

## SOT-23 Plastic-Encapsulate Transistors

|  |   |
|--|---|
| <p><b>2N5401</b></p> <p><b>Features:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> PNP Transistor</li> <li><input type="checkbox"/> Complementary to MMBT5551</li> <li><input type="checkbox"/> Ideal for Medium Power Amplification and Switching</li> </ul> <p><b>Marking:2L</b></p> | <div style="text-align: right;"> </div> <p style="text-align: center;"><b>SOT-23</b></p> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> <div style="text-align: right; margin-top: 10px;"> <p>1.Base (B)</p> <p>2. Emitter (E)</p> <p>3.Collector (C)</p> </div> |
|--|---|

### Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

| Parameter                                   | Symbol          | Value       | Unit |
|---|-----------------|-------------|------|
| Collector-Base Voltage                      | $V_{CBO}$       | -160        | V    |
| Collector-Emitter Voltage                   | $V_{CEO}$       | -150        | V    |
| Emitter-Base Voltage                        | $V_{EBO}$       | -5          | V    |
| Collector Current                           | $I_C$           | 0.6         | A    |
| Collector Power Dissipation                 | PD              | 0.3         | W    |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 416         | °C/W |
| Junction Temperature(MAX.)                  | $T_j$           | 150         | °C   |
| Storage Temperature                         | $T_{stg}$       | -55 to +150 | °C   |

### Electrical Characteristics (Ta=25°C unless otherwise noted)

| Parameter                            | Symbol           | Test conditions                        | Min. | Typ. | Max. | Unit    |
|--------------------------------------|------------------|--|------|------|------|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$    | $I_C = -100\mu A, I_E = 0$             | -160 | -    | -    | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$    | $I_C = -1mA, I_B = 0$                  | -150 | -    | -    | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$    | $I_E = -10\mu A, I_C = 0$              | -5   | -    | -    | V       |
| Collector cut-off current            | $I_{CBO}$        | $V_{CB} = -120V, I_E = 0$              | -    | -    | -0.1 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$        | $V_{EB} = -4V, I_C = 0$                | -    | -    | -0.1 | $\mu A$ |
| DC current gain                      | $h_{FE(1)}^*$    | $V_{CE} = -5V, I_C = -1mA$             | 80   | -    | -    | -       |
|                                      | $h_{FE(2)}^*$    | $V_{CE} = -5V, I_C = -10mA$            | 100  | -    | 300  | -       |
|                                      | $h_{FE(3)}^*$    | $V_{CE} = -5V, I_C = -50mA$            | 50   | -    | -    | -       |
| Collector-emitter saturation voltage | $V_{CE(sat)1}^*$ | $I_C = -10mA, I_B = -1mA$              | -    | -    | -0.2 | V       |
|                                      | $V_{CE(sat)2}^*$ | $I_C = -50mA, I_B = -5mA$              | -    | -    | -0.5 | V       |
| Base-emitter saturation voltage      | $V_{BE(sat)1}^*$ | $I_C = -10mA, I_B = -1mA$              | -    | -    | -1   | V       |
|                                      | $V_{BE(sat)2}^*$ | $I_C = -50mA, I_B = -5mA$              | -    | -    | -1   | V       |
| Transition frequency                 | FT               | $V_{CE} = -5V, I_C = -10mA, f = 30MHz$ | 100  | -    | -    | MHz     |

### CLASSIFICATION OF hFE (2)

|       |         |         |
|-------|---------|---------|
| RANK  | L       | H       |
| RANGE | 100-200 | 200-300 |

\*Pulse test: pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2.0\%$ .



