

SOT-23 Plastic-Encapsulate Transistors

MMBTH10 TRANSISTOR (NPN)

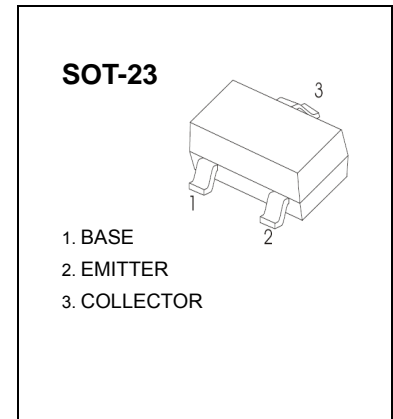
FEATURES

- VHF/UHF Transistor

MARKING: 3EM

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

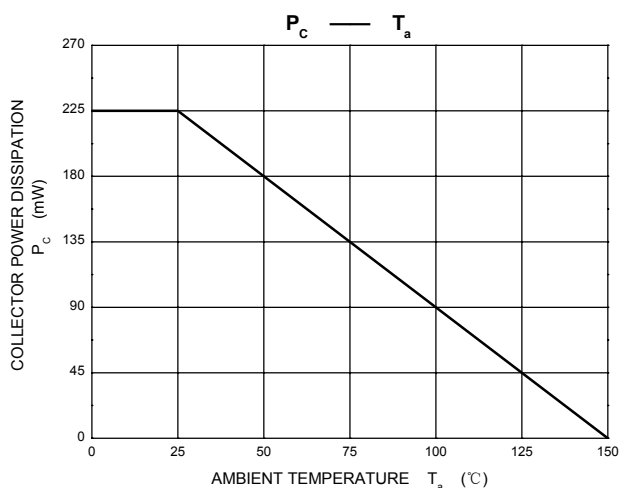
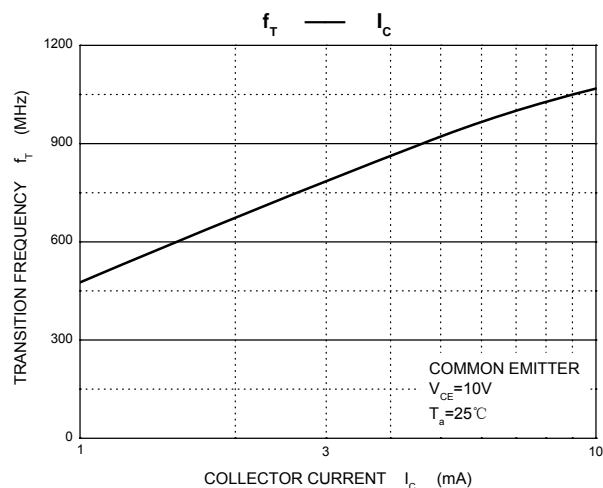
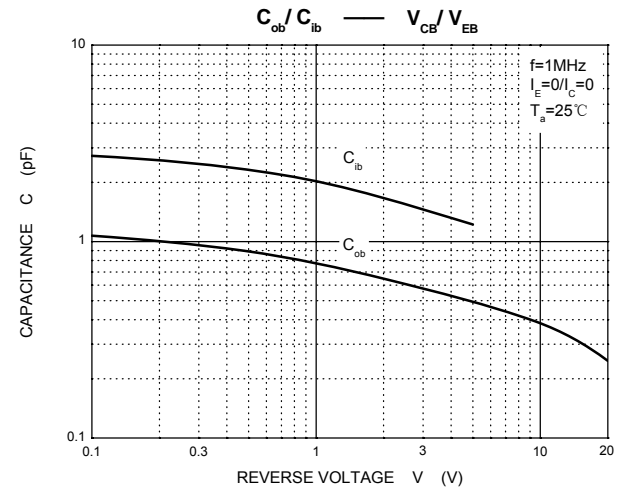
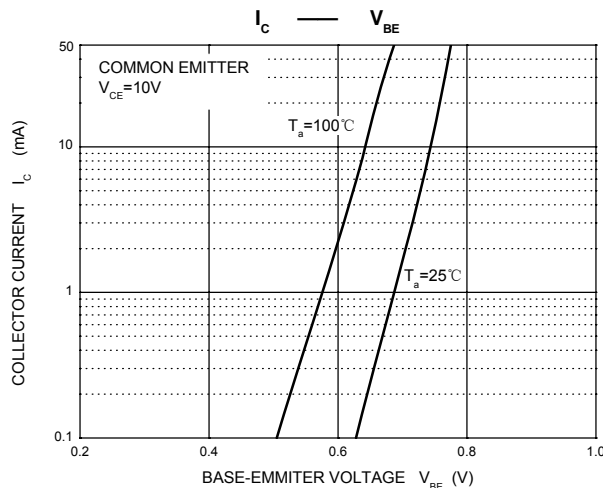
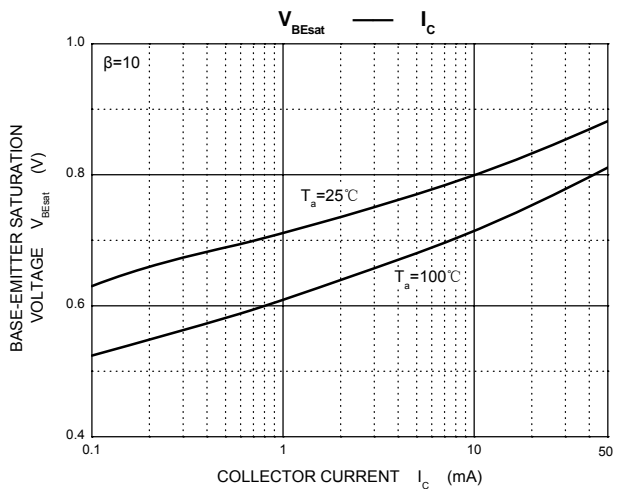
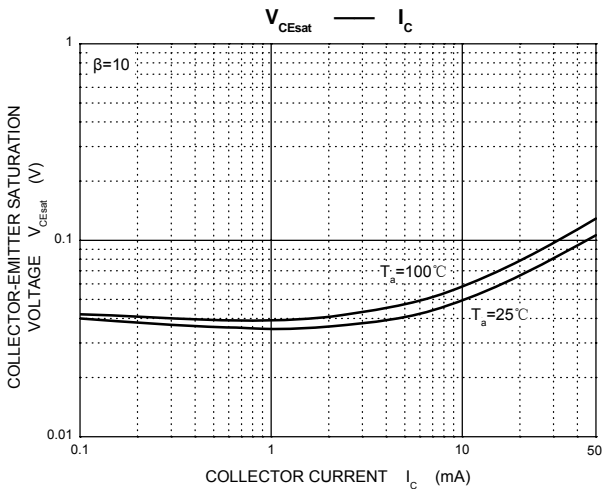
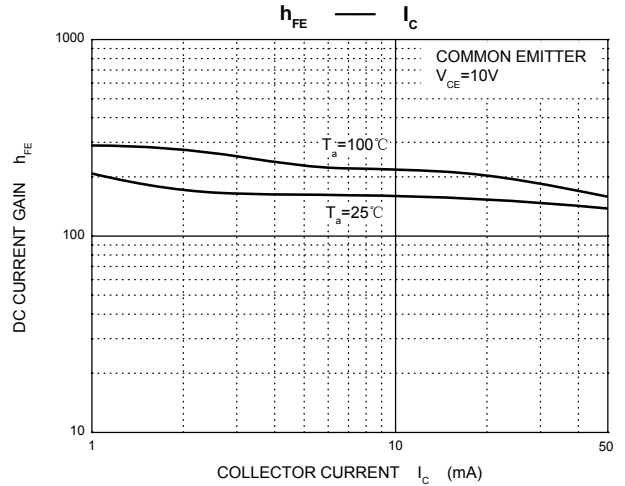
