

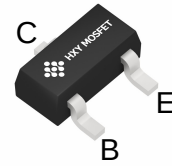


## Features

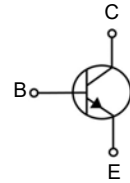
- For Switching and Amplifier Applications

## Package Marking and Ordering Information

| Product ID   | Pack   | Marking | Qty(PCS) |
|--------------|--------|---------|----------|
| HMMBTA06LT1G | SOT-23 | 1GM     | 3000     |



SOT-23



## Maximum Ratings (Ta=25°C unless otherwise noted)

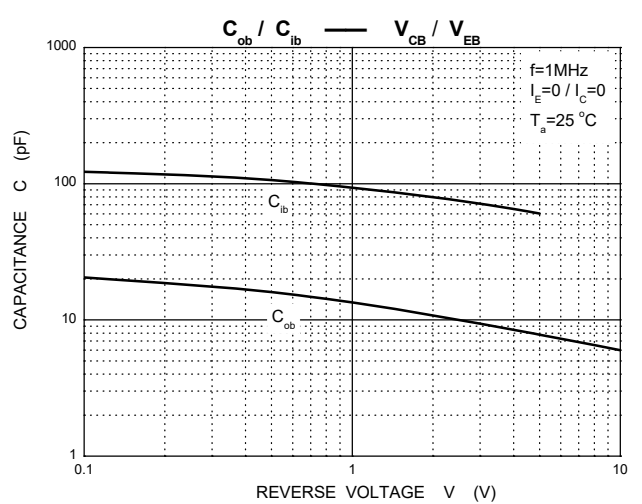
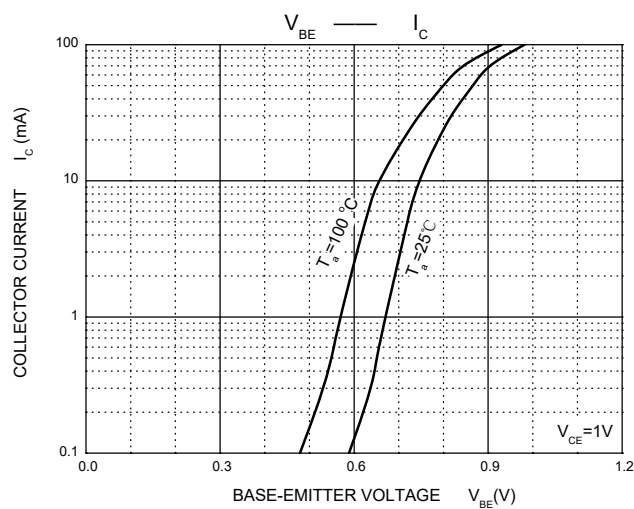
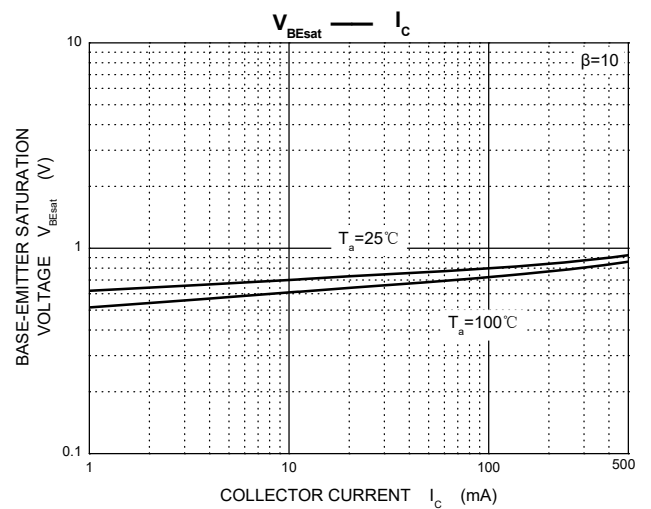
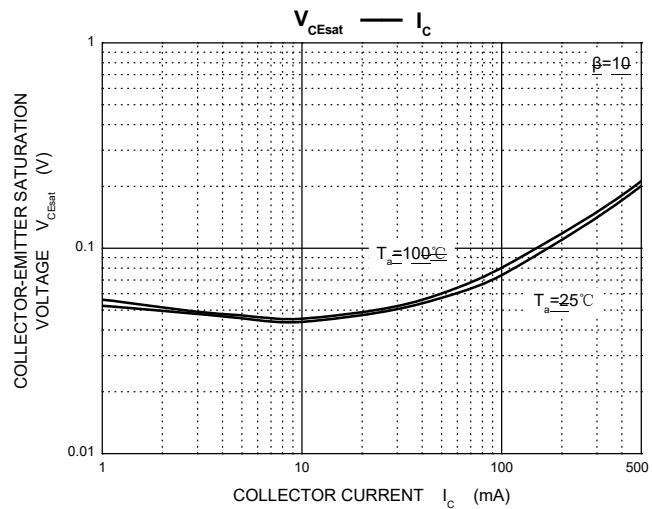
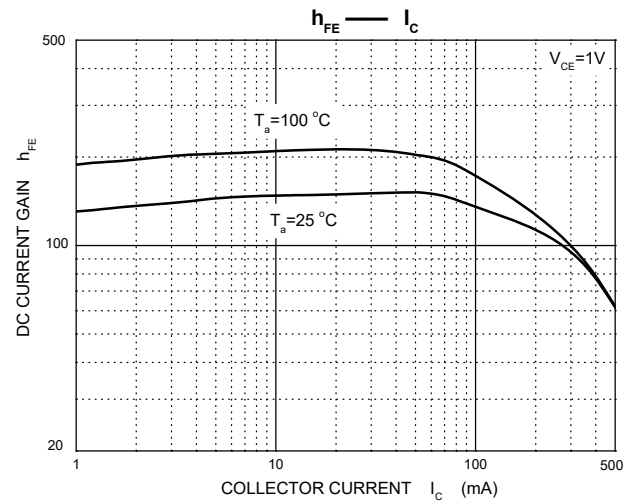
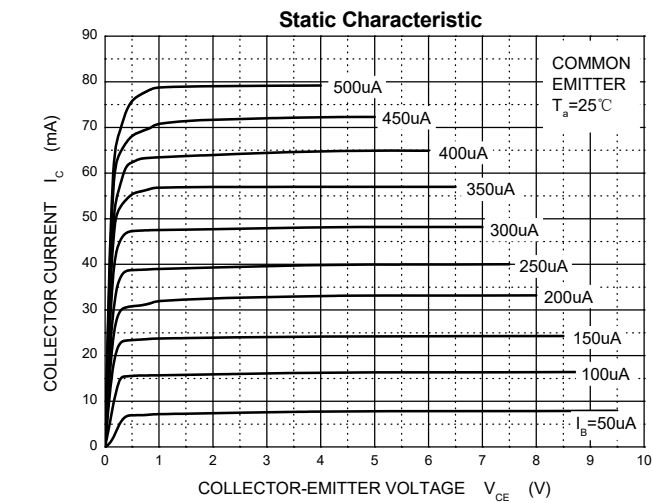
| Parameter                                   | Symbol          | Limit    | Unit |
|---------------------------------------------|-----------------|----------|------|
| Collector-Base Voltage                      | $V_{CBO}$       | 80       | V    |
| Collector-Emitter Voltage                   | $V_{CEO}$       | 80       | V    |
| Emitter-Base Voltage                        | $V_{EBO}$       | 4        | V    |
| Collector Current                           | $I_C$           | 120      | mA   |
| Collector Power Dissipation                 | $P_C$           | 300      | mW   |
| Thermal Resistance From Junction To Ambient | $R_{\theta JA}$ | 416      | °C/W |
| Junction Temperature                        | $T_j$           | 150      | °C   |
| Storage Temperature                         | $T_{stg}$       | -55~+150 | °C   |

