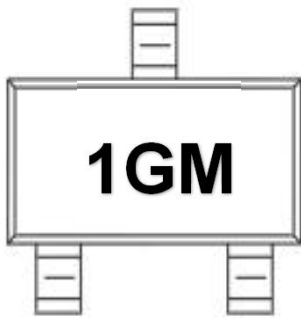


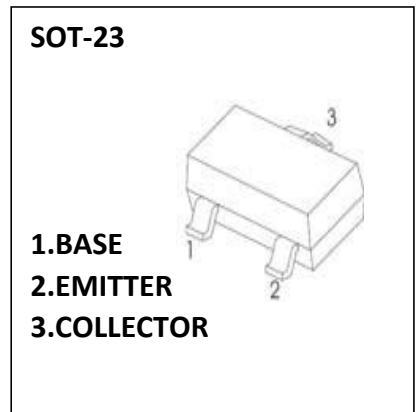
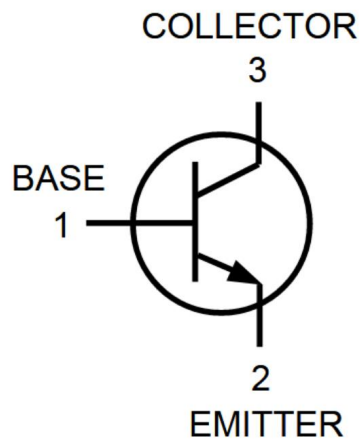
## SOT-23 Plastic-Encapsulate MOSFETS

### MMBTA06 TRANSISTOR (NPN)

**MARKING:**



**Equivalent Circuit:**



**FEATURES:**

- ※ Complimentary Type PNP Transistor MMBTA56
- ※ For Switching and Amplifier Applications

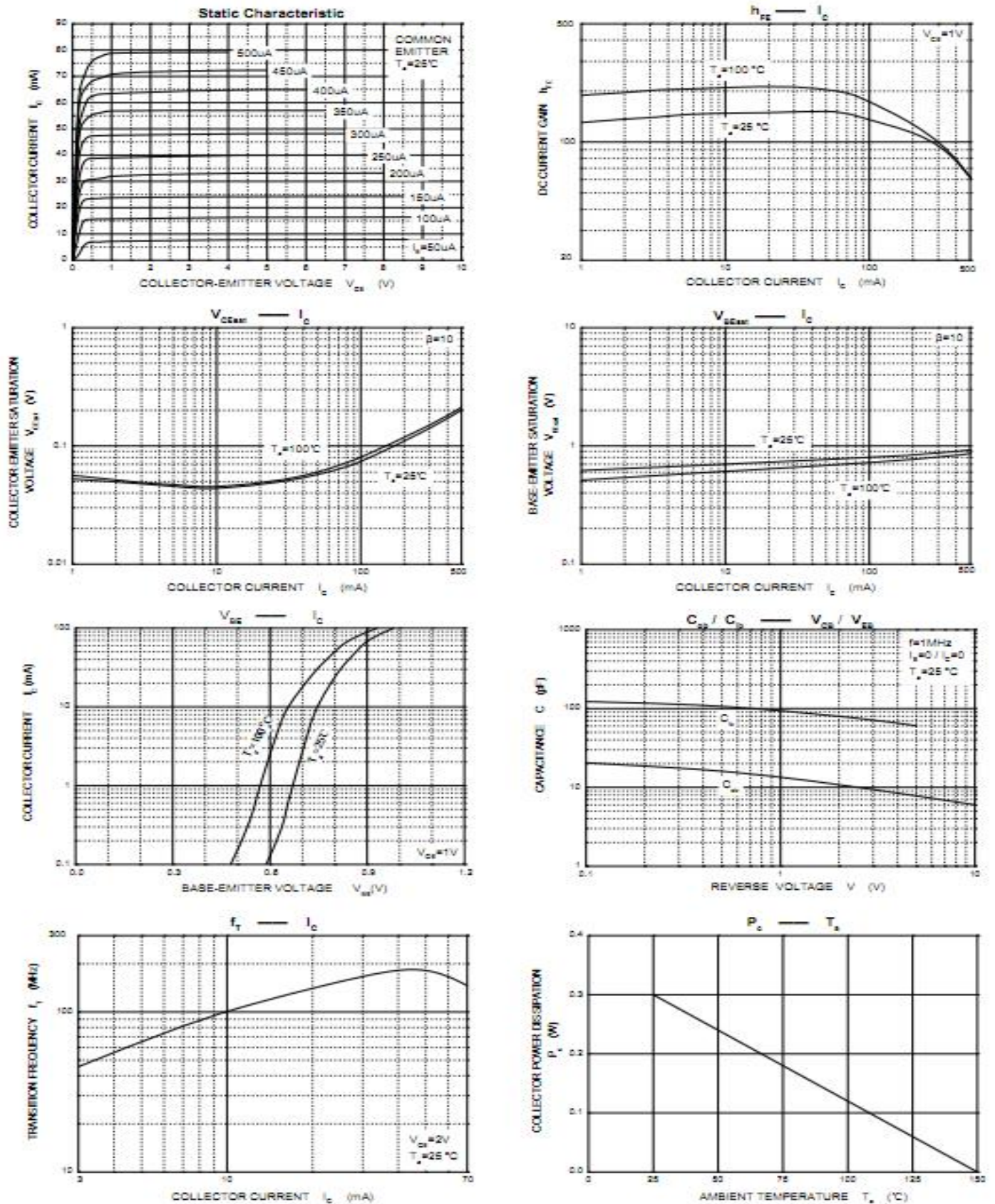
**MAXIMUM RATINGS (Ta=25°C unless otherwise noted)**

| Parameter                                   | Symbol | Value    | Unit |
|---|--------|----------|------|
| Collector-Base Voltage                      | VCBO   | 80       | V    |
| Collector-Emitter Voltage                   | VCEO   | 80       | V    |
| Emitter-Base Voltage                        | VEBO   | 4        | V    |
| Collector Current                           | IC     | 500      | mA   |
| Collector Power Dissipation                 | PC     | 300      | mW   |
| Thermal Resistance From Junction To Ambient | RθJA   | 417      | °C/W |
| Junction Temperature                        | Tj     | 150      | °C   |
| Storage Temperature                         | Tstg   | -55~+150 | °C   |

