Elektronische Bauelemente

# MMBT5401

**-0.6A, -160V**

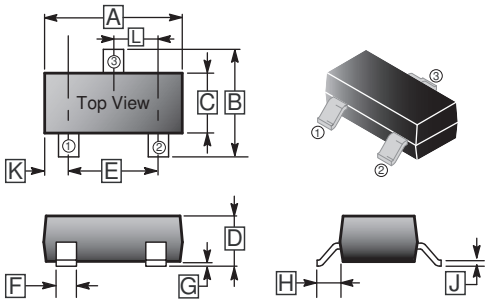
**PNP Silicon General Purpose Transistor**

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

## FEATURES

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

**SOT-23**




## MARKING

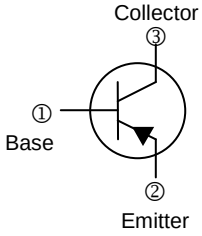
**2L**

## CLASSIFICATION OF $h_{FE}$

| Product-Rank | MMBT5401-L | MMBT5401-H |
|---|---|---|
| Range | 100~200 | 200~300 |

## PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---|---|---|
| SOT-23 | 3K | 7 inch |




| REF. | Millimeter | | REF. | Millimeter | |
|---|---|---|---|---|---|
| | Min. | Max. | | Min. | Max. |
| A | 2.80 | 3.00 | G | 0.10 REF. | |
| B | 2.25 | 2.55 | H | 0.55 REF. | |
| C | 1.20 | 1.40 | J | 0.08 | 0.15 |
| D | 0.90 | 1.15 | K | 0.5 REF. | |
| E | 1.80 | 2.00 | L | 0.95 TYP. | |
| F | 0.30 | 0.50 | | | |

## ORDER INFORMATION

| Part Number | Type |
|---|---|
| MMBT5401-□ | Lead (Pb)-free |
| MMBT5401-□-C | Lead (Pb)-free and Halogen-free |

***□=$h_{FE}$ Rank**

## ABSOLUTE MAXIMUM RATINGS ($T_A$=25℃ unless otherwise specified)

| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | -160 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | -150 | |
| Emitter-Base Voltage | $V_{EBO}$ | -5 | |
| Collector Current | $I_C$ | -0.6 | A |
| Collector Power Dissipation | $P_C$ | 0.3 | W |
| Thermal Resistance from Junction-Ambient | $R_{\theta JA}$ | 416 | ℃/W |
| Junction & Storage Temperature | $T_J$, $T_{STG}$ | 150, -55~150 | ℃ |

## ELECTRICAL CHARACTERISTICS ($T_A$=25℃ unless otherwise specified)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | -160 | - | - | V | $I_C$= -100μA, $I_E$=0 |
| Collector-Emitter Breakdown Voltage [1] | $V_{(BR)CEO}$ | -150 | - | - | | $I_C$= -1mA, $I_B$=0 |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | -5 | - | - | | $I_E$= -10μA, $I_C$=0 |
| Collector Cut-off Current | $I_{CBO}$ | - | - | -0.1 | μA | $V_{CB}$= -120V, $I_E$=0 |
| Emitter Cut-off Current | $I_{EBO}$ | - | - | -0.1 | | $V_{EB}$= -4V, $I_C$=0 |
| DC Current Gain [1] | $h_{FE}$ | 80 | - | - | | $V_{CE}$= -5V, $I_C$= -1mA |
| | | 100 | - | 300 | | $V_{CE}$= -5V, $I_C$= -10mA |
| | | 50 | - | - | | $V_{CE}$= -5V, $I_C$= -50mA |
| Collector-Emitter Saturation Voltage [1] | $V_{CE(sat)}$ | - | - | -0.2 | V | $I_C$= -10mA, $I_B$= -1mA |
| | | - | - | -0.5 | | $I_C$= -50mA, $I_B$= -5mA |
| Base-Emitter Saturation Voltage [1] | $V_{BE(sat)}$ | - | - | -1 | V | $I_C$= -10mA, $I_B$= -1mA |
| | | - | - | -1 | | $I_C$= -50mA, $I_B$= -5mA |
| Transition Frequency | $f_T$ | 100 | - | - | MHz | $V_{CE}$= -5V, $I_C$= -10mA, f=30MHz |

Note:
1. Pulse test: pulse width≦300μs, duty cycle≦2%.

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## CHARACTERISTICS CURVE