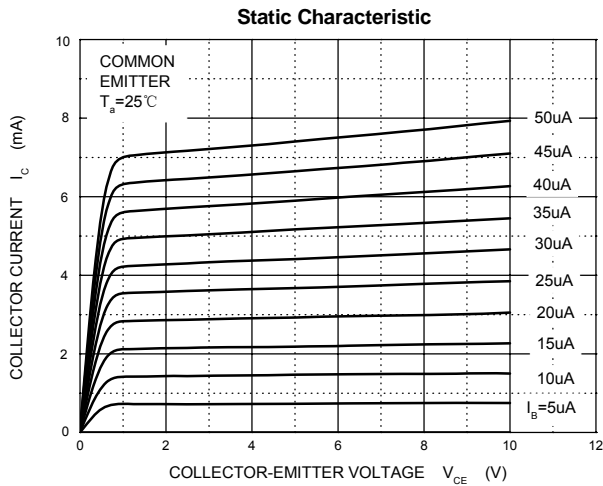
| Symbol | Parameter | Value | Unit |
|------------------|---|----------|------|
| V _{CB0} | Collector-Base Voltage | 30 | V |
| V _{CEO} | Collector-Emitter Voltage | 25 | V |
| V _{EBO} | Emitter-Base Voltage | 3 | V |
| I _C | Collector Current | 50 | mA |
| P _C | Collector Power Dissipation | 225 | mW |
| R _{θJA} | Thermal Resistance From Junction To Ambient | 556 | °C/W |
| T _J | Junction Temperature | 150 | °C |
| T _{stg} | Storage Temperature | -55~+150 | °C |