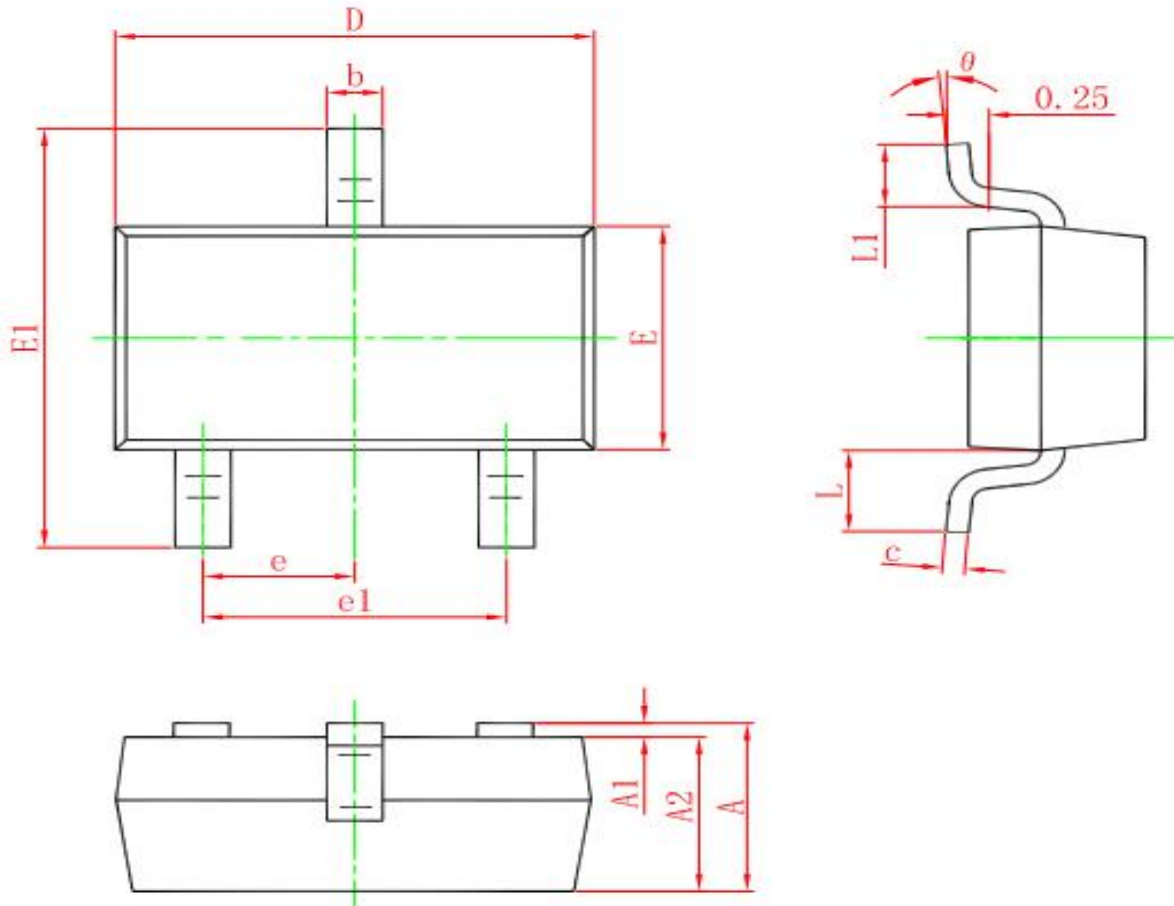
**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

| Parameter                            | Symbol   | Test Condition               | Min | Typ | Max  | Unit |
|--------------------------------------|----------|------------------------------|-----|-----|------|------|
| Collector-base breakdown voltage     | V(BR)CBO | IC= 100μA, IE=0              | 80  |     |      | V    |
| Collector-emitter breakdown voltage  | V(BR)CEO | IC= 1mA, IB=0                | 80  |     |      | V    |
| Emitter-base breakdown voltage       | V(BR)EBO | IE=100μA, IC=0               | 4   |     |      | V    |
| Collector cut-off current            | ICBO     | VCB=80 V , IE=0              |     |     | 0.1  | μA   |
| Collector cut-off current            | ICEO     | VCB=60V , IE=0               |     |     | 1    | μA   |
| Emitter cut-off current              | IEBO     | VEB= 3V , IC=0               |     |     | 0.1  | μA   |
| DC current gain                      | hFE      | VCE=1V, IC= 10mA             | 100 |     | 400  |      |
|                                      | hFE      | VCE=1V, IC= 100mA            | 100 |     |      |      |
| Collector-emitter saturation voltage | VCE(sat) | IC=100 mA, IB= 10mA          |     |     | 0.25 | V    |
| Base-emitter saturation voltage      | VBE(sat) | IC=100 mA, IB= 10mA          |     |     | 1.2  | V    |
| Transition frequency                 | fT       | VCE=2V, IC= 10mA<br>f=100MHz | 100 |     |      | MHz  |

## TYPICAL ELECTRICAL AND THERMAL 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°    |