

## / Descriptions

SOT-23

NPN

Silicon NPN transistor in a SOT-23 Plastic Package.

## / Features

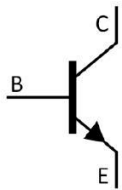
, 2SB1198K

High breakdown, low  $V_{CE(sat)}$ , complements the 2SB1198K.

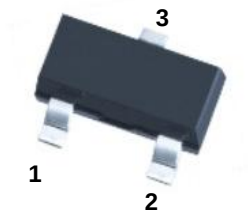
## / Applications

Medium power amplifier applications.

### / Equivalent Circuit



## / Pinning



| PIN1 | Base | PIN 2 | Collector | PIN 3 | Emitter |
|------|------|-------|-----------|-------|---------|
|------|------|-------|-----------|-------|---------|

## / $h_{FE}$ Classifications & Marking

|                                           |         |         |
|-------------------------------------------|---------|---------|
| h <sub>FE</sub> Classifications<br>Symbol | Q       | R       |
| h <sub>FE</sub> Range                     | 120~270 | 180~390 |
| Marking                                   | HAJQ    | HAJR    |

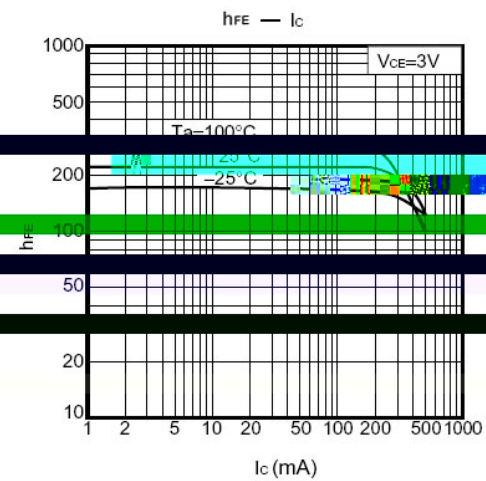
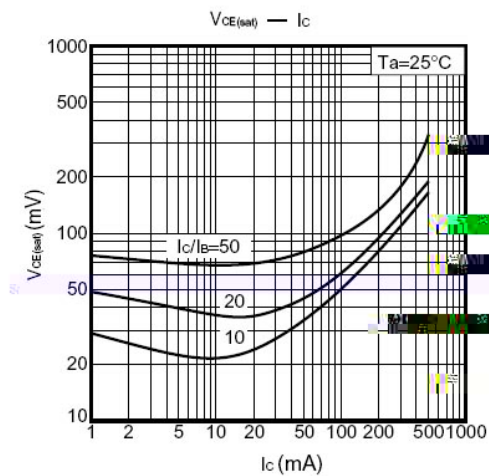
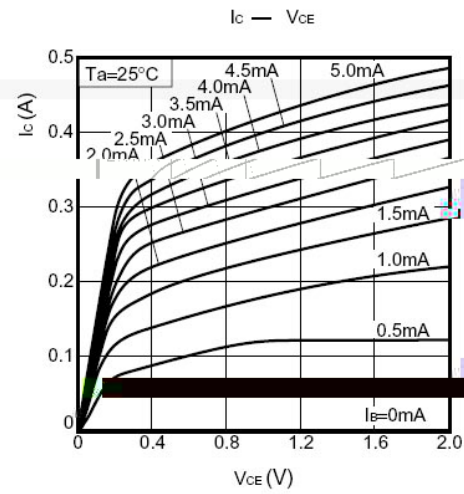
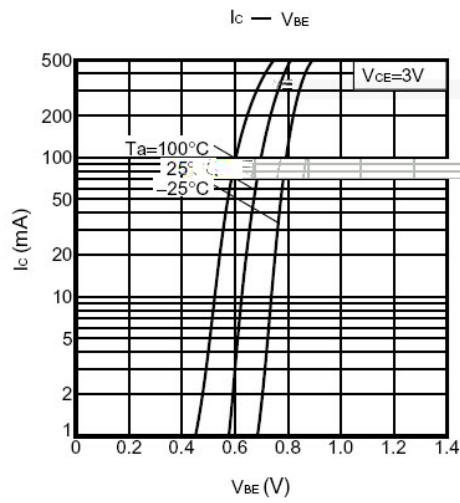
**/ Absolute Maximum Ratings(Ta=25 )**

| Parameter                      | Symbol    | Rating  | Unit |
|--------------------------------|-----------|---------|------|
| Collector to Base Voltage      | $V_{CBO}$ | 80      | V    |
| Collector to Emitter Voltage   | $V_{CEO}$ | 80      | V    |
| Emitter to Base Voltage        | $V_{EBO}$ | 5       | V    |
| Collector Current - Continuous | $I_C$     | 500     | mA   |
| Collector Power Dissipation    | $P_C$     | 200     | mW   |
| Junction Temperature           | $T_j$     | 150     |      |
| Storage Temperature Range      | $T_{stg}$ | -55 150 |      |