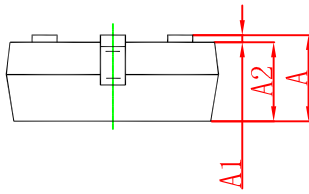
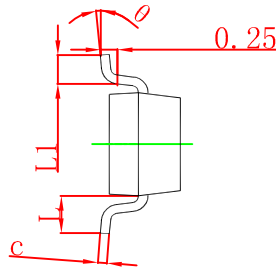
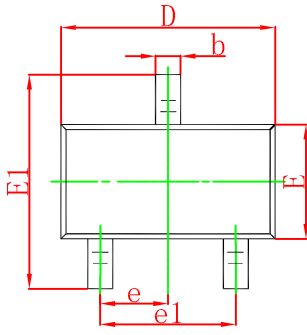
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|----------------------|---|-----|-----|------|------|
| Collector-base breakdown voltage | V _{(BR)CBO} | I _C =100μA, I _E =0 | 30 | | | V |
| Collector-emitter breakdown voltage | V _{(BR)CEO} | I _C =1mA, I _B =0 | 25 | | | V |
| Emitter-base breakdown voltage | V _{(BR)EBO} | I _E =10μA, I _C =0 | 3 | | | V |
| Collector cut-off current | I _{CBO} | V _{CB} =25V, I _E =0 | | | 0.1 | μA |
| Emitter cut-off current | I _{EBO} | V _{EB} =2V, I _C =0 | | | 0.1 | μA |
| DC current gain | h _{FE} | V _{CE} =10V, I _C =4mA | 60 | | | |
| Collector-emitter saturation voltage | V _{CE(sat)} | I _C =4mA, I _B =0.4mA | | | 0.5 | V |
| Base-emitter voltage | V _{BE} | V _{CE} =10V, I _C =4mA | | | 0.95 | V |
| Transition frequency | f _T | V _{CE} =10V, I _C =4mA f=100MHz | 650 | | | MHz |
| Collector output capacitance | C _{ob} | V _{CB} =10V, I _E =0, f=1MHz | | | 0.7 | pF |

SOT-23 Plastic-Encapsulate Transistors



SOT-23 Plastic-Encapsulate Transistors



| 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° |