

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

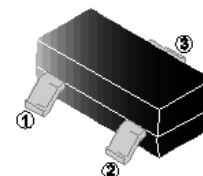
### FEATURES

- Ideal for Medium Power Amplification and Switching
- Complementary to MMBT5401-C

**SOT-23**

### MARKING

G1



### CLASSIFICATION OF $h_{FE}$

|              |              |              |
|--------------|--------------|--------------|
| Product-Rank | MMBT5551-L-C | MMBT5551-H-C |
| Range        | 100~200      | 200~300      |

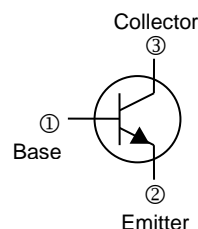
### PACKAGE INFORMATION

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

### ORDER INFORMATION

|              |                                 |
|--------------|---------------------------------|
| Part Number  | Type                            |
| MMBT5551-□-C | Lead (Pb)-free and Halogen-free |

\*□= $h_{FE}$  Rank



### ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter                                | Symbol          | Ratings      | Unit                 |
|------------------------------------------|-----------------|--------------|----------------------|
| Collector-Base Voltage                   | $V_{CBO}$       | 180          | V                    |
| Collector-Emitter Voltage                | $V_{CEO}$       | 160          | V                    |
| Emitter-Base Voltage                     | $V_{EBO}$       | 6            | V                    |
| Collector Current                        | $I_C$           | 0.6          | A                    |
| Collector Power Dissipation              | $P_C$           | 300          | mW                   |
| Thermal Resistance from Junction-Ambient | $R_{\theta JA}$ | 416          | $^{\circ}\text{C/W}$ |
| Junction, Storage Temperature Range      | $T_J, T_{STG}$  | 150, -55~150 | $^{\circ}\text{C}$   |

