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NPN medium power transistors

BC140; BC141

FEATURES

- High current (max. 1 A)
- Low voltage (max. 60 V).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

NPN medium power transistor in a TO-39 metal package.
PNP complements: BC160 and BC161.

PINNING

| PIN | DESCRIPTION |
|-----|------------------------------|
| 1 | emitter |
| 2 | base |
| 3 | collector, connected to case |

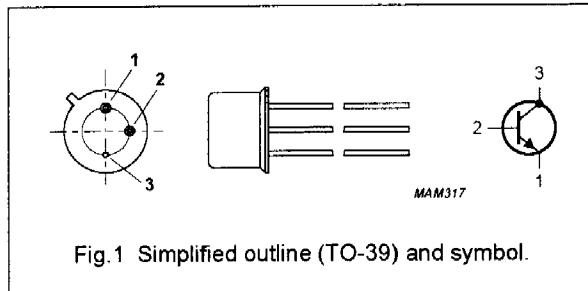


Fig.1 Simplified outline (TO-39) and symbol.

QUICK REFERENCE DATA

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|------------------|---------------------------------------|---|-----------|------|------|------|
| V _{CBO} | collector-base voltage BC140 | open emitter | — | — | 80 | V |
| | BC141 | | | | 100 | V |
| V _{CEO} | collector-emitter voltage BC140 | open base | — | — | 40 | V |
| | BC141 | | | | 60 | V |
| I _{CM} | peak collector current | | — | — | 1.5 | A |
| P _{tot} | total power dissipation | T _{case} ≤ 45 °C | — | — | 3.7 | W |
| h _{FE} | DC current gain BC140-10; BC141-10 | I _C = 100 mA; V _{CE} = 1 V | 63 100 | 100 | 160 | |
| | BC140-16; BC141-16 | | | 160 | 250 | |
| f _T | transition frequency | I _C = 50 mA; V _{CE} = 10 V; f = 100 MHz | 50 | — | — | MHz |



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LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|------------------|---|---------------------------|------|------|------|
| V _{CBO} | collector-base voltage BC140 BC141 | open emitter | – | 80 | V |
| | | | – | 100 | V |
| V _{CEO} | collector-emitter voltage BC140 BC141 | open base | – | 40 | V |
| | | | – | 60 | V |
| V _{EBO} | emitter-base voltage | open collector | – | 7 | V |
| I _C | collector current (DC) | | – | 1 | A |
| I _{CM} | peak collector current | | – | 1.5 | A |
| I _{BM} | peak base current | | – | 200 | mA |
| P _{tot} | total power dissipation | T _{case} ≤ 45 °C | – | 3.7 | W |
| T _{stg} | storage temperature | | –65 | +150 | °C |
| T _j | junction temperature | | – | 175 | °C |
| T _{amb} | operating ambient temperature | | –65 | +150 | °C |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------------|---|-------------|-------|------|
| R _{th j-a} | thermal resistance from junction to ambient | in free air | 200 | K/W |
| R _{th j-c} | thermal resistance from junction to case | | 35 | K/W |