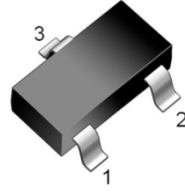


REPLACEMENT TYPE : MMBT2907A
FEATURES

- Epitaxial Planar Die Construction
- Complementary NPN Type Available(HABT2222A)



SOT-23 MARKING:2F

1: BASE 2:EMITTER 3: COLLECTOR

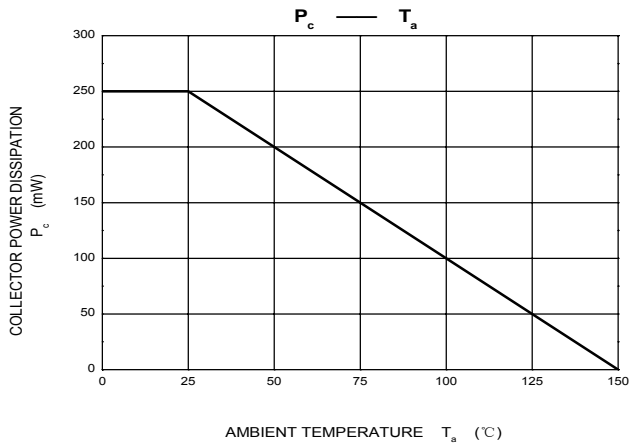
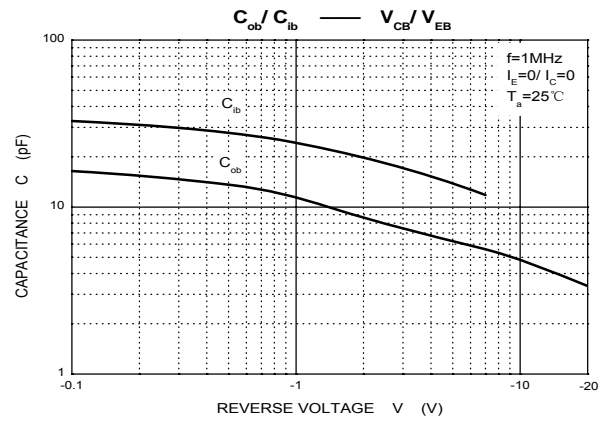
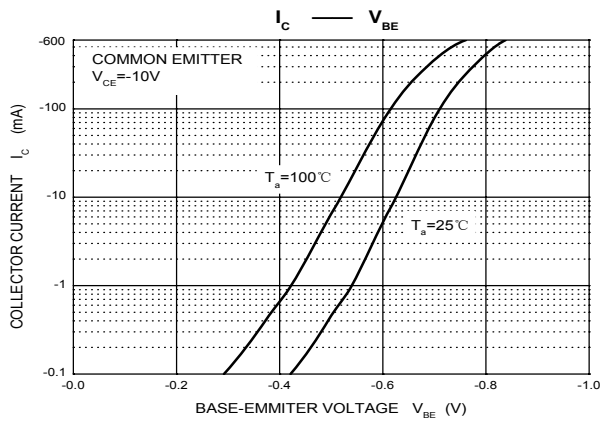
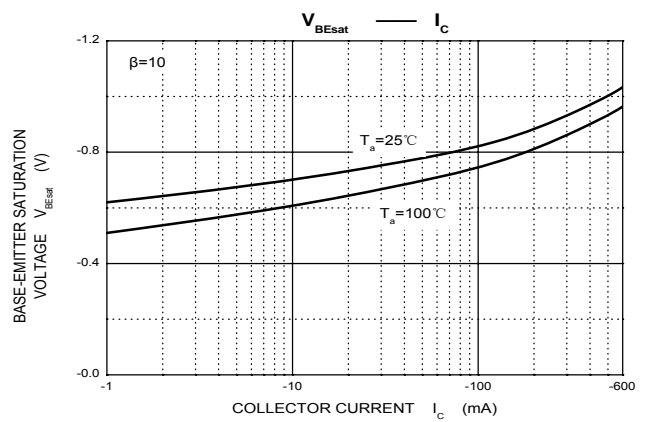
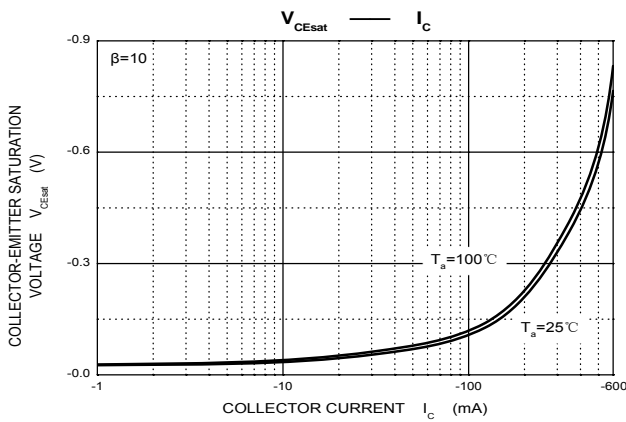
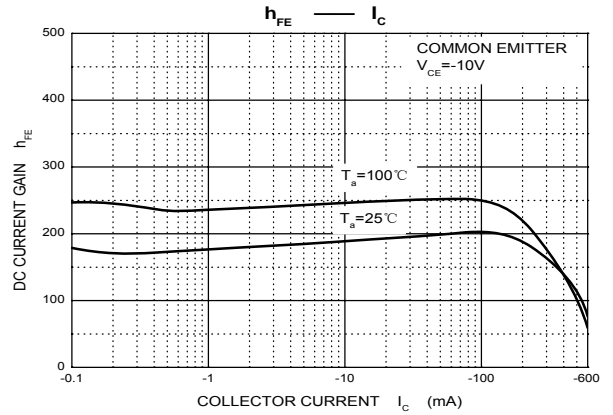
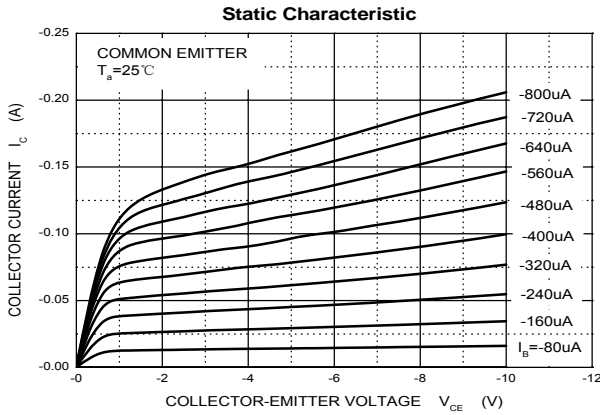
MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

