

TO-126 Plastic-Encapsulate Transistors

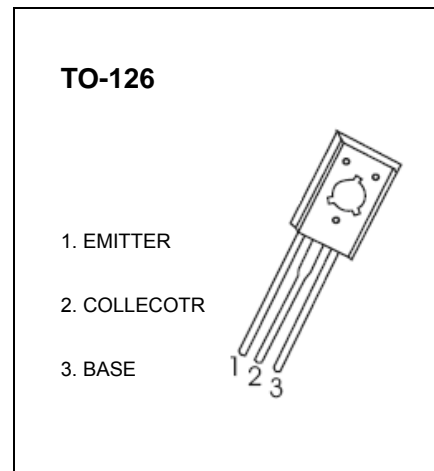
BD438,440,442 TRANSISTOR (PNP)

FEATURES

- Amplifier and Switching Applications

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

| Symbol | Parameter | | Value | Unit |
|------------------|-------------------------------|-------|---------|------|
| V _{CB0} | Collector-Base Voltage | BD438 | -45 | V |
| | | BD440 | -60 | |
| | | BD442 | -80 | |
| V _{CEO} | Collector-Emitter Voltage | BD438 | -45 | V |
| | | BD440 | -60 | |
| | | BD442 | -80 | |
| V _{EBO} | Emitter-Base Voltage | | -5 | V |
| I _C | Collector Current –Continuous | | -4 | A |
| P _C | Collector Power Dissipation | | 1.25 | 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 | BD438 | -45 | | V |
| | | | BD440 | -60 | | |
| | | | BD442 | -80 | | |
| Collector-emitter breakdown voltage | V _{CEO(SUS)} ⁽¹⁾ | I _C =-100mA, I _B =0 | BD438 | -45 | | V |
| | | | BD440 | -60 | | |
| | | | BD442 | -80 | | |
| Emitter-base breakdown voltage | V _{(BR)EBO} | I _E =-100μA, I _C =0 | -5 | | | V |
| Collector cut-off current | I _{CBO} | V _{CB} =-45V, I _E =0 | BD438 | | | μA |
| | | V _{CB} =-60V, I _E =0 | BD440 | | -0.1 | |
| | | V _{CB} =-80V, I _E =0 | BD442 | | | |
| Emitter cut-off current | I _{EBO} | V _{EB} =-5V, I _C =0 | | | -1 | μA |
| DC current gain | h _{FE(1)} ⁽¹⁾ | V _{CE} =-5V, I _C =-10mA | BD438 | 30 | | |
| | | | BD440 | 20 | | |
| | | | BD442 | 15 | | |
| | h _{FE(2)} ⁽¹⁾ | V _{CE} =-1V, I _C =-500mA | BD438 | 85 | 375 | |
| | | | BD440/BD442 | 40 | 475 | |
| | h _{FE(3)} ⁽¹⁾ | V _{CE} =-1V, I _C =-2A | BD438 | 40 | | |
| | | | BD440 | 25 | | |
| | | | BD442 | 15 | | |
| Collector-emitter saturation voltage | V _{CE(sat)} ⁽¹⁾ | I _C =-3A, I _B =-300mA | BD438 | | -0.7 | V |
| | | | BD440/BD442 | | -0.8 | |
| Base-emitter voltage | V _{BE} ⁽¹⁾ | V _{CE} =-1V, I _C =-2A | BD438 | | -1.1 | V |
| | | | BD440/BD442 | | -1.5 | |
| Transition frequency | f _T | V _{CE} =-1V, I _C =-250mA, f=1MHz | 3 | | | MHz |

⁽¹⁾Pulse test.