

Silicon NPN Power Transistors

2SD1049

DESCRIPTION

- With TO-3PN package
- High current,
- High speed switching
- High reliability

APPLICATIONS

- Switching regulators
- Motor controls
- High frequency inverters
- General purpose power amplifiers

PINNING

| PIN | DESCRIPTION |
|-----|--------------------------------------|
| 1 | Base |
| 2 | Collector;connected to mounting base |
| 3 | Emitter |

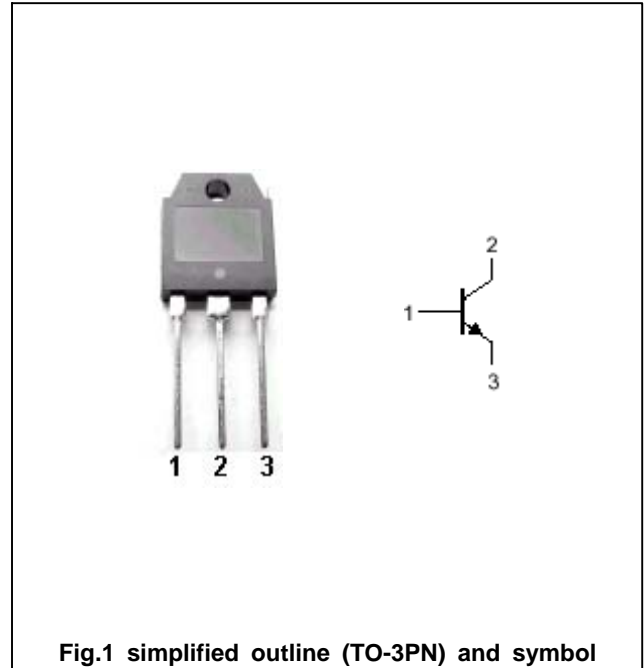


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings(Tc=25)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|-----------|-----------------------------|----------------|---------|------|
| V_{CBO} | Collector-base voltage | Open emitter | 120 | V |
| V_{CEO} | Collector-emitter voltage | Open base | 80 | V |
| V_{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I_C | Collector current (DC) | | 25 | A |
| I_B | Base current | | 5 | A |
| P_C | Collector power dissipation | $T_C=25$ | 80 | W |
| T_j | Junction temperature | | 150 | |
| T_{stg} | Storage temperature | | -40~150 | |

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CHARACTERISTICS

T_j=25 unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|---|-----|------|------|------|
| V _{CEO} | Collector-emitter breakdown voltage | I _C =10mA ; R _{BE} =∞ | 80 | | | V |
| V _{CBO} | Collector-base breakdown voltage | I _C =0.1mA ; I _E =0 | 120 | | | V |
| V _{EBO} | Emitter-base breakdown voltage | I _E =0.1mA ; I _C =0 | 7 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =25A I _B =2.5A | | | 1.5 | V |
| V _{BEsat} | Base-emitter saturation voltage | I _C =25A I _B =2.5A | | | 2.0 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =120V I _E =0 | | | 0.1 | mA |
| I _{EBO} | Emitter cut-off current | V _{EB} =7V; I _C =0 | | | 0.1 | mA |
| h _{FE} | DC current gain | I _C =25A ; V _{CE} =5V | 20 | | | |
| R _{th(j-c)} | Thermal resistance | Junction to case | | | 1.55 | /W |

Switching times

| | | | | | | |
|------------------|--------------|---|--|--|-----|-----|
| t _{on} | Turn-on time | I _C =25A I _{B1} =-I _{B2} =2.5A R _L =3Ω; P _W =20 μ s; Duty≤2% | | | 1.0 | μ s |
| t _{stg} | Storage time | | | | 2.5 | μ s |
| t _f | Fall time | | | | 0.4 | μ s |

