# 25D389, 25D389A

## シリコン NPN 拡散接合メサ形/Si NPN Diffused Junction Mesa

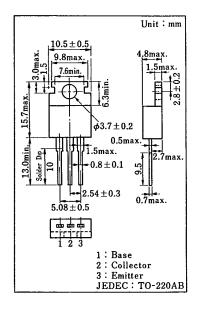
中出力電力増幅用/Medium Power Amplifier

### ■ 特 徴/Features

- コレクタ損失 Pc が大きい。/Large Pc
- 安全動作領域 (ASO) が広い。/Wide area of safe operation (ASO)

#### ■ 絶対最大定格/Absolute Maximum Ratings (Ta=25°C)

| Item            |         | Symbol           | Value    | Unit |
|-----------------|---------|------------------|----------|------|
| コレクタ・           | 2SD389  | 17               | 60       | V    |
| ベース電圧           | 2SD389A | $V_{cso}$        | 80       | Υ    |
| コレクタ・           | 2SD389  | 37               | 60       | v    |
| エミッタ電圧          | 2SD389A | $V_{ceo}$        | 80       | V    |
| エミッタ・ベ          | ース電圧    | V <sub>EBO</sub> | 8        | V    |
| せん頭コレクタ電流       |         | I <sub>CP</sub>  | 6        | Α    |
| コレクタ電流          |         | Ic               | 4        | Α    |
| コレクタ損失(Tc=25 ℃) |         | Pc               | 40       | W    |
| 接合部温度           |         | Ti               | 150      | °C   |
| 保存温度            |         | $T_{stg}$        | -55~+150 | °C   |



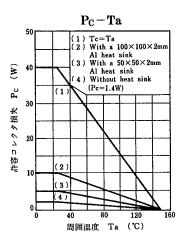
### ■ 電気的特性/Electrical Characteristics (Ta=25°C)

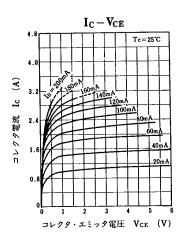
| Iter          | n       | Symbol               | Condition                                      | min. | typ. | max. | Unit       |
|---------------|---------|----------------------|------------------------------------------------|------|------|------|------------|
| コレクタしゃ断電流     |         | Ісво                 | $V_{CB} = 20 \text{ V}, I_{E} = 0$             |      |      | 30   | μA         |
| エミッタしゃ断       | 電流      | I <sub>EBO</sub>     | $V_{EB}=8 V$ , $I_{C}=0$                       |      |      | 1    | mA         |
| コレクタ・         | 2SD389  |                      | Y                                              | 60   |      |      | v          |
| エミッタ電圧        | 2SD389A | V <sub>CE(sus)</sub> | $I_c = 0.2 \text{ A}, L = 25 \text{ mH}$       | 80   |      |      | \ <b>`</b> |
|               |         |                      | $V_{ce} = 3 V, I_c = 0.1 A$                    | 40   |      |      |            |
| 直流電流増幅率       |         | h <sub>FE2</sub> *   | $V_{ce}=3 V$ , $I_c=1 A$                       | 30   |      | 160  |            |
| ベース・エミッタ電圧    |         | V <sub>BE</sub>      | $V_{ce}=3 V$ , $I_c=1 A$                       |      |      | 1.2  | V          |
| コレクタ・エミッタ飽和電圧 |         | V <sub>CE(sat)</sub> | $I_c=2 A, I_B=0.4 A$                           |      |      | 1    | V          |
| しゃ断周波数        |         | f <sub>αe</sub>      | $V_{CE} = 10 \text{ V}, I_{C} = 0.2 \text{ A}$ |      | 25   |      | kHz        |

