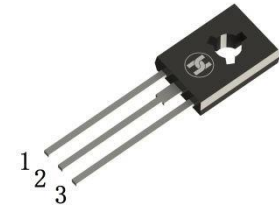


BIPOLAR TRANSISTOR (NPN)
FEATURES

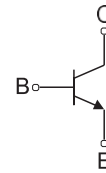
- Complement To BD140
- High Current



1.EMITTER 2.COLLECTOR 3.BASE

TO-126

Equivalent Circuit


MECHANICAL DATA

- Case: TO-126
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.5 grams (approximate)

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

| Parameter | Symbol | Value | Unit |
|---|------------------|-----------|------|
| Collector-Base Voltage | V _{CB0} | 80 | V |
| Collector-Emitter Voltage | V _{CEO} | 80 | V |
| Emitter-Base Voltage | V _{EBO} | 5 | V |
| Collector Current | I _C | 1.5 | A |
| Collector Power Dissipation | P _C | 1.25 | W |
| Thermal Resistance From Junction To Ambient | R _{θJA} | 100 | °C/W |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature | T _{STG} | -55 ~+150 | °C |

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

| Parameter | Symbol | Min | Typ | Max | Unit | Conditions |
|--------------------------------------|------------------------|-----|-----|-----|------|---|
| Collector-base breakdown voltage | V _{(BR)CBO} * | 80 | | | V | I _C =100μA, I _E =0 |
| Collector-emitter breakdown voltage | V _{(BR)CEO} * | 80 | | | V | I _C =30mA, I _B =0 |
| Emitter-base breakdown voltage | V _{(BR)EBO} | 5 | | | V | I _E =100μA, I _C =0 |
| Collector cut-off current | I _{CBO} | | | 0.1 | μA | V _{CB} =30V, I _E =0 |
| Emitter cut-off current | I _{EBO} | | | 10 | μA | V _{EB} =5V, I _C =0 |
| DC current gain | h _{FE} * | 40 | | 250 | | V _{CE} =2V, I _C =150mA |
| | | 25 | | | | V _{CE} =2V, I _C =5mA |
| | | 25 | | | | V _{CE} =2V, I _C =500mA |
| Collector-emitter saturation voltage | V _{CE(sat)} * | | | 0.5 | V | I _C =500mA, I _B =50mA |
| Base-emitter voltage | V _{BE} | | | 1 | V | V _{CE} =2V, I _C =500mA |

