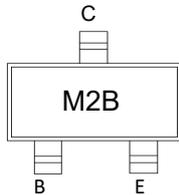
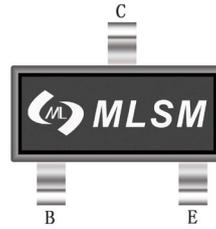


Features

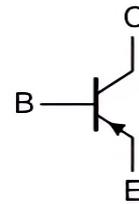
- Epitaxial planar die construction
- Complementary NPN Type available(MMBT2222)



Marking and pin assignment



SOT-23 top view



Schematic diagram



Pb-Free



RoHS



HAL

Halogen-Free
Maximum Ratings (Ta=25°C unless otherwise noted)

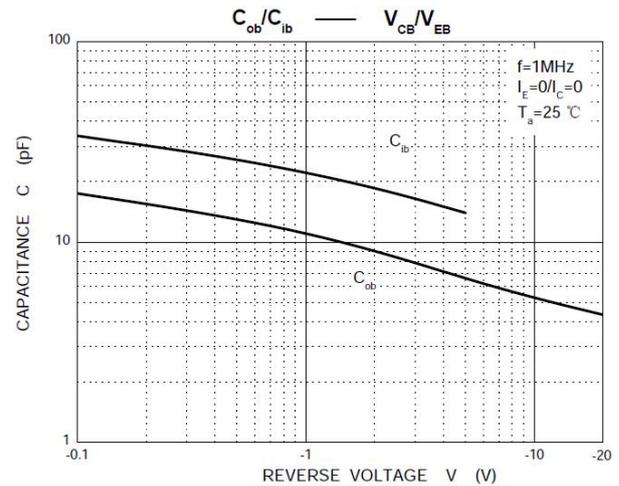
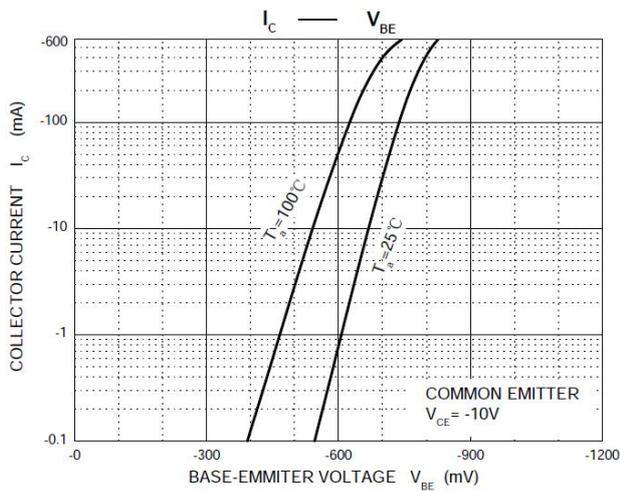
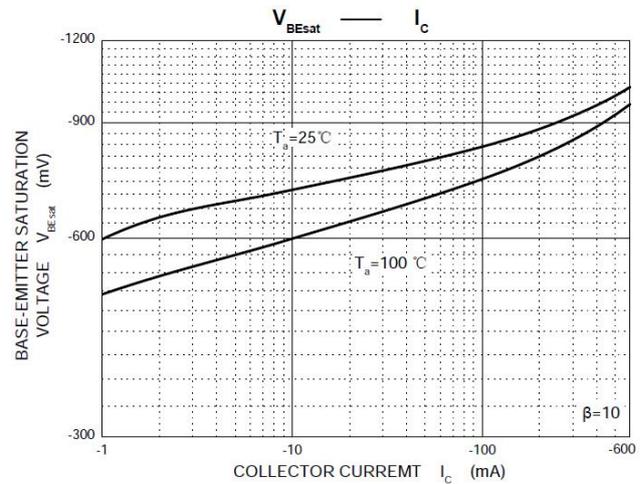
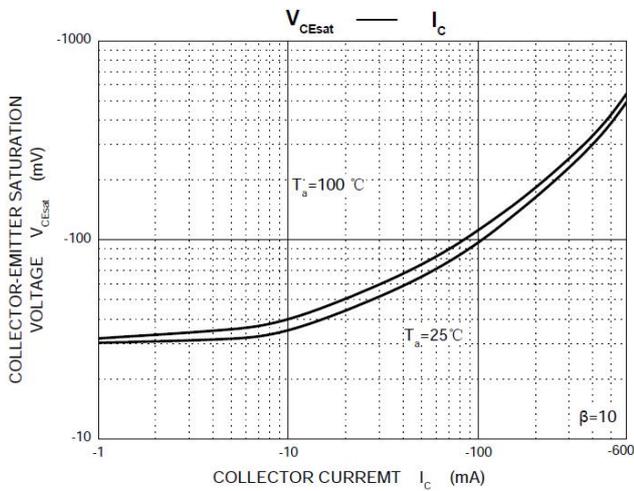
