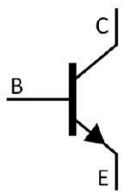


Silicon NPN transistor in a SOT-23 Plastic Package.

High  $V_{EBO}$ , high reverse  $h_{FE}$  (typ.150,  $V_{CE}=-2V, I_C=-2mA$ ), low on resistance ( $R_{on}=1\Omega, I_B=5mA$ ).

For muting and switching applications.



PIN 1   Base      PIN 2   Emitter      PIN 3   Collector

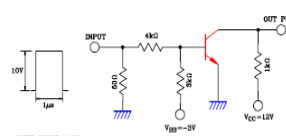
#### / $h_{FE}$ Classifications & Marking

$h_{FE}$  Classifications  
Symbol

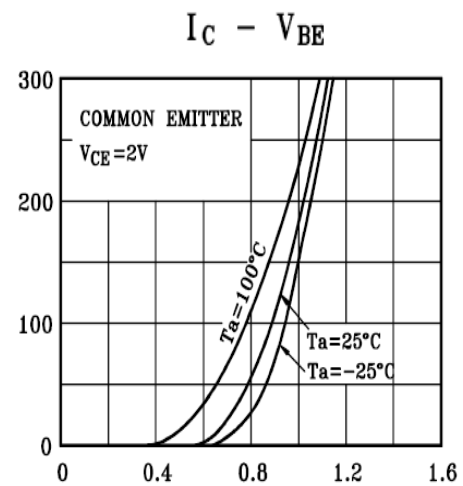
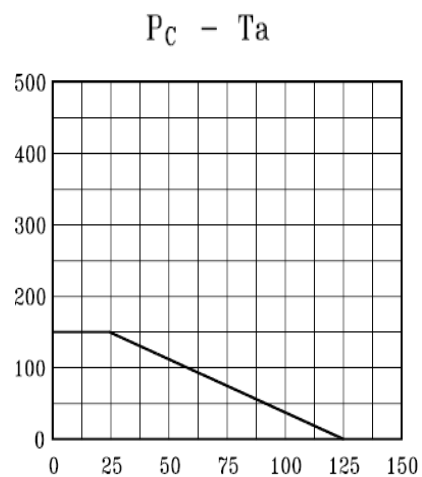
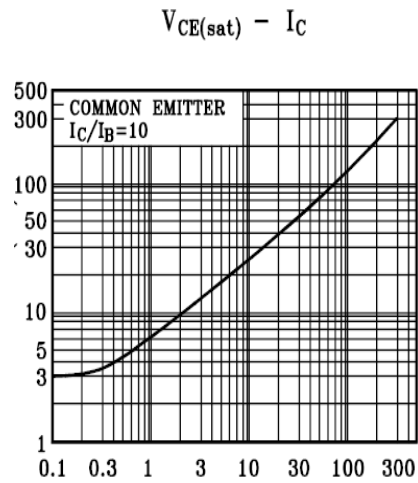
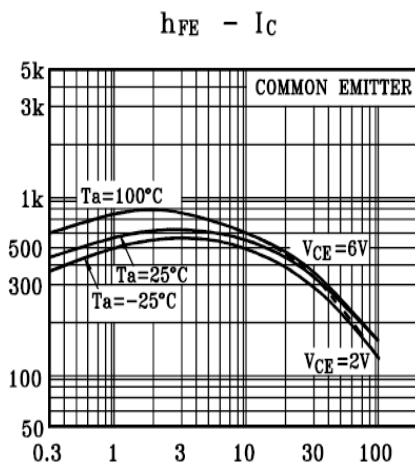
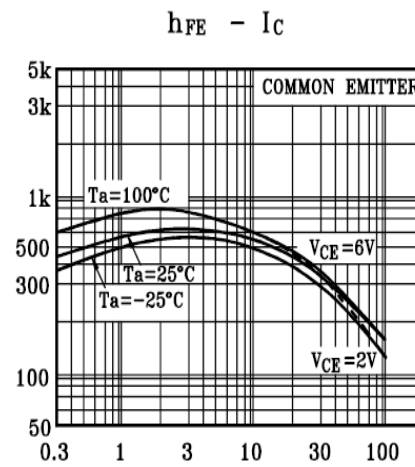
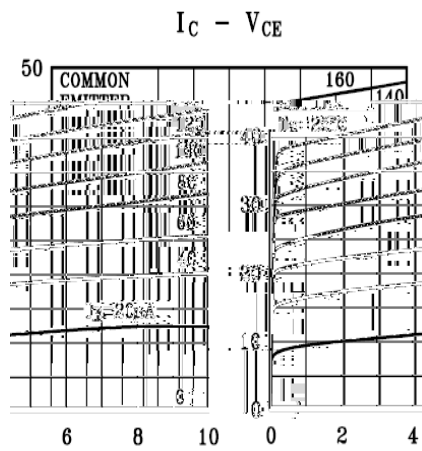
**/ Absolute Maximum Ratings(Ta=25 )**

