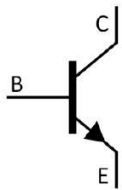


SOT-23      NPN      Silicon NPN transistor in a SOT-23 Plastic Package.

2SA1981S

High  $h_{FE}$ , complementary pair with 2SA1981S.

Audio power amplifier application.

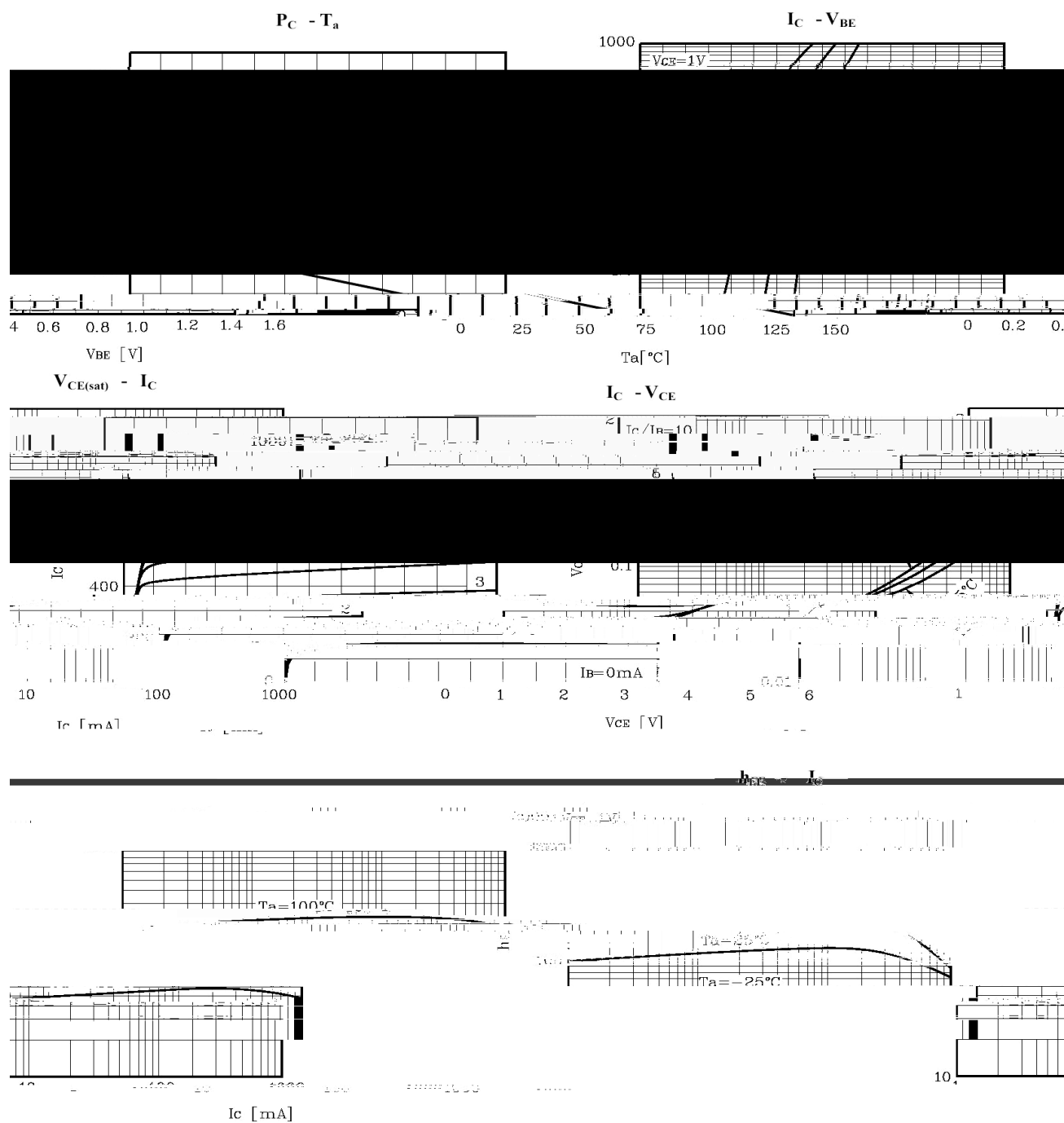


PIN1   Base      PIN 2   Emitter      PIN 3   Collector

| $h_{FE}$ Classifications<br>Symbol | O         | Y         |
|------------------------------------|-----------|-----------|
| $h_{FE}$ Range                     | 100   200 | 160   320 |
| Marking                            | HFAO      | HFAY      |

| Parameter                    | Symbol    | Rating  | Unit |
|------------------------------|-----------|---------|------|
| Collector to Base Voltage    | $V_{CBO}$ | 35      | V    |
| Collector to Emitter Voltage | $V_{CEO}$ | 30      | V    |
| Emitter to Base Voltage      | $V_{EBO}$ | 5.0     | V    |
| Collector Current            | $I_C$     | 800     | mA   |
| Collector Power Dissipation  | $P_C$     | 200     | mW   |
| Junction Temperature         | $T_j$     | 150     |      |
| Storage Temperature Range    | $T_{stg}$ | -55 150 |      |