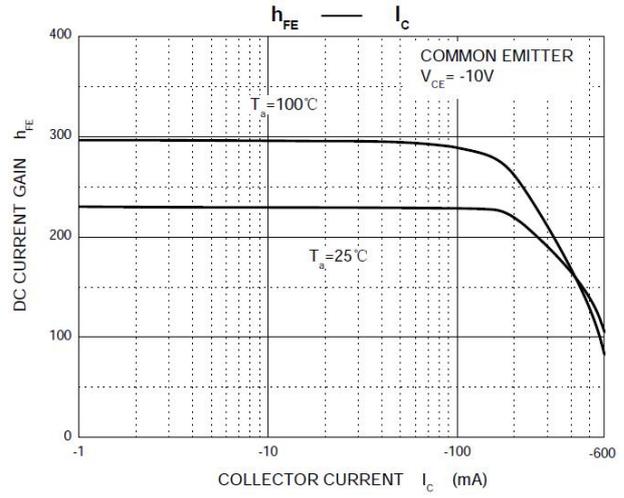
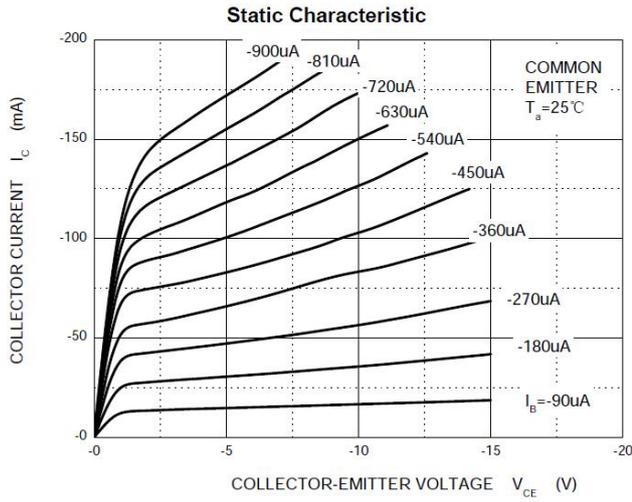
| Symbol | Parameter | Value | Unit |
|-----------------------------------|---|-----------|------|
| V _{CBO} | Collector-Base Voltage | -60 | V |
| V _{CEO} | Collector-Emitter Voltage | -40 | V |
| V _{EBO} | Emitter-Base Voltage | -5 | V |
| I _C | Collector Current -Continuous | -600 | mA |
| P _D | Total Device Dissipation | 250 | mW |
| R _{θJA} | Thermal Resistance Junction to Ambient | 500 | °C/W |
| T _J , T _{STG} | Operating and Storage Temperature Range | -55~ +150 | °C |