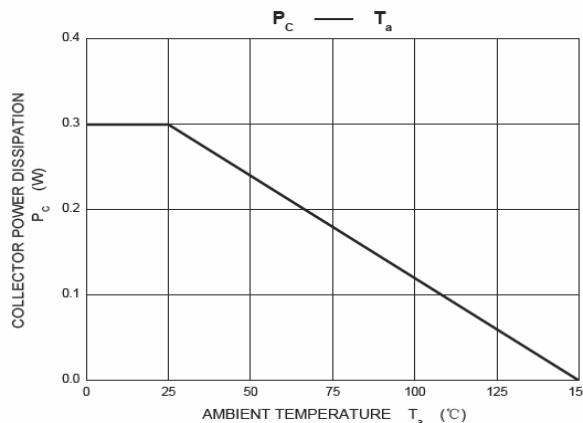
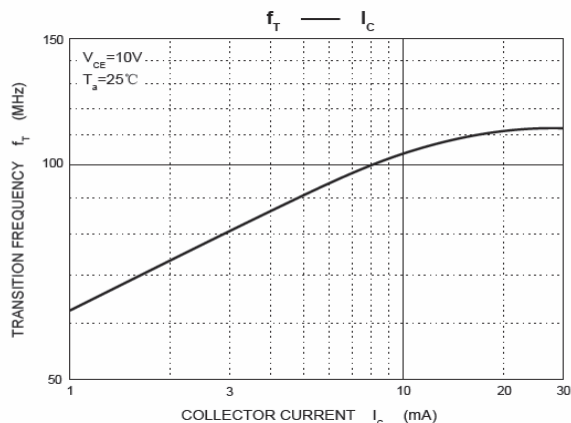
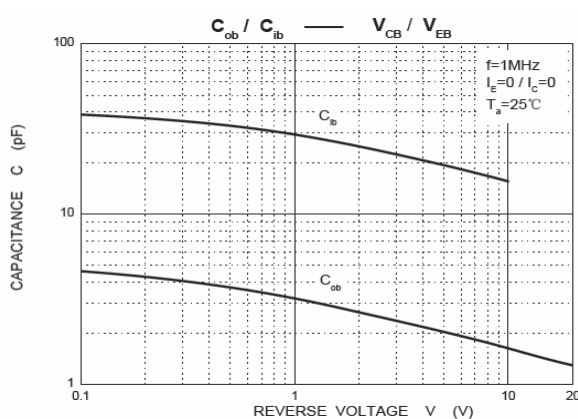
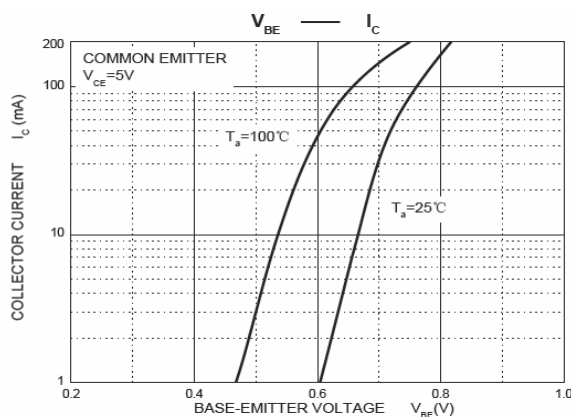
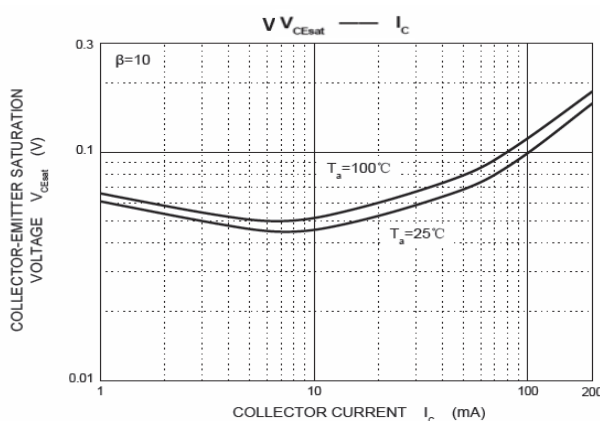
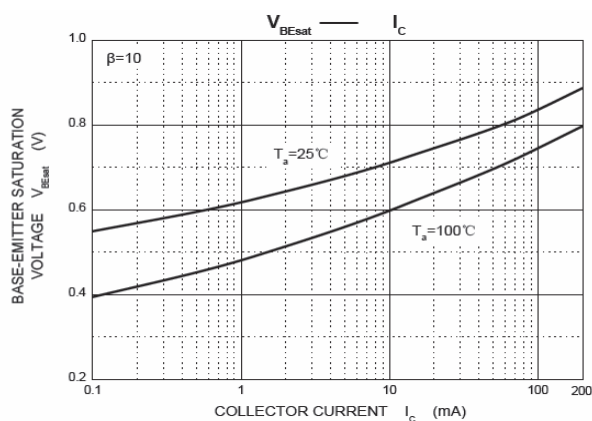
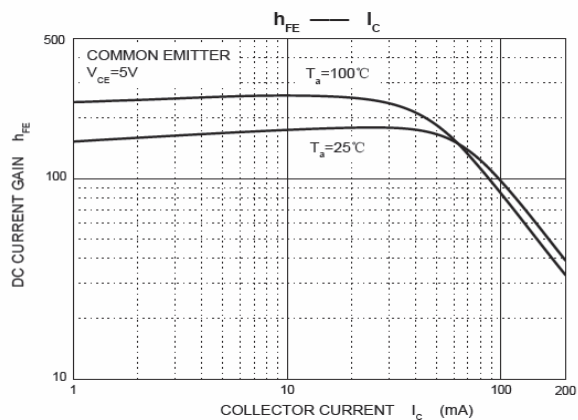
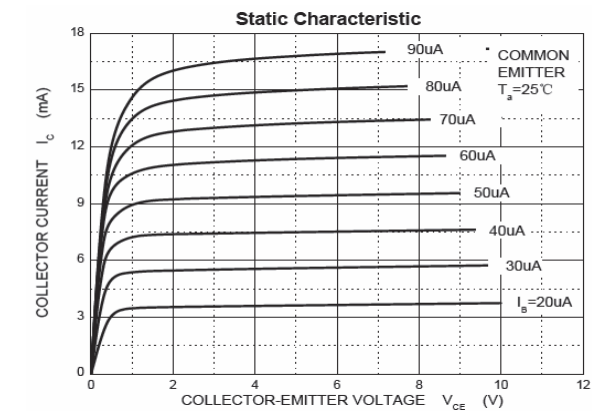
### ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter                                         | Symbol        | Min. | Typ. | Max. | Unit | Test Conditions                                       |
|---------------------------------------------------|---------------|------|------|------|------|-------------------------------------------------------|
| Collector-Base Breakdown Voltage                  | $V_{(BR)CBO}$ | 180  | -    | -    | V    | $I_C=100\mu\text{A}, I_E=0$                           |
| Collector-Emitter Breakdown Voltage               | $V_{(BR)CEO}$ | 160  | -    | -    | V    | $I_C=1\text{mA}, I_B=0$                               |
| Emitter-Base Breakdown Voltage                    | $V_{(BR)EBO}$ | 6    | -    | -    | V    | $I_E=10\mu\text{A}, I_C=0$                            |
| Collector Cut-off Current                         | $I_{CBO}$     | -    | -    | 50   | nA   | $V_{CB}=120\text{V}, I_E=0$                           |
| Emitter Cut-off Current                           | $I_{EBO}$     | -    | -    | 50   | nA   | $V_{EB}=4\text{V}, I_C=0$                             |
| DC Current Gain <sup>1</sup>                      | $h_{FE}$      | 80   | -    | -    |      | $V_{CE}=5\text{V}, I_C=1\text{mA}$                    |
|                                                   |               | 100  | -    | 300  |      | $V_{CE}=5\text{V}, I_C=10\text{mA}$                   |
|                                                   |               | 50   | -    | -    |      | $V_{CE}=5\text{V}, I_C=50\text{mA}$                   |
| Collector-Emitter Saturation Voltage <sup>1</sup> | $V_{CE(sat)}$ | -    | -    | 0.15 | V    | $I_C=10\text{mA}, I_B=1\text{mA}$                     |
|                                                   |               | -    | -    | 0.2  |      | $I_C=50\text{mA}, I_B=5\text{mA}$                     |
| Base-Emitter Saturation Voltage <sup>1</sup>      | $V_{BE(sat)}$ | -    | -    | 1    | V    | $I_C=10\text{mA}, I_B=1\text{mA}$                     |
|                                                   |               | -    | -    | 1    |      | $I_C=50\text{mA}, I_B=5\text{mA}$                     |
| Transition Frequency                              | $f_T$         | 100  | -    | 300  | MHz  | $V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$ |
| Collector Output Capacitance                      | $C_{ob}$      | -    | -    | 6    | pF   | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$             |