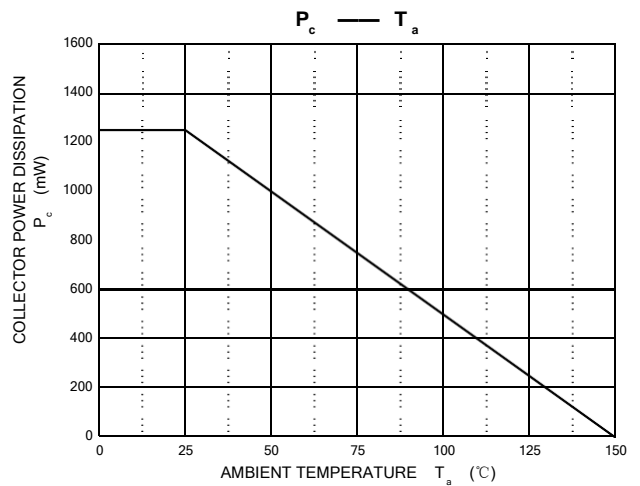
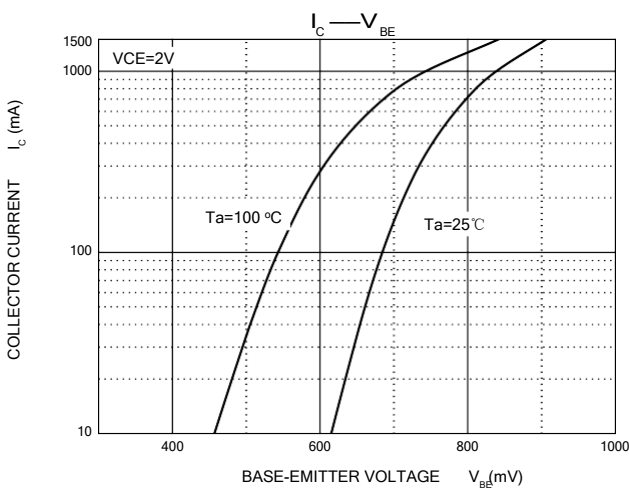
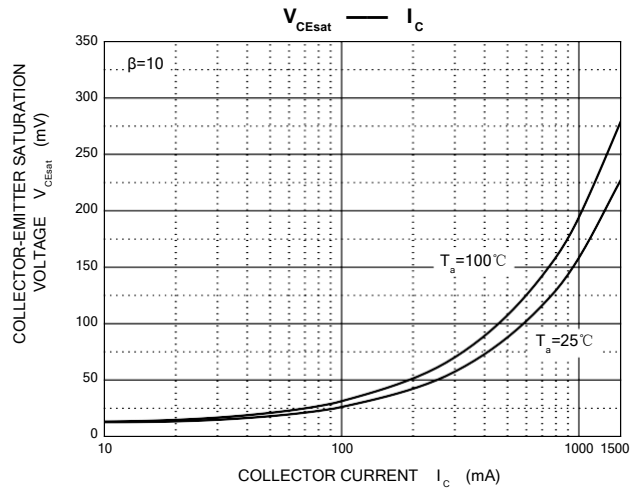
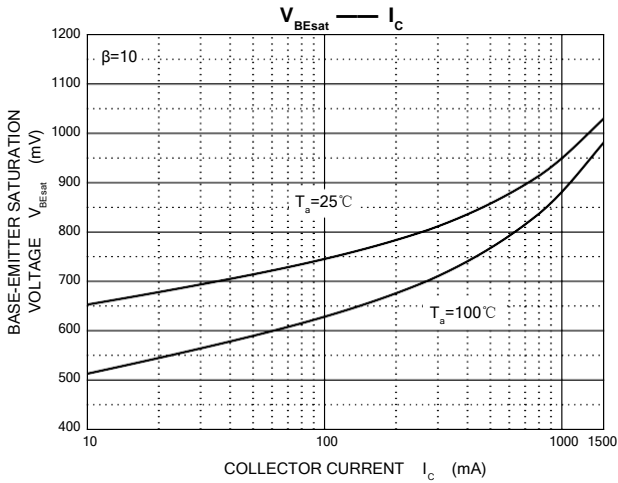
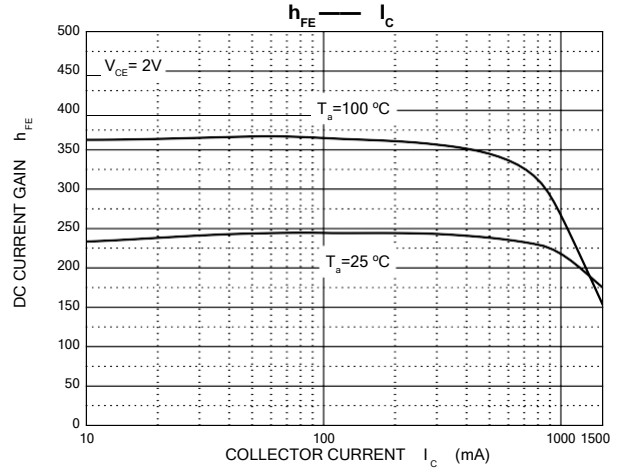
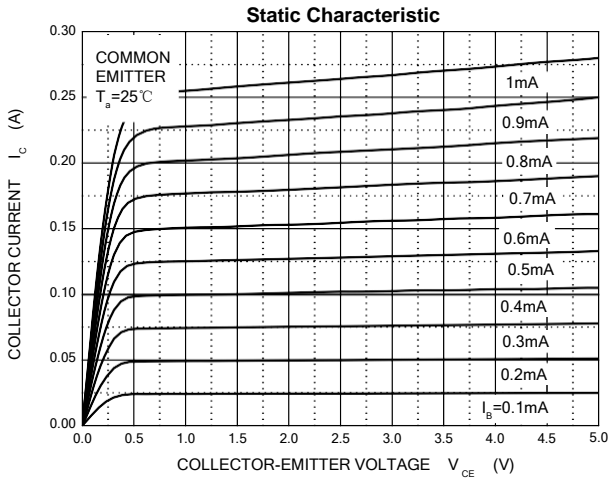
*pulse test: pulse width ≤350μs, duty cycle≤ 2.0%.

