

**/ Descriptions**

Silicon NPN transistor in a SOT-23 Plastic Package.

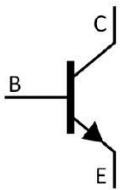
**/ Features**

High  $f_T$ .

**/ Applications**

High frequency general-purpose amplifier applications.

**/ Equivalent Circuit**



**/ Pinning**



PIN1 Base      PIN 2 Emitter      PIN 3 Collector

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

|                                 |       |        |        |
|---------------------------------|-------|--------|--------|
| $h_{FE}$ Classifications Symbol | 2     | 3      | 4      |
| $h_{FE}$ Range                  | 40 80 | 60 120 | 90 180 |
| Marking                         | HJ2   | J3H    | HJ4    |

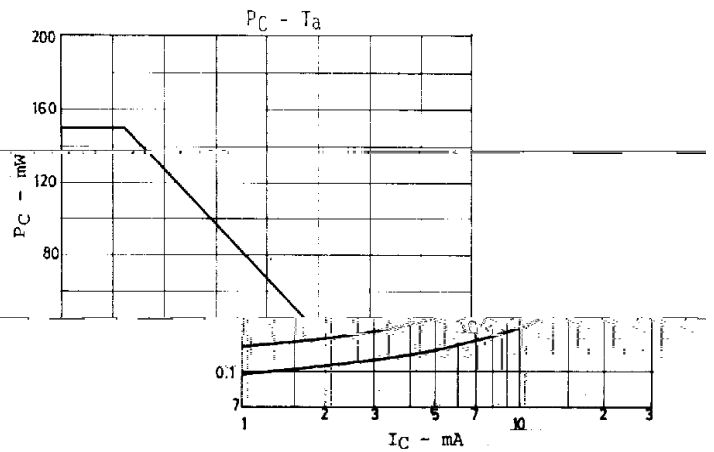
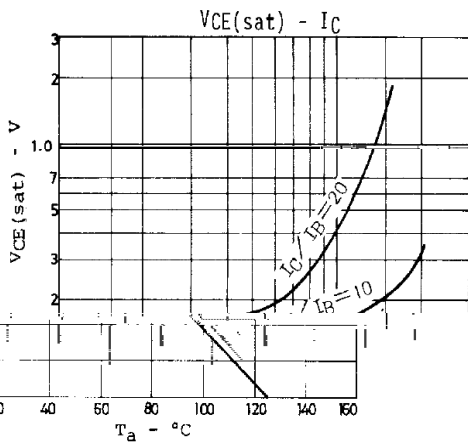
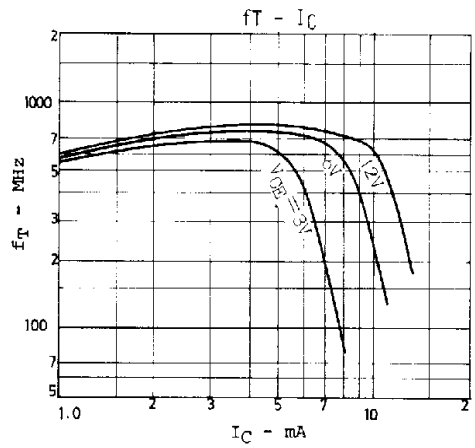
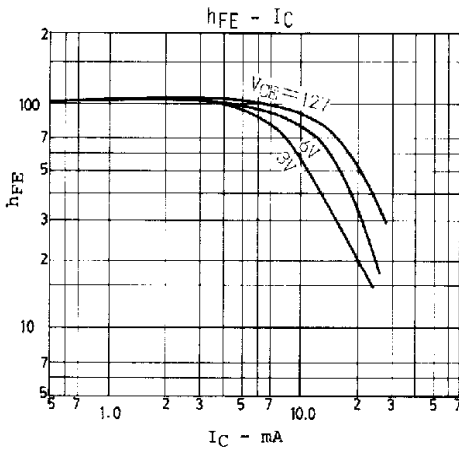
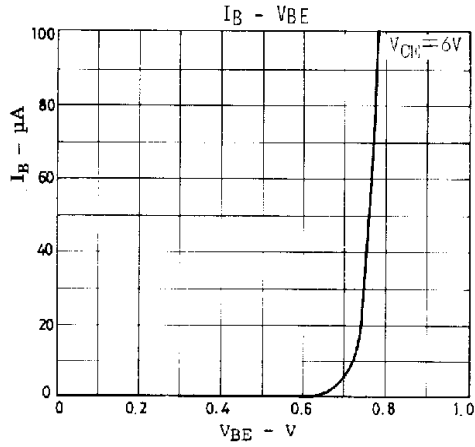
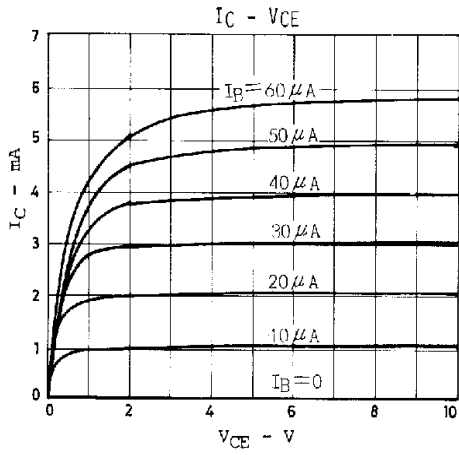
**/ Absolute Maximum Ratings(Ta=25 )**