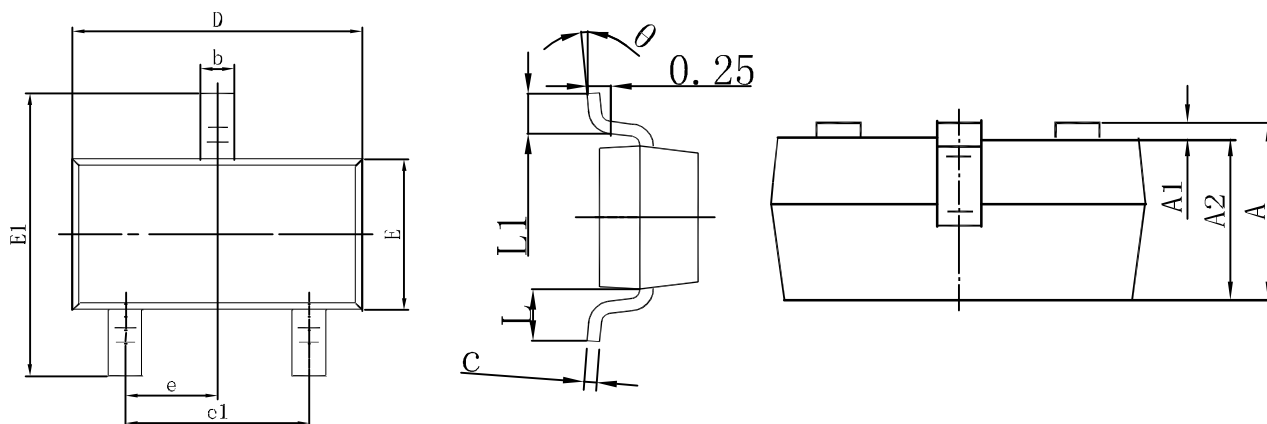
| Parameter | Symbol | Value | Unit |
|--|------------------|-------------|-------|
| Collector-Base Voltage | V _{CB0} | -60 | V |
| Collector-Emitter Voltage | V _{CEO} | -60 | V |
| Emitter-Base Voltage | V _{EBO} | -5 | V |
| Collector Current-Continuous | I _C | -600 | mA |
| Total Device Dissipation | P _C | 250 | mW |
| Thermal Resistance Junction to Ambient | R _{θJA} | 500 | °C /W |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature | T _{stg} | -55 to +150 | °C |

