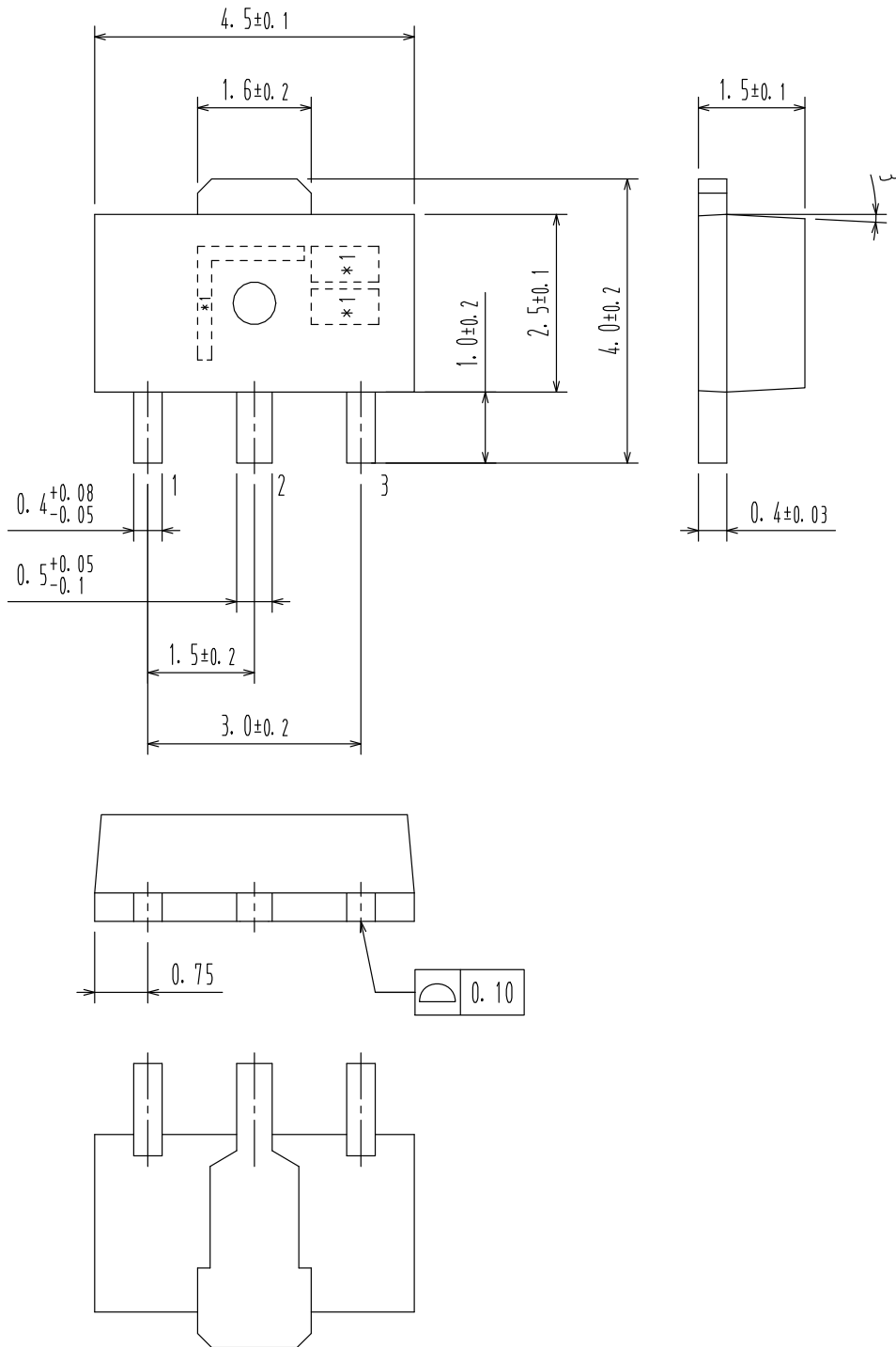
**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

ON Semiconductor®



**SOT-89 / PCP-1**  
**CASE 419AU**  
**ISSUE O**

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