

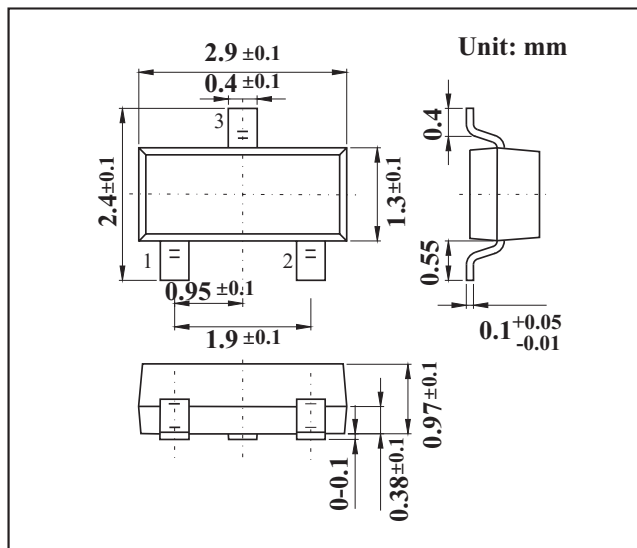
## SOT-23 Plastic-Encapsulate Transistors

### Features

- Collector Current Capability  $I_C=0.5A$
- Collector Emitter Voltage  $V_{CEO}=60V$
- Driver transistor
- NPN Transistors

### MECHANICAL DATA

- Case style:SOT-23molded plastic
- Mounting position:any



## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

| Parameter                      | Symbol    | Rating     | Unit |
|--------------------------------|-----------|------------|------|
| Collector - Base Voltage       | $V_{CBO}$ | 60         | V    |
| Collector - Emitter Voltage    | $V_{CEO}$ | 60         |      |
| Emitter - Base Voltage         | $V_{EBO}$ | 4          |      |
| Collector Current - Continuous | $I_C$     | 0.5        | A    |
| Collector Power Dissipation    | $P_C$     | 300        | mW   |
| Junction Temperature           | $T_J$     | 150        | °C   |
| Storage Temperature Range      | $T_{stg}$ | -55 to 150 |      |

### PACKAGE INFORMATION

| Device            | Package | Shipping       |
|-------------------|---------|----------------|
| MMBTA05 (KMBTA05) | SOT-23  | 3000/Tape&Reel |

| Parameter                            | Symbol        | Test Conditions                          | Min | Typ | Max  | Unit |
|--------------------------------------|---------------|------------------------------------------|-----|-----|------|------|
| Collector- base breakdown voltage    | $V_{CBO}$     | $I_C = 100 \mu A, I_E = 0$               | 60  |     |      | V    |
| Collector- emitter breakdown voltage | $V_{CEO}$     | $I_C = 1 mA, I_B = 0$                    | 60  |     |      |      |
| Emitter - base breakdown voltage     | $V_{EBO}$     | $I_E = 100 \mu A, I_C = 0$               | 4   |     |      |      |
| Collector-base cut-off current       | $I_{CBO}$     | $V_{CB} = 60 V, I_E = 0$                 |     |     | 100  | nA   |
| Collector- emitter cut-off current   | $I_{CEO}$     | $V_{CE} = 60 V, I_E = 0$                 |     |     | 1000 |      |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = 4 V, I_C = 0$                  |     |     | 100  |      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 100 mA, I_B = 10 mA$              |     |     | 0.25 | V    |
| Base - emitter saturation voltage    | $V_{BE(sat)}$ | $I_C = 100 mA, I_B = 10 mA$              |     |     | 1.2  |      |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE} = 1 V, I_C = 100 mA$             |     |     | 1.2  |      |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE} = 1 V, I_C = 10 mA$              | 100 |     | 400  |      |
|                                      | $h_{FE(2)}$   | $V_{CE} = 1 V, I_C = 100 mA$             | 100 |     |      |      |
| Transition frequency                 | $f_T$         | $V_{CE} = 2 V, I_C = 10 mA, f = 100 MHz$ | 100 |     |      | MHz  |

### Marking

|         |    |
|---------|----|
| Marking | 1H |
|---------|----|

## RATINGS AND CHARACTERISTIC CURVES

### ■ Typical Characteristics