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|-----------------------|---|-----|-----|------|------|
| Collector-Base Breakdown Voltage | V _{CB0} | I _C =-10μA, I _E =0 | -60 | | | V |
| Collector-Emitter Breakdown Voltage | V _{CEO} | I _C =-10mA, I _B =0 | -60 | | | V |
| Emitter-Base Breakdown Voltage | V _{EBO} | I _E =-10μA, I _C =0 | -5 | | | V |
| Collector Cut-off Current | I _{CB0} | V _{CB} =-50V, I _E =0 | | | -20 | nA |
| Collector Cut-off current | I _{CEx} | V _{CE} =-30V, V _{BE} (off)=-0.5V | | | -10 | nA |
| Emitter Cut-off Current | I _{EBO} | V _{EB} =-3V, I _C =0 | | | -50 | nA |
| DC Current Gain | h _{FE(1)} | V _{CE} =-10V, I _C =-150mA | 100 | | 300 | |
| | h _{FE(2)} | V _{CE} =-10V, I _C =-0.1mA | 75 | | | |
| | h _{FE(3)} | V _{CE} =-10V, I _C =-1mA | 100 | | | |
| | h _{FE(4)} | V _{CE} =-10V, I _C =-10mA | 100 | | | |
| | h _{FE(5)} | V _{CE} =-10V, I _C =-500mA | 50 | | | |
| Collector-Emitter Saturation Voltage | V _{CE(sat)1} | I _C =-150mA, I _B =-15mA | | | -0.4 | V |
| | V _{CE(sat)2} | I _C =-500mA, I _B =-50mA | | | -1.6 | V |
| Base-Emitter Saturation Voltage | V _{BE(sat)1} | I _C =-150mA, I _B =-15mA | | | -1.3 | V |
| | V _{BE(sat)2} | I _C =-500mA, I _B =-50mA | | | -2.6 | V |
| Transition Frequency | f _T | V _{CE} =-20V, I _C =-50mA, f=100MHz | 200 | | | MHz |
| Delay Time | t _D | V _{CE} =-30V, I _C =-150mA I _{B1} =-15mA | | | 10 | nS |
| Rise Time | t _R | | | | 25 | nS |
| Storage Time | t _S | V _{CE} =-6V, I _C =-150mA | | | 225 | nS |
| Fall Time | t _F | I _{B1} =-I _{B2} =-15mA | | | 60 | nS |

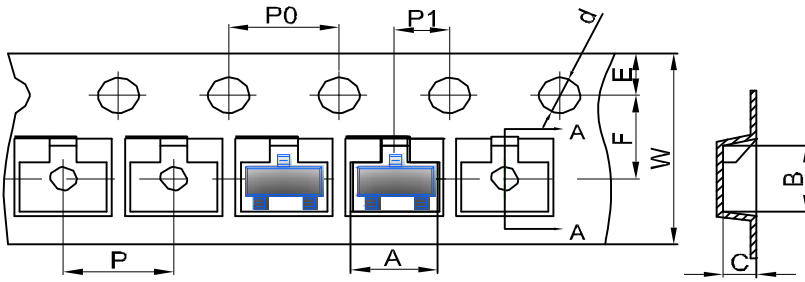
Typical Characteristics



SOT-23 Package Outline Dimensions


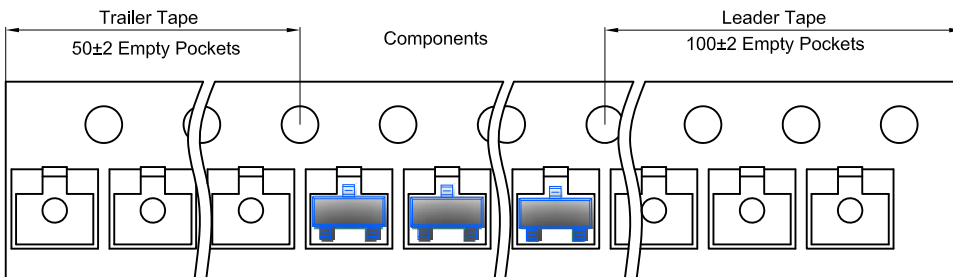
| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|----------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 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 Embossed Carrier Tape

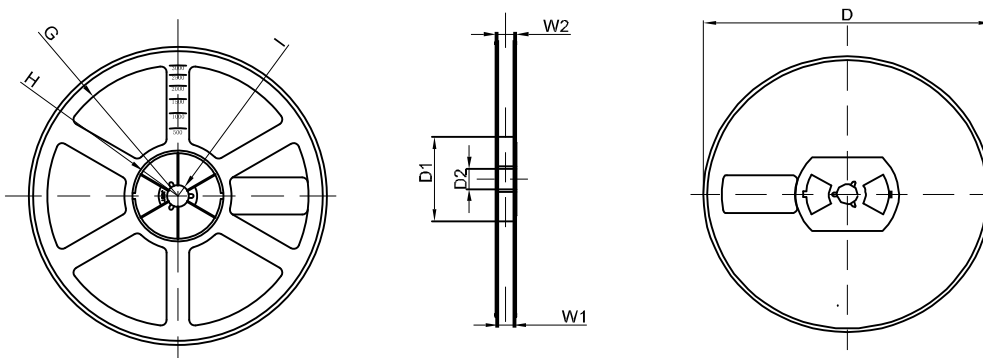


| DIMENSIONS ARE IN MILLIMETER | | | | | | | | | | |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| TYPE | A | B | C | d | E | F | P0 | P | P1 | W |
| SOT-23 | 3.15 | 2.77 | 1.22 | φ1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |
| TOLERANCE | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 |

SOT-23 Tape Leader and Traller



SOT-23 Reel



| DIMENSIONS ARE IN MILLIMETER | | | | | | | | |
|------------------------------|------|-------|-------|-----|--------|-------|------|-------|
| REEL OPTION | D | D1 | D2 | G | H | I | W1 | W2 |
| 7" DIA | φ178 | 54.40 | 13.00 | R78 | R25.60 | R6.50 | 9.50 | 12.30 |
| TOLERANCE | ±2 | ±1 | ±1 | ±1 | ±1 | ±1 | ±1 | ±1 |