CLASSIFICATION OF h_{FE}

| Rank | 6 | 10 | 16 |
|-------|--------|--------|---------|
| Range | 40-100 | 63-160 | 100-250 |

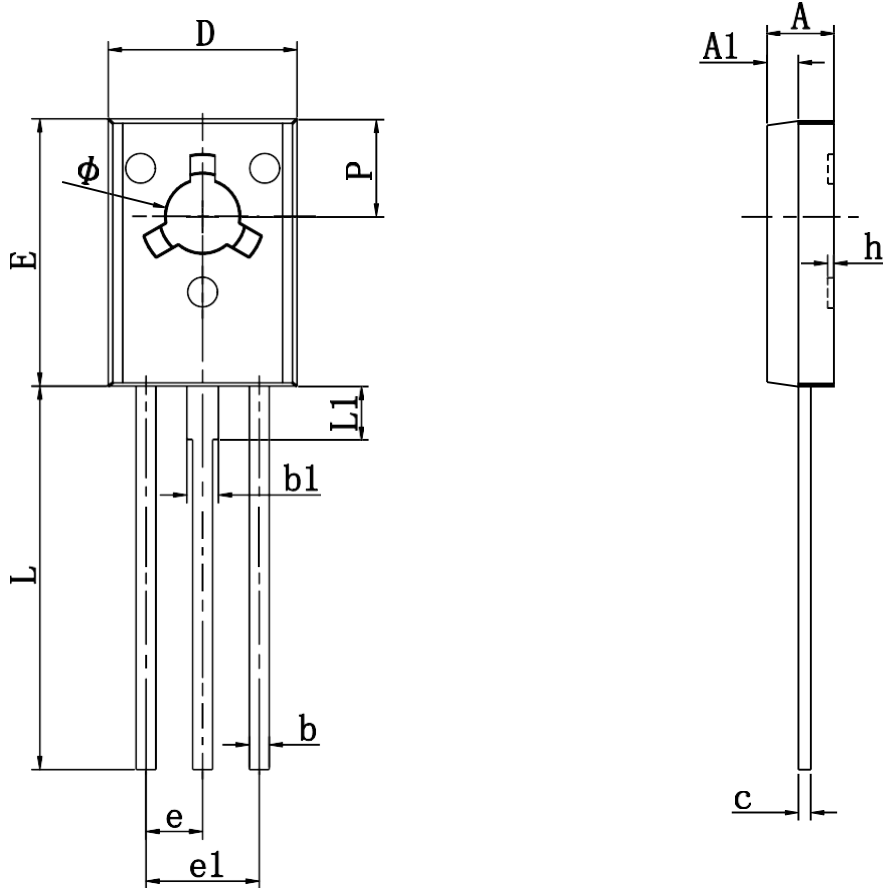
BIPOLAR TRANSISTOR (NPN)

Typical Characteristics



BIPOLAR TRANSISTOR (NPN)

TO-126 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 2.500 | 2.900 | 0.098 | 0.114 |
| A1 | 1.100 | 1.500 | 0.043 | 0.059 |
| b | 0.660 | 0.860 | 0.026 | 0.034 |
| b1 | 1.170 | 1.370 | 0.046 | 0.054 |
| c | 0.450 | 0.600 | 0.018 | 0.024 |
| D | 7.400 | 7.800 | 0.291 | 0.307 |
| E | 10.600 | 11.000 | 0.417 | 0.433 |
| e | 2.290 TYP | | 0.090 TYP | |
| e1 | 4.480 | 4.680 | 0.176 | 0.184 |
| h | 0.000 | 0.300 | 0.000 | 0.012 |
| L | 15.300 | 15.700 | 0.602 | 0.618 |
| L1 | 2.100 | 2.300 | 0.083 | 0.091 |
| P | 3.900 | 4.100 | 0.154 | 0.161 |
| ϕ | 3.000 | 3.200 | 0.118 | 0.126 |