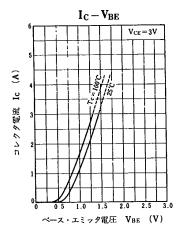
### \* hera ランク分類/hera Classifications

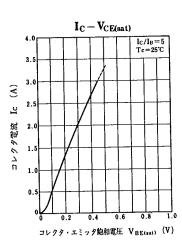
| Class            | Q     | P        | 0      |
|------------------|-------|----------|--------|
| h <sub>FE2</sub> | 30~60 | · 50~100 | 80~160 |

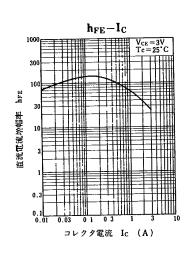
2SD389,2SD389A

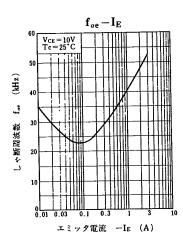


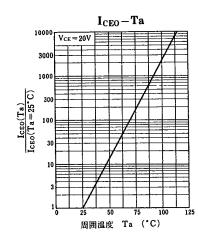


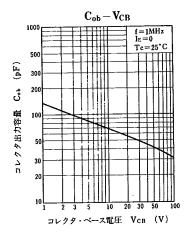


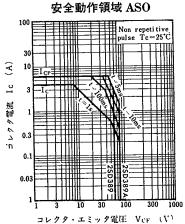


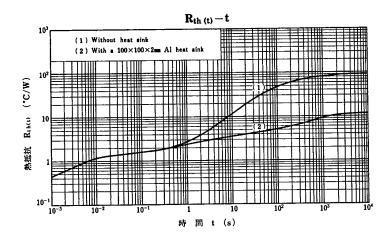












# 2SD601, 2SD601A

シリコン NPN エピタキシァルプレーナ形/Si NPN Epitaxial Planar

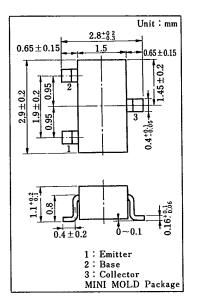
一般增輻用/General Amplifier 2SB709, 2SB709A とコンプリメンタリ/Comlementary Pair with 2SB709, 2SB709A

### ■ 特 徴/Features

- 直流電流増幅率 hFE が高い。/High hFE
- コレクタ・エミッタ飽和電圧 V<sub>CE(sat)</sub> が低い。/Low V<sub>CE(sat)</sub>

### ■ 絶対最大定格/Absolute Maximum Ratings (Ta=25°C)

| Item       |         | Symbol           | Value    | Unit     |
|------------|---------|------------------|----------|----------|
| コレクタ・      | 2SD601  | 17               | 30       | v        |
| ベース電圧      | 2SD601A | V <sub>CBO</sub> | 60       | <b>v</b> |
| コレクタ・      | 2SD601  | V <sub>ceo</sub> | 25       | v        |
| エミッタ電圧     | 2SD601A | V CEO            | 50       | <b>v</b> |
| エミッタ・ベース電圧 |         | V <sub>EBO</sub> | 7        | V        |
| せん頭コレクタ電流  |         | I <sub>CP</sub>  | 200      | mA       |
| コレクタ電流     |         | I <sub>c</sub>   | 100      | mA       |
| コレクタ損失     |         | $P_c$            | 200      | mW       |
| 接合部温度      |         | T,               | 125      | °C       |
| 保存温度       |         | Tstg             | -55~+125 | °C       |

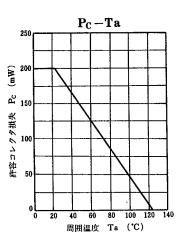


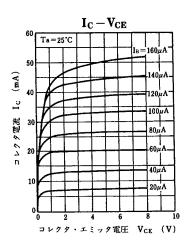
### ■ 電気的特性/Electrical Characteristics (Ta=25°C)