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PACKAGE OUTLINE

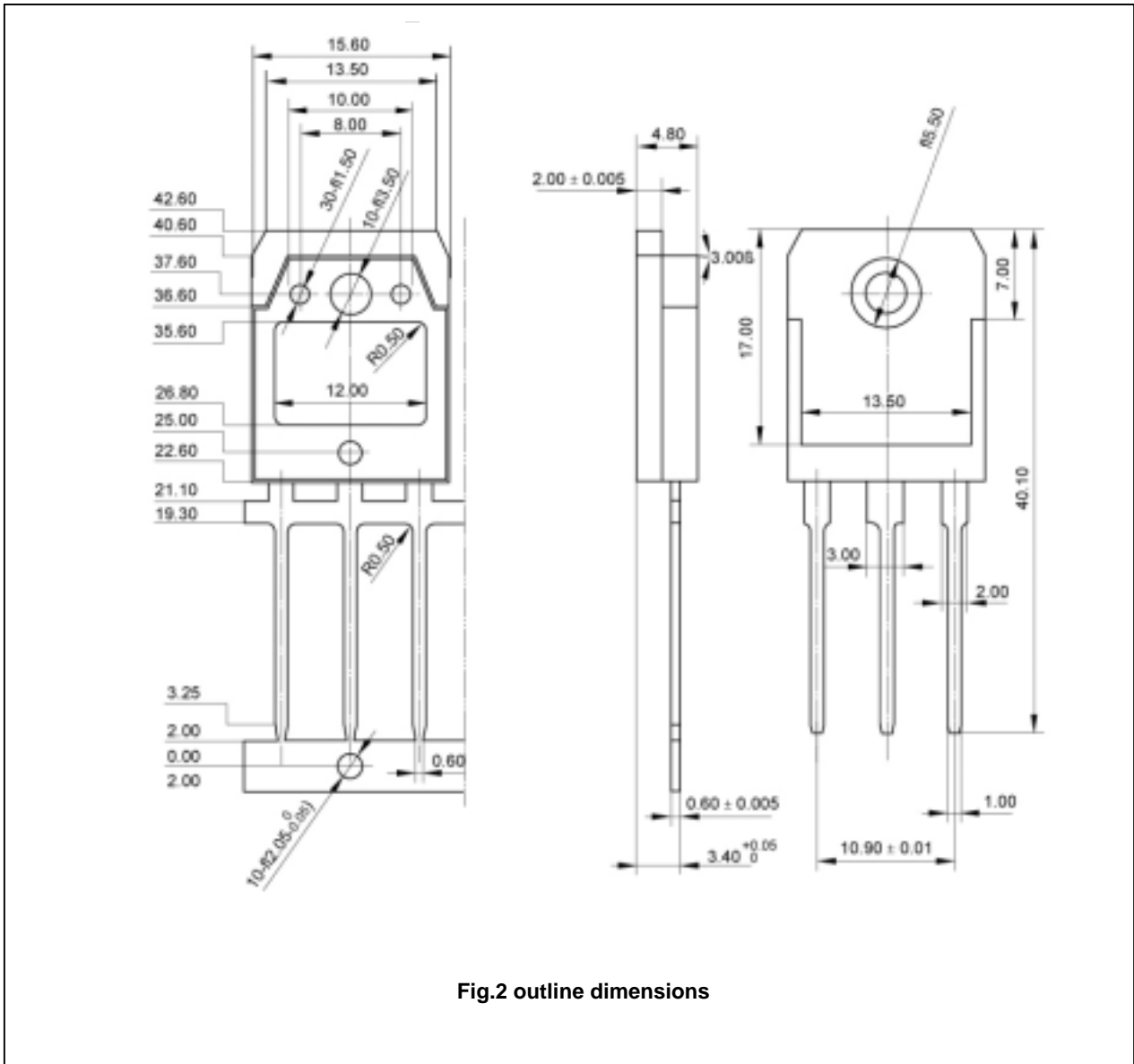


Fig.2 outline dimensions