



DONGGUAN NANJING ELECTRONICS LTD.,
SOT-23 Plastic-Encapsulate Transistors

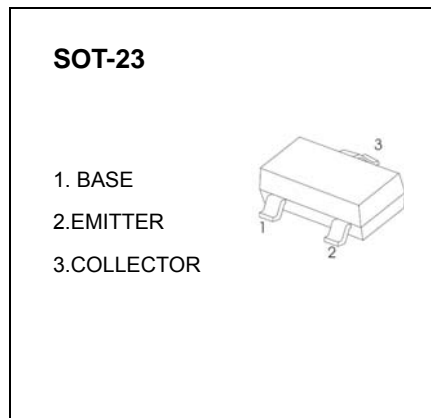
MMBT2222A TRANSISTOR (NPN)

FEATURES

- Epitaxial planar die construction
- Complementary PNP Type available(MMBT2907A)

MARKING: 1P

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



| Symbol | Parameter | Value | Unit |
|------------------|---|----------|------|
| V _{CBO} | Collector-Base Voltage | 75 | V |
| V _{CEO} | Collector-Emitter Voltage | 40 | V |
| V _{EBO} | Emitter-Base Voltage | 6 | V |
| I _C | Collector Current -Continuous | 600 | mA |
| P _C | Collector Dissipation | 300 | mW |
| R _{θJA} | Thermal Resistance, Junction to Ambient | 417 | °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 = 10μA, I _E =0 | 75 | | | V |
| Collector-emitter breakdown voltage | V _{(BR)CEO} * | I _C = 10mA, I _B =0 | 40 | | | V |
| Emitter-base breakdown voltage | V _{(BR)EBO} | I _E =10μA, I _C =0 | 6 | | | V |
| Collector cut-off current | I _{CBO} | V _{CB} =60V, I _E =0 | | | 0.01 | μA |
| Collector cut-off current | I _{CEX} | V _{CE} =30V, V _{BE(off)} =3V | | | 0.01 | μA |
| Emitter cut-off current | I _{EBO} | V _{EB} = 3V, I _C =0 | | | 0.1 | μA |
| DC current gain | h _{FE(1)} * | V _{CE} =10V, I _C = 150mA | 100 | | 300 | |
| | h _{FE(2)} | V _{CE} =10V, I _C = 0.1mA | 40 | | | |
| | h _{FE(3)} * | V _{CE} =10V, I _C = 500mA | 42 | | | |
| Collector-emitter saturation voltage | V _{CE(sat)} * | I _C =500 mA, I _B = 50mA I _C =150 mA, I _B =15mA | | | 1 0.3 | V |
| Base-emitter saturation voltage | V _{BE(sat)} * | I _C =500 mA, I _B = 50mA I _C =150 mA, I _B =15mA | | | 2.0 1.2 | V |
| Transition frequency | f _T | V _{CE} =20V, I _C = 20mA, f=100MHz | 300 | | | MHz |
| Delay time | t _d | V _{CC} =30V, V _{BE(off)} =-0.5V I _C =150mA, I _{B1} = 15mA | | | 10 | ns |
| Rise time | t _r | | | | 25 | ns |
| Storage time | t _s | V _{CC} =30V, I _C =150mA | | | 225 | ns |
| Fall time | t _f | I _{B1} =-I _{B2} =15mA | | | 60 | ns |

*pulse test: Pulse Width ≤300μs, Duty Cycle≤ 2.0%.

Typical Characteristics

MMBT2222A