| Parameter                    | Symbol    | Rating  | Unit |
|------------------------------|-----------|---------|------|
| Collector to Base Voltage    | $V_{CBO}$ | 25      | V    |
| Collector to Emitter Voltage | $V_{CEO}$ | 20      | V    |
| Emitter to Base Voltage      | $V_{EBO}$ | 3.0     | V    |
| Collector Current            | $I_C$     | 30      | mA   |
| Collector Power Dissipation  | $P_C$     | 150     | 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 Cut-Off Current                        | $I_{CBO}$   | $V_{CB}=10V$ $I_E=0$                     |     |     | 0.1 | A    |
| Emitter Base Cut-Off Current                     | $I_{EBO}$   | $V_{EB}=3.0V$ $I_C=0$                    |     |     | 0.1 | A    |
| DC Current Gain                                  | $h_{FE}$    | $V_{CE}=6.0V$ $I_C=1.0mA$                | 40  |     | 180 |      |
| Transition Frequency                             | $f_T$       | $V_{CE}=6.0V$ $I_C=4.0mA$                | 450 | 750 |     | MHz  |
| Noise Figure                                     | NF          | $V_{CE}=6.0V$ $I_C=1.0mA$<br>$f=100MHz$  |     | 2.2 |     | dB   |
| Collector-base parameter                         | $r_{bb'Cc}$ | $V_{CB}=6.0V$ $I_C=1.0mA$<br>$f=31.9MHz$ |     |     | 19  | ps   |
| Gate Dissipation                                 | $P_G$       | $V_{CE}=6.0V$ $I_C=1.0mA$<br>$f=100MHz$  |     | 28  |     | dB   |
| Reverse transfer capacitance<br>(Common emitter) | $C_{re}$    | $V_{CB}=6.0V$ $f=1.0MHz$                 |     | 0.6 | 0.9 | pF   |

