

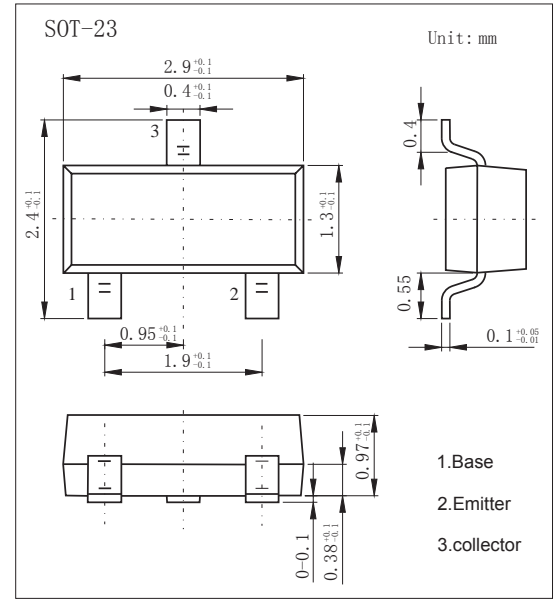
## SOT-23 Plastic-Encapsulate Transistors

### Features

- Collector Current Capability  $I_c = -0.5A$
- Collector Emitter Voltage  $V_{CE0} = -60V$
- PNP Transistors

### MECHANICAL DATA

- Case style: SOT-23 molded 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            | $P_c$           | 225        | mW    |
| Derate Above 25°C                      |                 | 1.8        | mW/°C |
| Thermal Resistance Junction-to-Ambient | $R_{\theta JA}$ | 556        | °C/W  |
| Junction Temperature                   | $T_J$           | 150        | °C    |
| Storage Temperature range              | $T_{stg}$       | -55 to 150 |       |

### PACKAGE INFORMATION

| Device  | Package | Shipping       |
|---------|---------|----------------|
| MMBTA55 | 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       | $I_{CBO}$     | $V_{CB} = -60 V, I_E = 0$                |     |     | -0.1  | uA   |
| Collector cut-off current            | $I_{CES}$     | $V_{CE} = -60 V, I_E = 0$                |     |     | -0.1  |      |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -4V, I_c = 0$                  |     |     | -0.1  |      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_c = -100 mA, I_B = -10mA$             |     |     | -0.25 | V    |
| Base - emitter saturation voltage    | $V_{BE(sat)}$ | $I_c = -100 mA, I_B = -10mA$             |     |     | -1.2  |      |
| Base - emitter on voltage            | $V_{BE(on)}$  | $V_{CE} = -1V, I_c = -100mA$             |     |     | -1.2  |      |
| DC current gain                      | $h_{FE}$      | $V_{CE} = -1V, I_c = -10mA$              | 100 |     |       |      |
|                                      |               | $V_{CE} = -1V, I_c = -100mA$             | 100 |     |       |      |
| Transition frequency                 | $f_T$         | $V_{CE} = -1V, I_c = -100mA, f = 100MHz$ | 50  |     |       | MHz  |

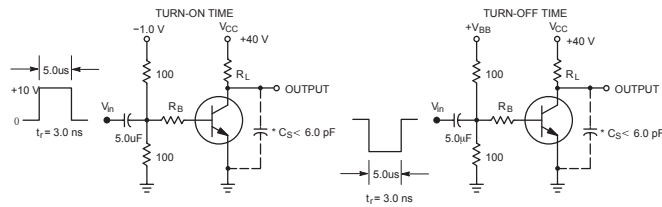
Note. Pulse Test: Pulse Width  $\leq 300 \mu s$ , Duty Cycle  $\leq 2.0\%$ .

### Marking

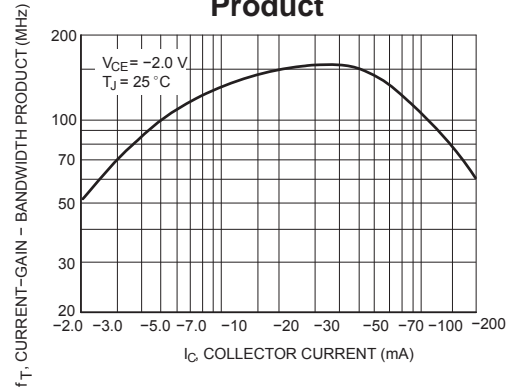
|         |    |
|---------|----|
| Marking | 2H |
|---------|----|

## Typical Characteristics

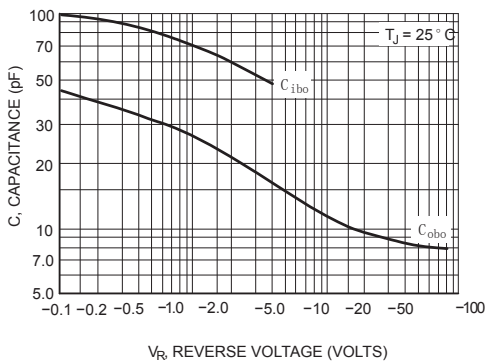
### Figure 1. Switching Time Test Circuits



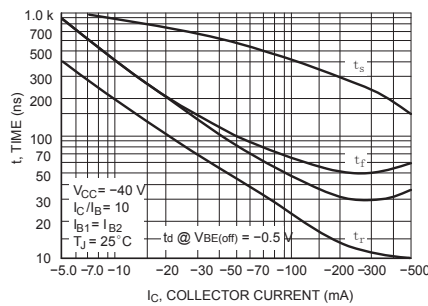
### Figure 2. Current-Gain — Bandwidth Product



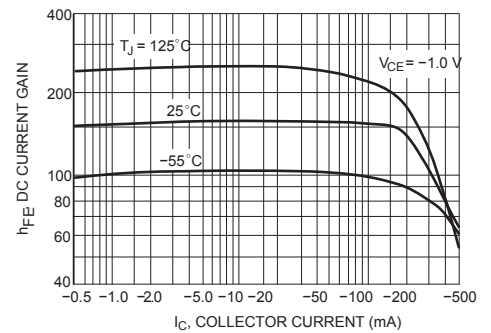
### Figure 3. Capacitance



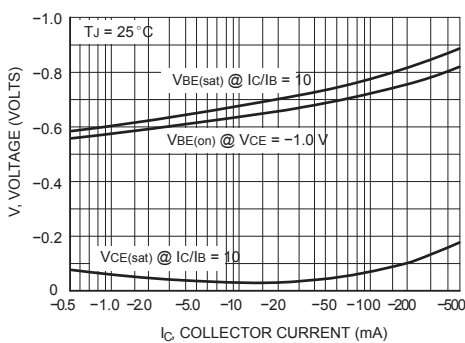
### Figure 4. Switching Time



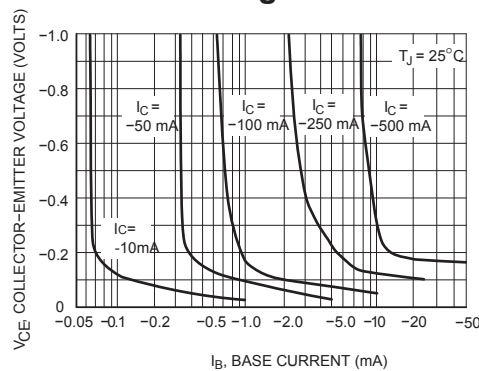
### Figure 5. DC Current Gain



### Figure 6. "ON" Voltages



### Figure 7. Collector Saturation Region



### Figure 8. Base-Emitter Temperature Coefficient