| Parameter                    | Symbol    | Rating  | Unit |
|------------------------------|-----------|---------|------|
| Collector to Base Voltage    | $V_{CBO}$ | 50      | V    |
| Collector to Emitter Voltage | $V_{CEO}$ | 20      | V    |
| Emitter to Base Voltage      | $V_{EBO}$ | 25      | V    |
| Collector Current            | $I_C$     | 300     | mA   |
| Base Current                 | $I_B$     | 60      | 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 to Emitter Breakdown Voltage  | $V_{CBO}$     | $I_C=100\mu A$                                                                       | 50  |       |      | V       |
| Collector to Base Breakdown Voltage     | $V_{CEO}$     | $I_C=500\mu A$                                                                       | 20  |       |      | V       |
| Emitter to Base Breakdown Voltage       | $V_{EBO}$     | $I_E=100\mu A$                                                                       | 25  |       |      | V       |
| Collector Cut-Off Current               | $I_{CBO}$     | $V_{CB}=50V$ $I_E=0$                                                                 |     |       | 0.1  | $\mu A$ |
| Emitter Cut-Off Current                 | $I_{EBO}$     | $V_{EB}=25V$ $I_C=0$                                                                 |     |       | 0.1  | $\mu A$ |
| DC Current Gain                         | $h_{FE}$      | $V_{CE}=2.0V$ $I_C=4.0mA$                                                            | 200 |       | 1200 |         |
| Base-Emitter Voltage                    | $V_{BE}$      | $V_{CE}=2.0V$ $I_C=4.0mA$                                                            |     | 0.61  |      | V       |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=30mA$ $I_B=3.0mA$                                                               |     | 0.042 | 0.3  | V       |
| Transition Frequency                    | $f_T$         | $V_{CE}=6.0V$ $I_C=4.0mA$                                                            |     | 30    |      | MHz     |
| Collector Output Capacitance            | $C_{ob}$      | $V_{CB}=10V$ $I_E=0$<br>$f=1.0MHz$                                                   |     | 4.8   | 7    | pF      |
| Turu-On Time                            | $T_{on}$      |  | 160 |       | nS   |         |
| Storage Time                            | $T_{stg}$     |                                                                                      |     | 500   |      |         |
| Fall Time                               | $t_f$         |                                                                                      |     | 130   |      |         |