**/ Electrical Characteristics(Ta=25 )**

| Parameter                               | Symbol        | Test Conditions                            | Min | Typ | Max | Unit    |
|-----------------------------------------|---------------|--------------------------------------------|-----|-----|-----|---------|
| Collector to Base Breakdown Voltage     | $V_{CBO}$     | $I_C=50\mu A$                              | 80  |     |     | V       |
| Collector to Emitter Breakdown Voltage  | $V_{CEO}$     | $I_C=2mA$                                  | 80  |     |     | V       |
| Emitter to Base Breakdown Voltage       | $V_{EBO}$     | $I_E=50\mu A$                              | 5.0 |     |     | V       |
| Collector Cut-Off Current               | $I_{CBO}$     | $V_{CB}=50V \quad I_E=0$                   |     |     | 0.5 | $\mu A$ |
| Emitter Base Cut-Off Current            | $I_{EBO}$     | $V_{EB}=4.0V \quad I_C=0$                  |     |     | 0.5 | $\mu A$ |
| DC Current Gain                         | $h_{FE}$      | $V_{CE}=3.0V \quad I_C=100mA$              | 120 |     | 390 |         |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=500mA \quad I_B=50mA$                 |     | 0.2 | 0.5 | V       |
| Transition Frequency                    | $f_T$         | $I_C=50mA \quad f=100MHz \quad V_{CE}=10V$ |     | 120 |     | MHz     |
| Collector output capacitance            | $C_{ob}$      | $V_{CB}=10V \quad I_E=0 \quad f=1.0MHz$    |     | 7.5 |     | pF      |