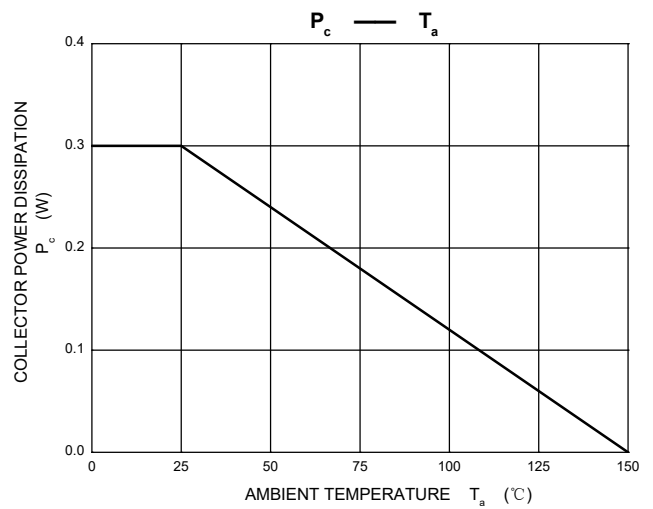
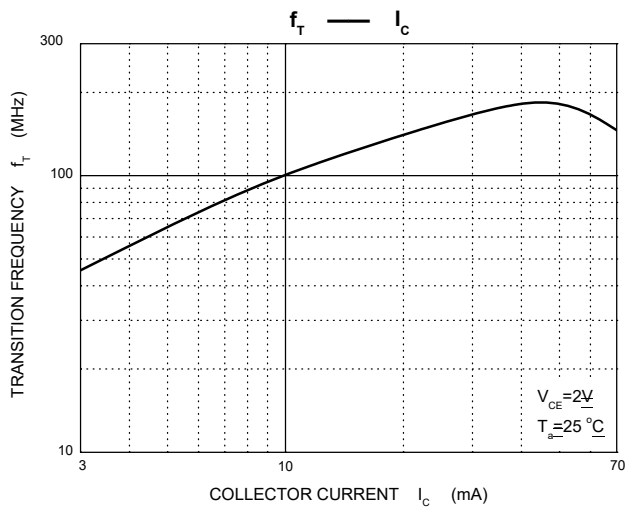
## Electrical Characteristics (Ta=25°C unless otherwise specified)

| Parameter                            | Symbol        | Test conditions                 | Min | Typ | Max  | Unit    |
|--------------------------------------|---------------|---------------------------------|-----|-----|------|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=0.1mA, I_E=0$              | 80  |     |      | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1mA, I_B=0$                | 80  |     |      | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=0.1mA, I_C=0$              | 4   |     |      | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=80V, I_E=0$             |     |     | 0.1  | $\mu A$ |
| Collector cut-off current            | $I_{CEO}$     | $V_{CE}=60V, I_B=0$             |     |     | 1    | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=3V, I_C=0$              |     |     | 0.1  | $\mu A$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE}=1V, I_C=10mA$           | 100 |     | 400  |         |
|                                      | $h_{FE(2)}$   | $V_{CE}=1V, I_C=100mA$          | 30  |     |      |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=100mA, I_B=10mA$           |     |     | 0.25 | V       |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C=100mA, I_B=10mA$           |     |     | 1.2  | V       |
| Transition frequency                 | $f_T$         | $V_{CE}=2V, I_C=10mA, f=100MHz$ | 100 |     |      | MHz     |



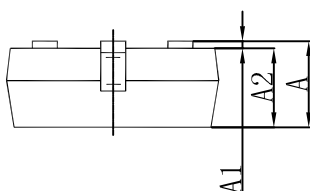
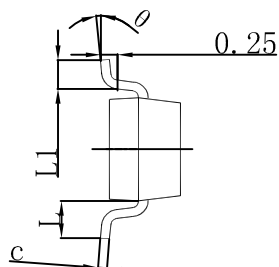
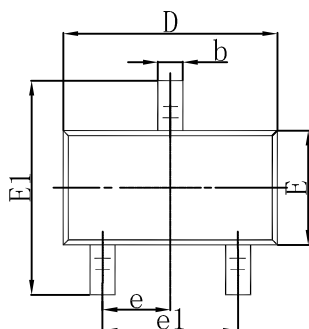
## Typical Characteristics





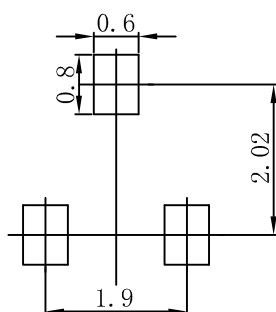


## SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950 TYP                 |       | 0.037 TYP            |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550 REF                 |       | 0.022 REF            |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## SOT-23 Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.



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