| Parameter                              | Symbol        | Test Conditions                               | Min | Typ | Max | Unit |
|----------------------------------------|---------------|-----------------------------------------------|-----|-----|-----|------|
| Collector to Base Breakdown Voltage    | $V_{CBO}$     | $I_C=100\text{ A}$ $I_E=0$                    | 35  |     |     | V    |
| Collector to Emitter Breakdown Voltage | $V_{CEO}$     | $I_C=1.0\text{mA}$ $I_B=0$                    | 30  |     |     | V    |
| Emitter to Base Breakdown Voltage      | $V_{EBO}$     | $I_E=10\text{ A}$ $I_C=0$                     | 5.0 |     |     | V    |
| Collector Cut-Off Current              | $I_{CBO}$     | $V_{CB}=35\text{V}$ $I_E=0$                   |     |     | 0.1 | A    |
| Emitter Base Cut-Off Current           | $I_{EBO}$     | $V_{EB}=5.0\text{V}$ $I_C=0$                  |     |     | 0.1 | A    |
| DC Current Gain                        | $h_{FE}$      | $V_{CE}=1.0\text{V}$ $I_C=100\text{mA}$       | 100 |     | 320 |      |
| Collector-emitter saturation voltage   | $V_{CE(sat)}$ | $I_C=500\text{mA}$ $I_B=50\text{mA}$          |     |     | 0.5 | V    |
| Transition Frequency                   | $f_T$         | $V_{CE}=5.0\text{V}$ $I_C=10\text{mA}$        |     | 120 |     | MHz  |
| Collector output capacitance           | $C_{ob}$      | $V_{CB}=10\text{V}$ $f=1.0\text{MHz}$ $I_E=0$ |     | 13  |     | pF   |







H

FA

O  $h_{FE}$

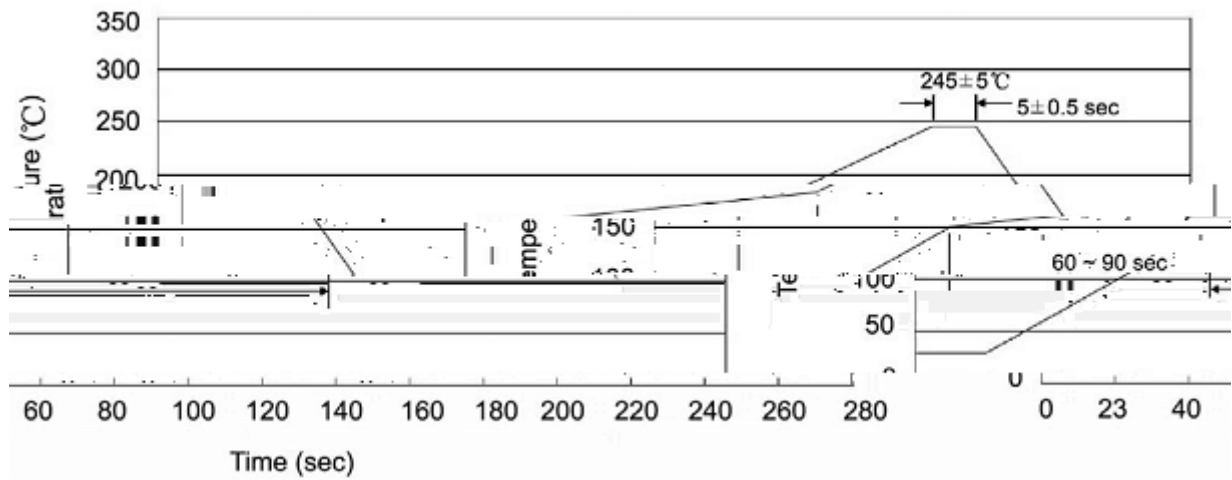
Note:

H Company Code

FA Product Type Code

O  $h_{FE}$  Classifications Symbol Code

Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1

25 150

60 90sec;

1.Preheating:25~150 , Time:60~90sec.
- 2

245±5

5±0.5sec;

2.Peak Temp.:245±5 , Duration:5±0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 /sec.

260±5

10±1 sec.

Temp.:260±5

Time:10±1 sec

/ REEL

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|-----------------------------------------|-------------|-------------|
|                      | Units/Reel<br>只/卷盘 | Reels/Inner Box<br>卷盘/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Reel                                    | Inner Box 盒 | Outer Box 箱 |
| SOT-23               | 3,000              | 10                      | 30,000                 | 6                            | 180,000                | 7 ×8                                    | 180×120×180 | 390×385×205 |