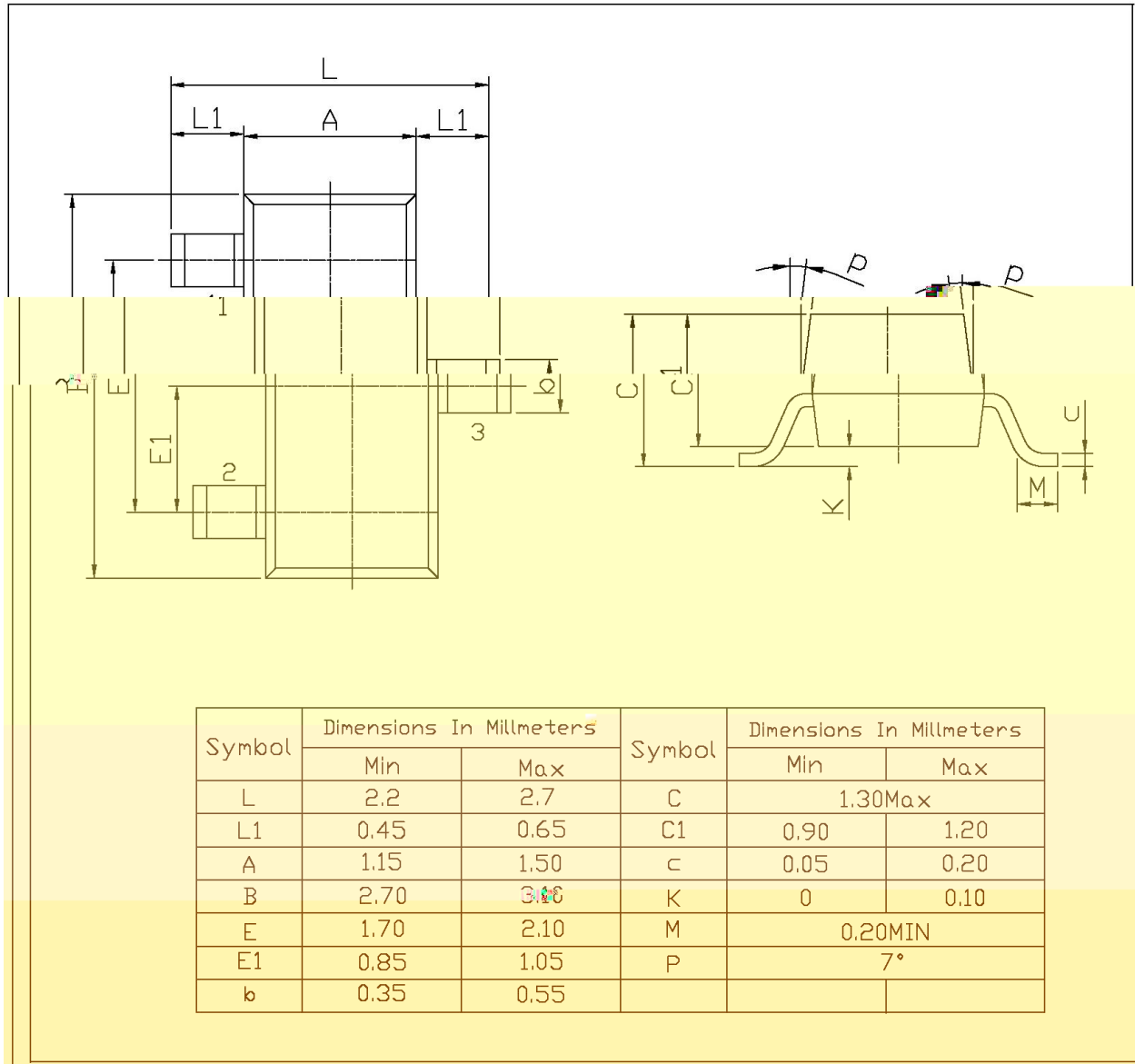
/ Electrical Characteristic Curve



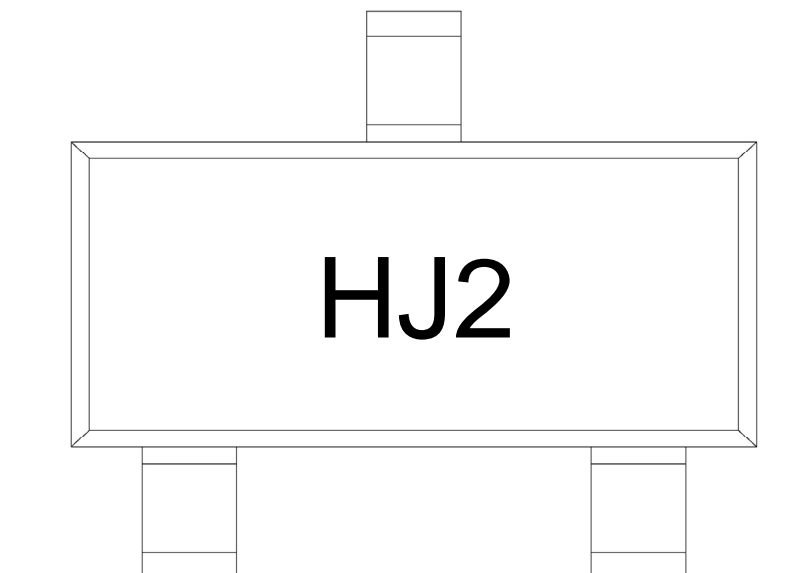
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



$h_{FE}$

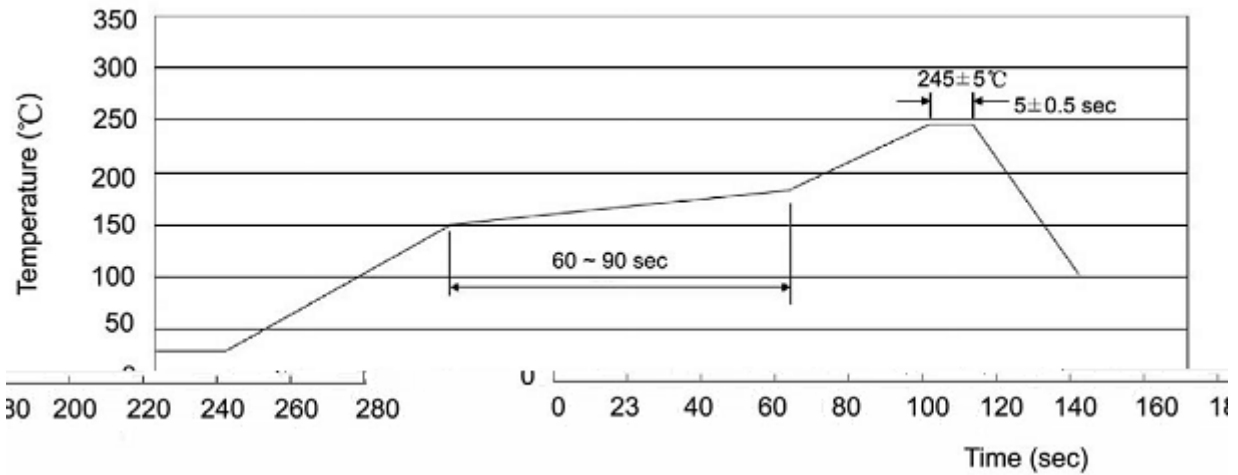
Note:

Company Code

Product Type Code

$h_{FE}$  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