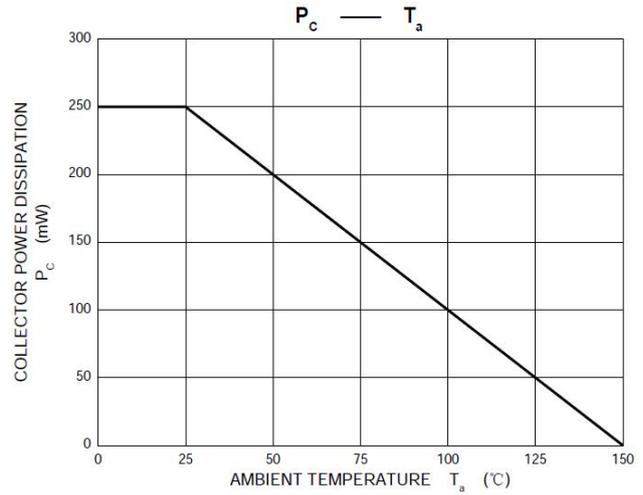
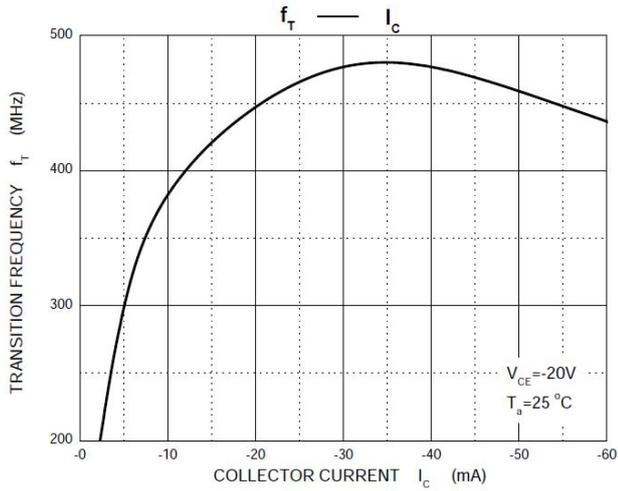
Electrical Characteristics (Ta=25°C unless otherwise specified)

| Symbol | Parameter | Test conditions | Min | Typ | Max | Unit |
|------------------------|--------------------------------------|--|-----|-----|-------|------|
| V _{(BR)CBO} | Collector-base breakdown voltage | I _C =-10μA, I _E =0 | -60 | -- | -- | V |
| V _{(BR)CEO} * | Collector-emitter breakdown voltage | I _C =-10mA, I _B =0 | -40 | -- | -- | V |
| V _{(BR)EBO} | Emitter-base breakdown voltage | I _E =-10μA, I _C =0 | -5 | -- | -- | V |
| I _{CBO} | Collector cut-off current | V _{CB} =-50V, I _E =0 | -- | -- | -20 | nA |
| I _{EBO} | Emitter cut-off current | V _{EB} = -3V, I _C =0 | -- | -- | -10 | nA |
| I _{CEX} | Collector cut-off current | V _{CE} =-30V, V _{BE(off)} =-0.5V | -- | -- | -50 | nA |
| h _{FE1} * | DC current gain | V _{CE} =-10V, I _C =-150mA | 100 | -- | 300 | |
| h _{FE2} * | | V _{CE} =-10V, I _C =-0.1mA | 52 | -- | -- | |
| h _{FE3} * | | V _{CE} =-10V, I _C =-500mA | 32 | -- | -- | |
| V _{CE(sat)} * | Collector-emitter saturation voltage | I _C = -150mA I _B = -15mA | -- | -- | -0.4 | V |
| V _{CE(sat)} * | | I _C = -500mA I _B = -50mA | -- | -- | -0.67 | V |
| V _{BE(sat)} * | Base -emitter saturation voltage | I _C =-150mA I _B = -15mA | -- | -- | -1 | V |
| V _{BE(sat)} * | | I _C =-500mA I _B =-50mA | -- | -- | -1.2 | V |
| f _T | Transition frequency | V _{CE} =-20V, I _C =-50mA, f=100MHz | 200 | -- | -- | MHz |
| t _d | Transition frequency | V _{CE} =-30V, I _C =-150mA, I _{B1} =-15mA | -- | -- | 10 | ns |
| t _r | Rise time | | -- | -- | 25 | ns |
| t _s | Storage time | V _{CE} =-6V, I _C =-150mA, I _{B1} =- I _{B2} =- 15mA | -- | -- | 225 | ns |
| t _f | Fall time | | -- | -- | 60 | ns |

