

Silicon NPN Power Transistors

MJ1000/1001

DESCRIPTION

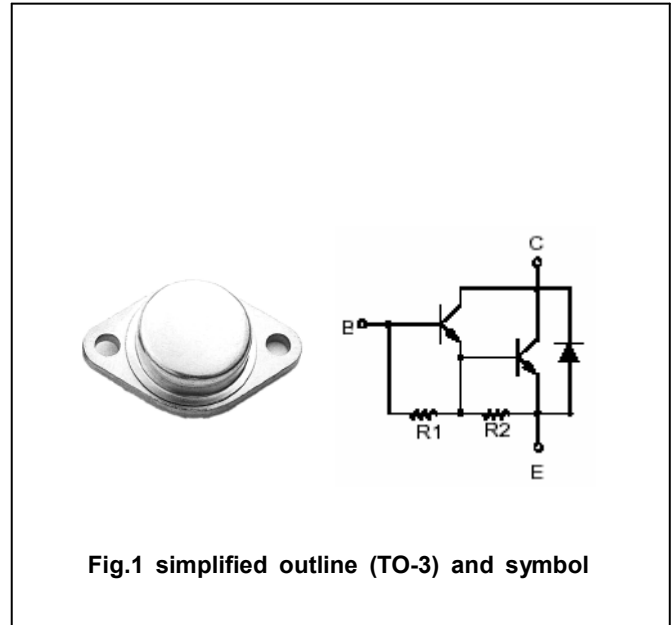
- With TO-3 package
- DARLINGTON
- High DC current gain
- Complement to type MJ900/901

APPLICATIONS

- For use as output devices in complementary general purpose amplifier applications

PINNING(see Fig.2)

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Base |
| 2 | Emitter |
| 3 | Collector |

**ABSOLUTE MAXIMUM RATINGS($T_c=25^\circ\text{C}$)**

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|-----------|---------------------------|------------------------|---------|------------------|
| V_{CBO} | Collector-base voltage | MJ1000 | 60 | V |
| | | MJ1001 | 80 | |
| V_{CEO} | Collector-emitter voltage | MJ1000 | 60 | V |
| | | MJ1001 | 80 | |
| V_{EBO} | Emitter-base voltage | Open collector | 5 | V |
| I_C | Collector current | | 10 | A |
| I_B | Base current | | 0.1 | A |
| P_D | Total power dissipation | $T_c=25^\circ\text{C}$ | 90 | W |
| T_j | Junction temperature | | 200 | $^\circ\text{C}$ |
| T_{stg} | Storage temperature | | -55~200 | $^\circ\text{C}$ |

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CHARACTERISTICS

T_j=25 °C unless otherwise specified

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|------------------------|--------------------------------------|--------|---|------|------|------------|------|
| V _{(BR)CEO} | Collector-emitter breakdown voltage | MJ1000 | I _C =0.1A ; I _B =0 | 60 | | | V |
| | | MJ1001 | | 80 | | | |
| V _{CE(sat)-1} | Collector-emitter saturation voltage | | I _C =3A ; I _B =12mA | | | 2.0 | V |
| V _{CE(sat)-2} | Collector-emitter saturation voltage | | I _C =8A ; I _B =40mA | | | 4.0 | V |
| V _{BE} | Base-emitter on voltage | | I _C =3A ; V _{CE} =3V | | | 2.5 | V |
| I _{CER} | Collector cut-off current | MJ1000 | V _{CE} =60V ; R _{BE} =1.0kΩ T _C =150 °C | | | 1.0 5.0 | mA |
| | | MJ1001 | V _{CE} =80V ; R _{BE} =1.0kΩ T _C =150 °C | | | 1.0 5.0 | |
| I _{CEO} | Collector cut-off current | MJ1000 | V _{CE} =30V ; I _B =0 | | | 0.5 | mA |
| | | MJ1001 | V _{CE} =40V ; I _B =0 | | | | |
| I _{EBO} | Emitter cut-off current | | V _{EB} =5V ; I _C =0 | | | 2.0 | mA |
| h _{FE-1} | DC current gain | | I _C =3A ; V _{CE} =3V | 1000 | | | |
| h _{FE-2} | DC current gain | | I _C =4A ; V _{CE} =3V | 750 | | | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------------|-------------------------------------|------|------|
| R _{th j-c} | Thermal resistance junction to case | 1.94 | °C/W |

