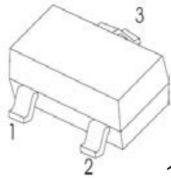


### FEATURES

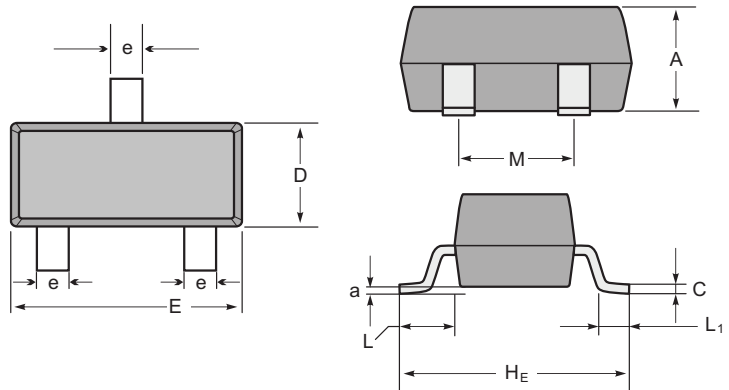
- Complementary to MMBT5551
- Ideal for Medium Power Amplification and Switching



1.BASE  
2.EMITTER  
3.COLLECTOR

### Marking

| Type number | Marking code |
|-------------|--------------|
| 2N5401      | 2L           |



SOT-23 mechanical data

| UNIT |     | A   | C    | D   | E   | H <sub>E</sub> | e   | M    | L          | L <sub>1</sub> | a    |
|------|-----|-----|------|-----|-----|----------------|-----|------|------------|----------------|------|
| mm   | max | 1.1 | 0.15 | 1.4 | 3.0 | 2.6            | 0.5 | 1.95 | 0.55 (ref) | 0.36 (ref)     | 0.0  |
|      | min | 0.9 | 0.08 | 1.2 | 2.8 | 2.2            | 0.3 | 1.7  |            |                | 0.15 |
| mil  | max | 43  | 6    | 55  | 118 | 102            | 20  | 77   | 22 (ref)   | 14 (ref)       | 0.0  |
|      | min | 35  | 3    | 47  | 110 | 87             | 12  | 67   |            |                | 6    |

### MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

| Parameter                                        | Symbol                            | Value    | Unit |
|--------------------------------------------------|-----------------------------------|----------|------|
| Collector–Base Voltage                           | V <sub>CB0</sub>                  | -160     | V    |
| Collector–Emitter Voltage                        | V <sub>CEO</sub>                  | -150     | V    |
| Emitter–Base Voltage                             | V <sub>EBO</sub>                  | -5       | V    |
| Collector Current — Continuous                   | I <sub>C</sub>                    | -0.6     | A    |
| Collector Dissipation                            | P <sub>C</sub>                    | 0.3      | W    |
| Thermal Resistance From Junction To Ambient      | R <sub>thJA</sub>                 | 416      | °C/W |
| Operation Junction and Storage Temperature Range | T <sub>J</sub> , T <sub>stg</sub> | -55~+150 | °C   |

# 2N5401

## CLASSIFICATION OF $h_{FE(1)}$

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

## 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  | $V_{(BR)CEO}$  | $I_C = -1\text{ mA}, I_B = 0$                           | -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                      | $h_{FE1}$      | $V_{CE} = -5V, I_C = -1\text{ mA}$                      | 80   |     |      |         |
|                                      | $h_{FE2}$      | $V_{CE} = -5V, I_C = -10\text{ mA}$                     | 100  |     | 300  |         |
|                                      | $h_{FE3}$      | $V_{CE} = -5V, I_C = -50\text{ mA}$                     | 50   |     |      |         |
| Collector-emitter saturation voltage | $V_{CE(sat)1}$ | $I_C = -10\text{ mA}, I_B = -1\text{ mA}$               |      |     | -0.2 | V       |
|                                      | $V_{CE(sat)2}$ | $I_C = -50\text{ mA}, I_B = -5\text{ mA}$               |      |     | -0.5 | V       |
| Base-emitter saturation voltage      | $V_{BE(sat)1}$ | $I_C = -10\text{ mA}, I_B = -1\text{ mA}$               |      |     | -1   | V       |
|                                      | $V_{BE(sat)2}$ | $I_C = -50\text{ mA}, I_B = -5\text{ mA}$               |      |     | -1   | V       |
| Transition frequency                 | $f_T$          | $V_{CE} = -25V, I_C = -10\text{ mA}, f = 30\text{ MHz}$ | 100  |     |      | MHZ     |

## RATING AND CHARACTERISTIC CURVES (2N5401)