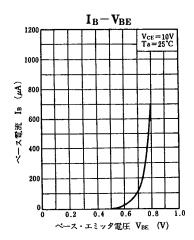
| Ite                               | m            | Symbol               | Condition                                                                                              | min. | typ. | max. | Unit     |
|-----------------------------------|--------------|----------------------|--------------------------------------------------------------------------------------------------------|------|------|------|----------|
| - 1 <i>b b</i> 1 . <b>B</b> C#55+ |              | Ісво                 | $V_{CB} = 20 \text{ V}, I_{E} = 0$                                                                     |      |      | 0.1  | μA       |
| コレクタしや的                           | コレクタしゃ断電流    |                      | $V_{CE} = 10 \text{ V}, I_B = 0$                                                                       |      |      | 100  | μ        |
| コレクタ・                             | コレクタ・ 2SD601 |                      | $V_{CBO}$ $I_C = 10 \mu$ A, $I_E = 0$                                                                  | 30   |      |      | V        |
| ベース電圧                             | 2SD601A      | V <sub>cвo</sub>     | $I_C = 10 \mu\text{A},  I_E = 0$                                                                       | 60   |      |      | <b>'</b> |
| コレクタ・                             | 2SD601       | V <sub>CEO</sub>     | $I_c = 2 \text{ mA}, I_B = 0$                                                                          | 25   |      |      | v        |
| エミッタ電圧                            | 2SD601A      | V CEO                | $I_C = 2 \text{ mA},  I_B = 0$                                                                         | 50   |      |      | v        |
| エミッタ・ベー                           | ス電圧          | V <sub>EBO</sub>     | $I_{\rm E} = 10 \mu{\rm A}, \ I_{\rm C} = 0$                                                           | 7    |      |      | V        |
| 直流電流増幅率                           |              | h <sub>FE1</sub> *   | $V_{cE}=10 \text{ V}, I_{c}=2 \text{ mA}$                                                              | 160  |      | 460  |          |
|                                   |              | h <sub>FE2</sub>     | $V_{CE} = 2 \text{ V}, I_{C} = 100 \text{ mA}$                                                         | 90   |      |      |          |
| コレクタ・エミッタ飽和電圧                     |              | V <sub>CE(sat)</sub> | $I_c = 100 \text{ mA}, I_B = 10 \text{ mA}$                                                            |      | 0.3  | 0.5  | V        |
| トランジション周波数                        |              | f <sub>T</sub>       | $V_{CB}=10 \text{ V}, -I_E=2 \text{ mA}$                                                               |      | 150  |      | MHz      |
| 雑音電圧                              |              | NV                   | $V_{ce}=10 \text{ V}, I_c=1 \text{ mA}, G_v=80 \text{ dB}$<br>$R_g=100 \text{ k}\Omega, Function=FLAT$ |      | 110  |      | mV       |
| コレクタ出力容                           | コレクタ出力容量     |                      | $V_{CB} = 10 \text{ V}, I_{E} = 0, f = 1 \text{ MHz}$                                                  |      | 3.5  |      | pF       |

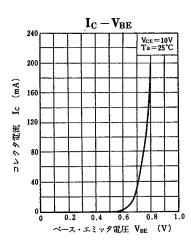
#### \*h<sub>FE1</sub> ランク分類/ h<sub>FE1</sub> Classifications

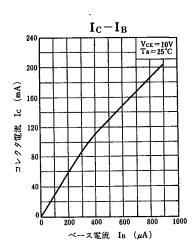
| Class            |         | Q       | R       | S       |
|------------------|---------|---------|---------|---------|
| h <sub>FE1</sub> |         | 160~260 | 210~340 | 290~460 |
| Marking          | 2SD601  | YQ      | YR      | YS      |
| Symbol           | 2SD601A | ZQ      | ZR      | ZS      |

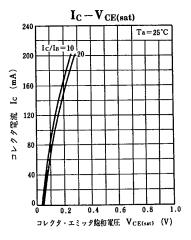


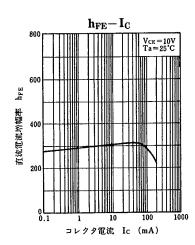












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