PACKAGE OUTLINE

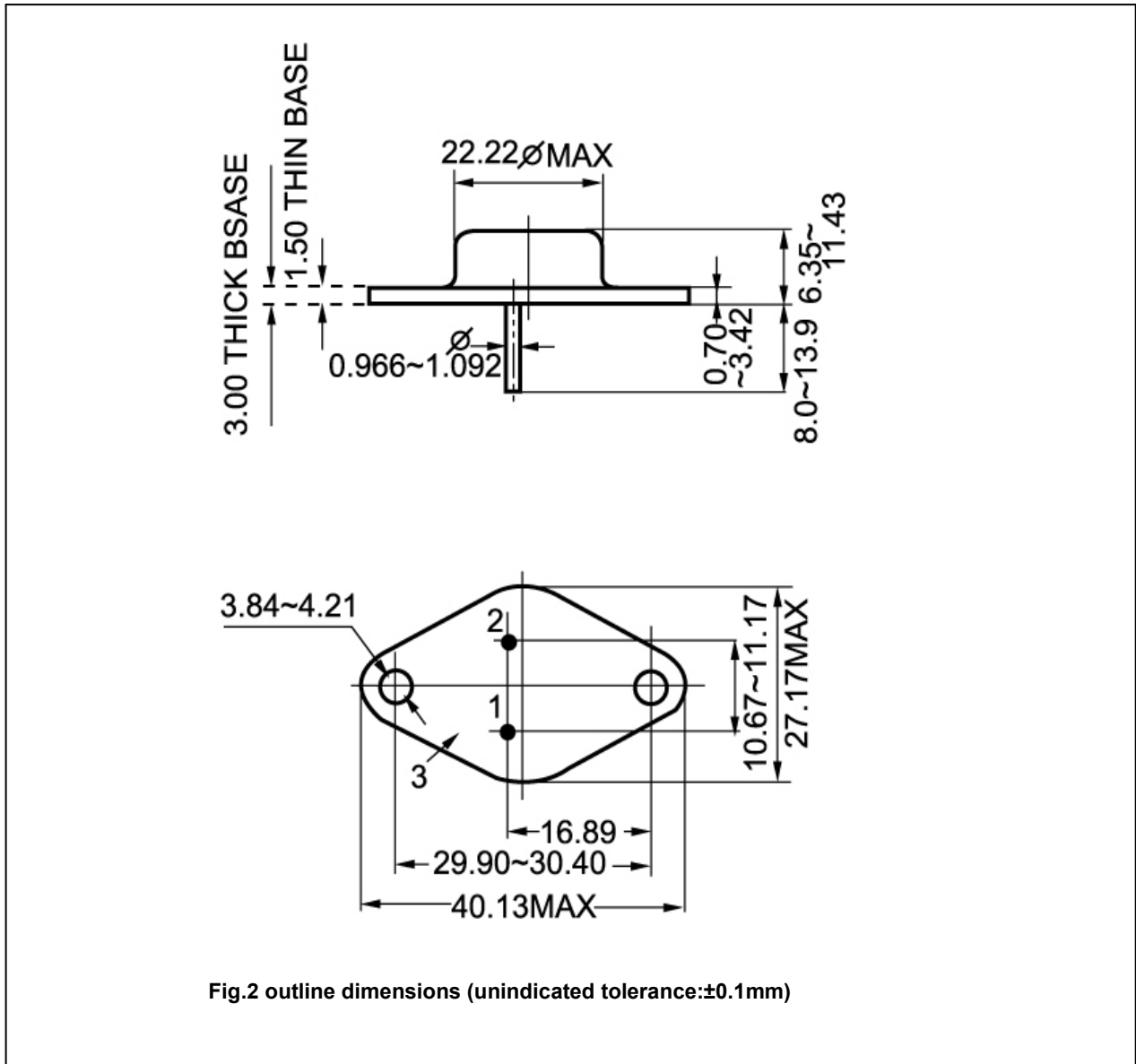


Fig.2 outline dimensions (unindicated tolerance:±0.1mm)