### / Electrical Characteristic Curve



/ Package Dimensions

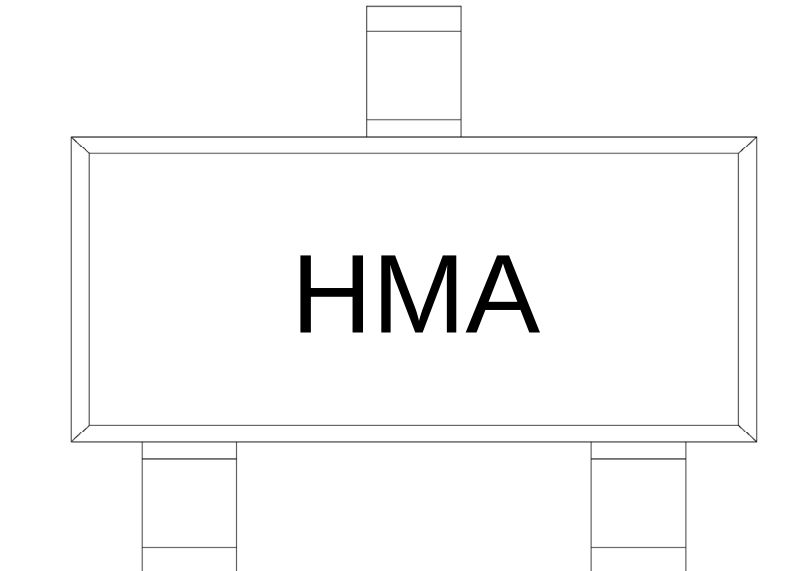
SOT-23

单位 mm



|    |      |      |   |         |      |
|----|------|------|---|---------|------|
| D  | 2.75 | 0.20 | K | 0       | 0.10 |
| E  | 1.70 | 2.10 | M | 0.20MIN |      |
| E1 | 0.85 | 1.05 | P | 7°      |      |
| b  | 0.35 | 0.55 |   |         |      |

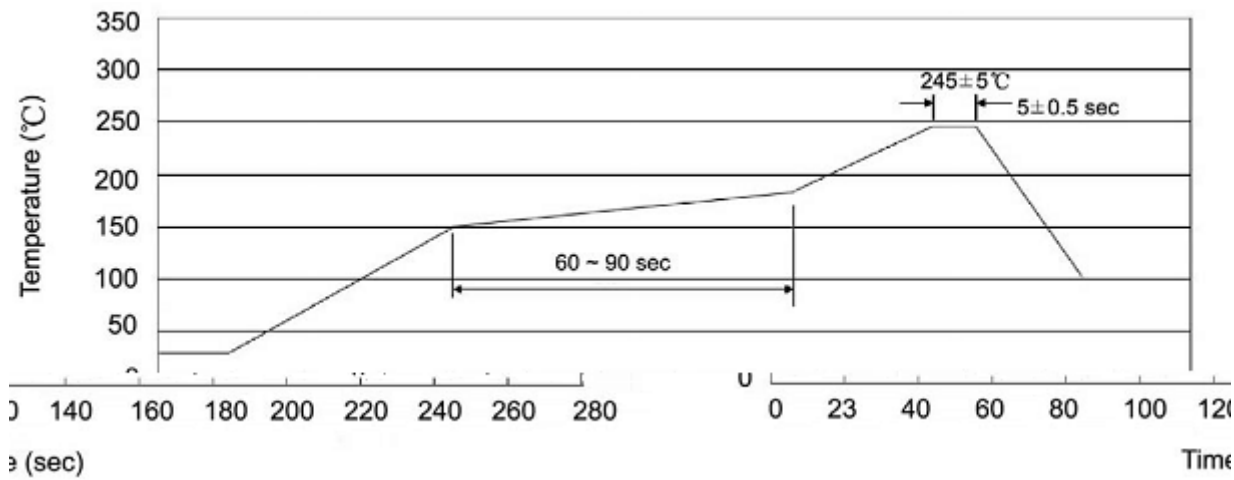
/ Marking Instructions



Note:

|   |                                 |
|---|---------------------------------|
|   | Company Code                    |
| M | Product Type                    |
|   | $h_{FE}$ Classifications Symbol |

( ) /



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> ) |   |   |
|----------------------|------------|------|-----|-----|-----|-----------------------------------------|---|---|
|                      | 只 卷盘       | 卷盘 盒 | 只 盒 | 盒 箱 | 只 箱 |                                         | 盒 | 箱 |
|                      |            |      |     |     |     |                                         |   |   |

/ Notices