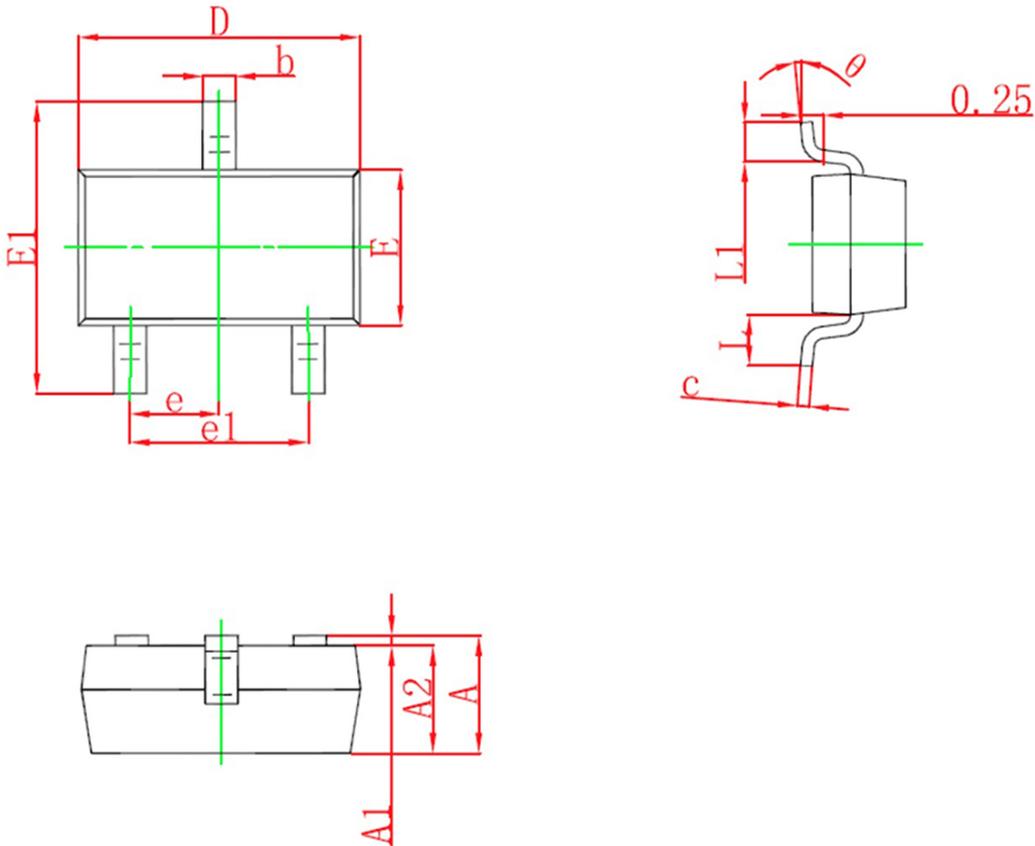
 *Pulse test: t_p≤300μs, δ≤0.02.

Typical Operating Characteristics




Ordering Information (Example)

| Type | Package | Marking | Minimum Package(pcs) | Inner Box Quantity(pcs) | Outer Carton Quantity(pcs) | Delivery Mode |
|----------|---------|---------|----------------------|-------------------------|----------------------------|---------------|
| MMBT2907 | SOT-23 | M2B | 3,000 | 45,000 | 180,000 | 7"reel |

SOT-23 Package information


| Symbol | Dimensions in Millimeters(mm) | | 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 |
| E1 | 2.250 | 2.550 | 0.088 | 0.100 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| e | 0.950TYP | | 0.037TYP | |
| 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° |