Note:

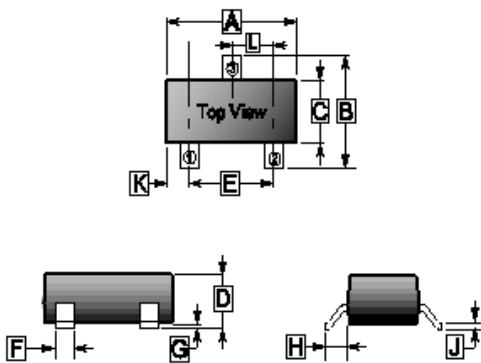
1. Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$ .

**TYPICAL CHARACTERISTICS**



**PACKAGE OUTLINE DIMENSIONS**

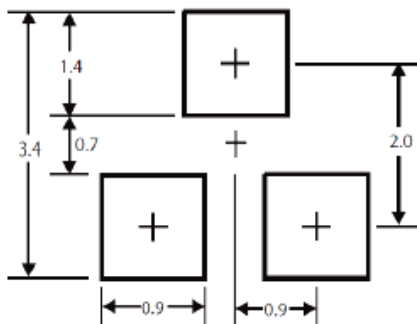
**SOT-23**



| REF. | Millimeter |      |
|------|------------|------|
|      | Min.       | Max. |
| A    | 2.65       | 3.10 |
| B    | 2.10       | 3.00 |
| C    | 1.10       | 1.80 |
| D    | 0.89       | 1.40 |
| E    | 1.70       | 2.30 |
| F    | 0.28       | 0.55 |
| G    | 0          | 0.18 |
| H    | 0.55 REF.  |      |
| J    | 0.05       | 0.26 |
| K    | 0.60 REF.  |      |
| L    | 0.95 TYP.  |      |

**MOUNTING PAD LAYOUT**

**SOT-23**



\*Dimensions in millimeters