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## Typical Characteristics

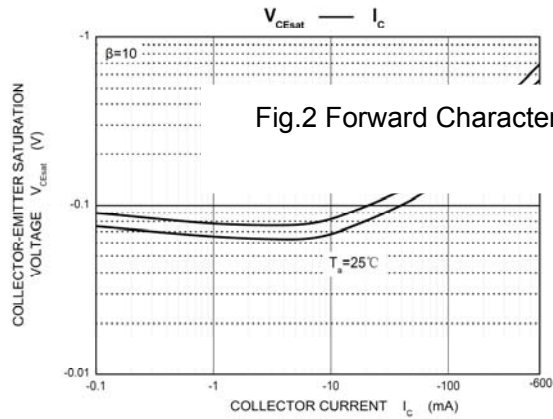
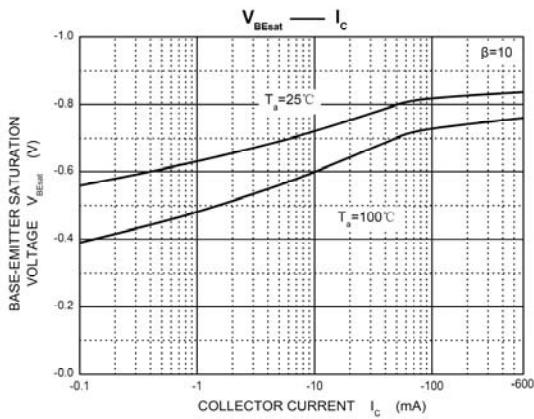
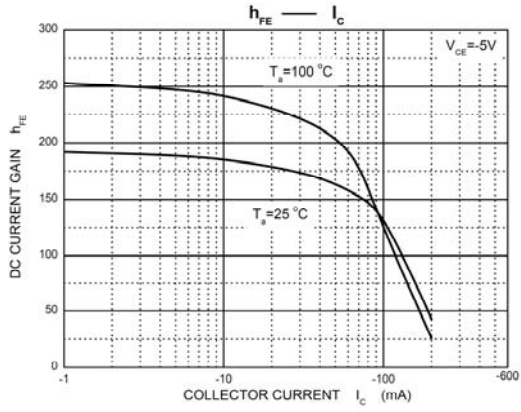
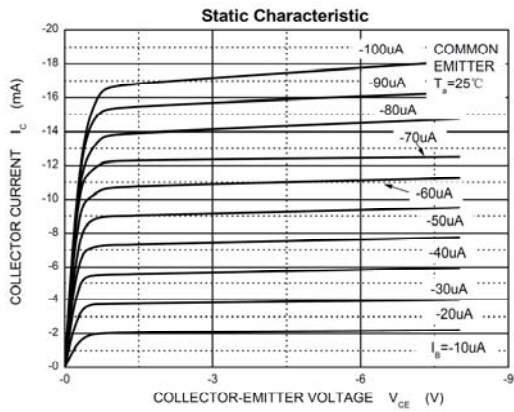
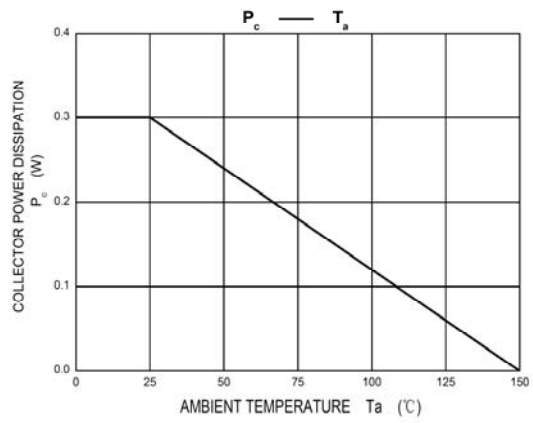
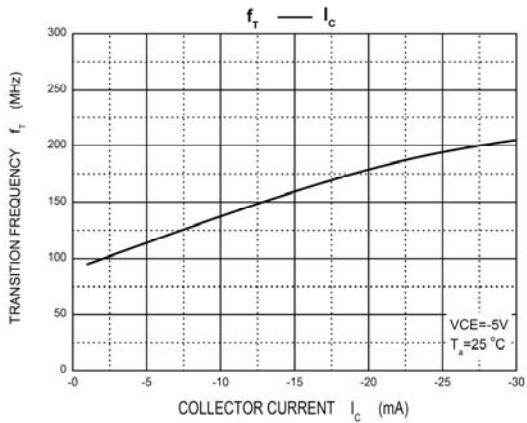
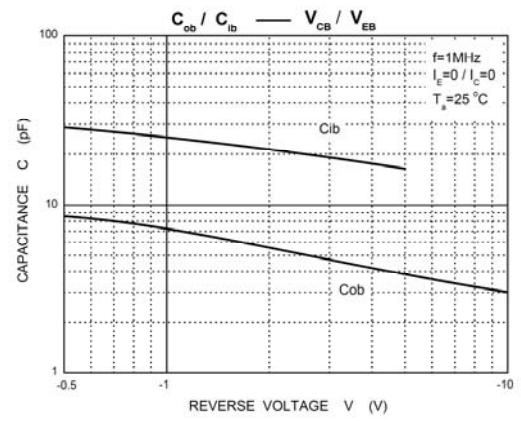
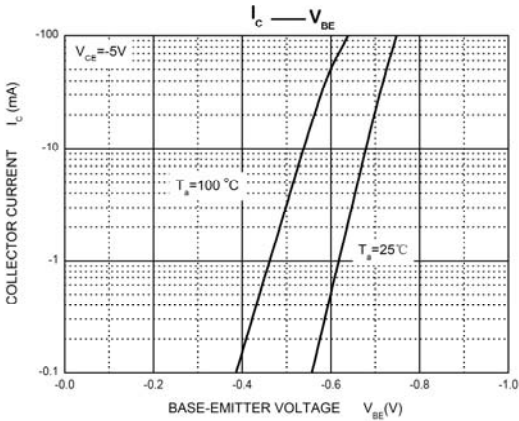


Fig.2 Forward Characteristics



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## Package Dimension

SOT-23

Unit: mm

