

Silicon NPN Power Transistors

MJ3000/3001

DESCRIPTION

- With TO-3 package
- DARLINGTON
- High DC current gain
- Complement to type MJ2500/2501

APPLICATIONS

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

PINNING(see Fig.2)

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

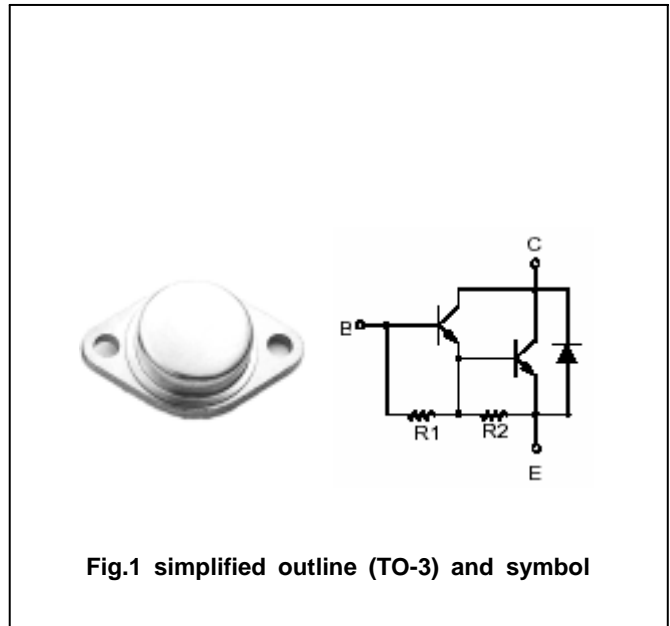


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings(Ta=)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|---------------------------|--------------------|---------|------|
| V _{CBO} | Collector-base voltage | MJ3000 | 60 | V |
| | | MJ3001 | 80 | |
| V _{CEO} | Collector-emitter voltage | MJ3000 | 60 | V |
| | | MJ3001 | 80 | |
| V _{EBO} | Emitter-base voltage | Open collector | 5 | V |
| I _C | Collector current | | 10 | A |
| I _B | Base current | | 0.2 | A |
| P _D | Total power dissipation | T _C =25 | 150 | W |
| T _j | Junction temperature | | 200 | |
| T _{stg} | Storage temperature | | -55~200 | |

Silicon NPN Power Transistors

MJ3000/3001

CHARACTERISTICS

T_j=25 unless otherwise specified

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|--------|--------------------------------------------------------------------|------|------|------------|------|
| V _{(BR)CEO} | Collector-emitter breakdown voltage | MJ3000 | I _C =0.1A ; I _B =0 | 60 | | | V |
| | | MJ3001 | | 80 | | | |
| V _{CEsat-1} | Collector-emitter saturation voltage | | I _C =5A; I _B =20mA | | | 2.0 | V |
| V _{CEsat-2} | Collector-emitter saturation voltage | | I _C =10A; I _B =50mA | | | 4.0 | V |
| V _{BE} | Base-emitter on voltage | | I _C =5A ; V _{CE} =3V | | | 3.0 | V |
| I _{CER} | Collector cut-off current | MJ3000 | V _{CE} =60V; R _{BE} =1.0k T _C =150 | | | 1.0 5.0 | mA |
| | | MJ3001 | V _{CE} =80V; R _{BE} =1.0k T _C =150 | | | 1.0 5.0 | |
| I _{CEO} | Collector cut-off current | MJ3000 | V _{CE} =30V; I _B =0 | | | 1.0 | mA |
| | | MJ3001 | V _{CE} =40V; I _B =0 | | | | |
| I _{EBO} | Emitter cut-off current | | V _{EB} =5V; I _C =0 | | | 2.0 | mA |
| h _{FE} | DC current gain | | I _C =5A ; V _{CE} =3V | 1000 | | | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------------|-------------------------------------|------|------|
| R _{th j-c} | Thermal resistance junction to case | 1.17 | /W |

PACKAGE OUTLINE