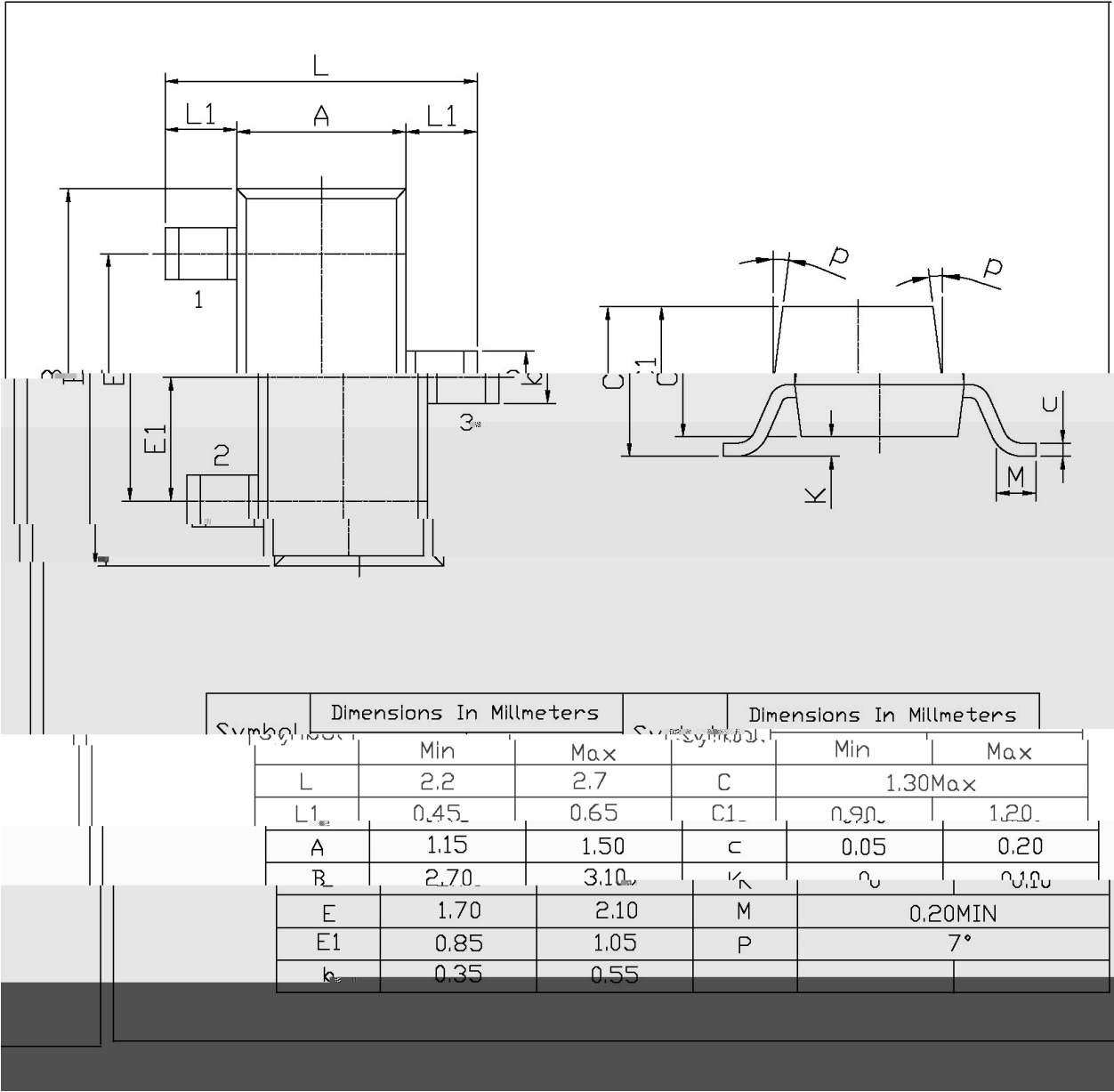
/ Electrical Characteristic Curve



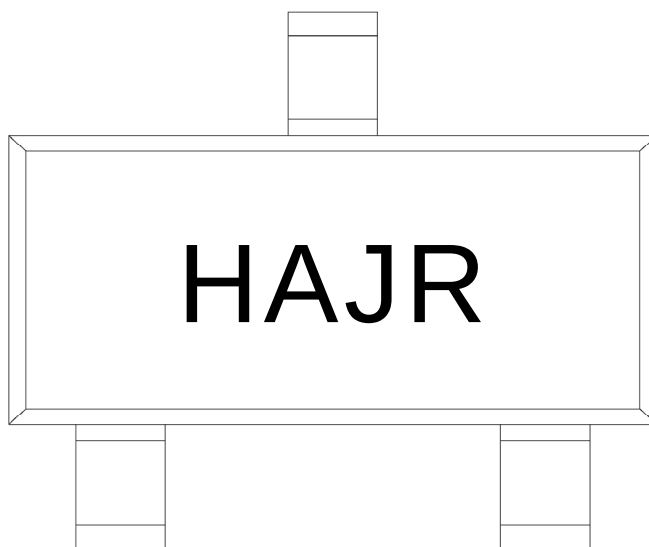
/ Package Dimensions

SOT-23

单位：mm



**/ Marking Instructions**



H

AJ

R             $h_{FE}$

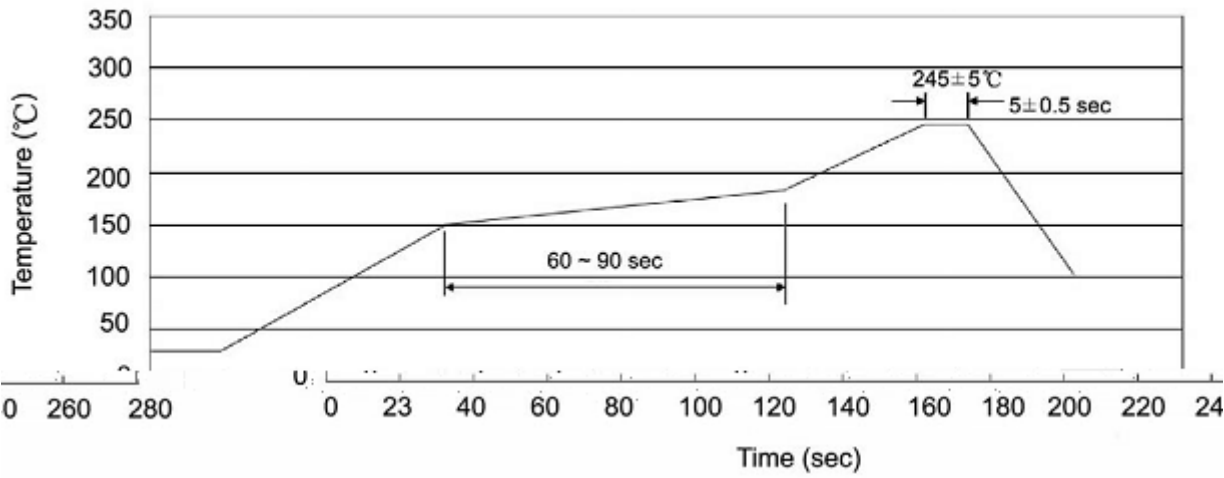
Note:

H:            Company Code.

AJ:           Product Type Code.

R:             $h_{FE}$  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.            |

/ Resistance to Soldering Heat Test Conditions

260±5                      10±1 sec.                      Temp.:260±5                      Time:10±1 sec

/ Packaging SPEC.

/ 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 |

/ Notices