

Silicon NPN Power Transistors

2SD1399

DESCRIPTION

- With TO-3PN package
- Built-in damper diode
- High voltage ,high reliability
- High speed switching

APPLICATIONS

- For horizontal output applications

PINNING

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

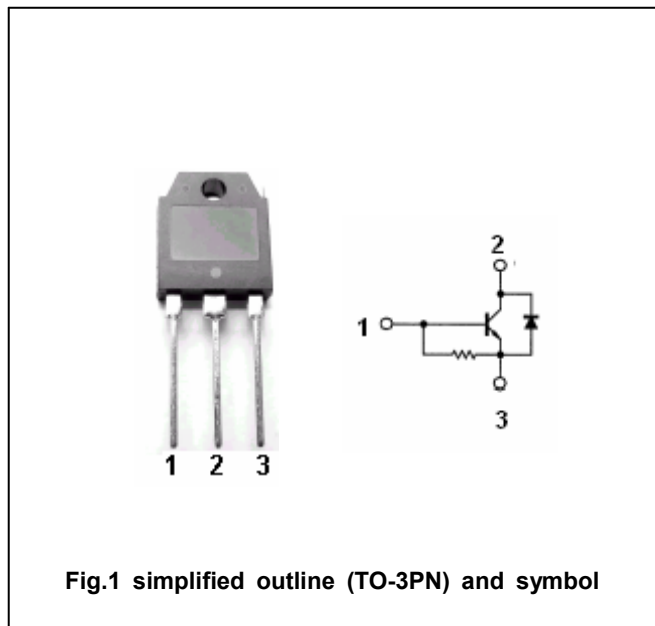


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings (Ta=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | Open emitter | 1500 | V |
| V _{CEO} | Collector-emitter voltage | Open base | 800 | V |
| V _{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I _C | Collector current (DC) | | 6 | A |
| I _{CM} | Collector current-peak | | 16 | A |
| P _C | Collector power dissipation | T _C =25°C | 50 | W |
| T _j | Junction temperature | | 150 | °C |
| T _{stg} | Storage temperature | | -55~150 | °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 | I _C =100mA; R _{BE} =∞ | 800 | | | V |
| V _{(BR)CBO} | Collector-base breakdown voltage | I _C =5mA; I _E =0 | 1500 | | | V |
| V _{(BR)EBO} | Emitter-base breakdown voltage | I _E =200mA; I _C =0 | 7 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =5A; I _B =1A | | | 5.0 | V |
| V _{BEsat} | Base-emitter saturation voltage | I _C =5A; I _B =1A | | | 1.5 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =800V; I _E =0 | | | 10 | μA |
| I _{EBO} | Emitter cut-off current | V _{EB} =4V; I _C =0 | 40 | | 130 | mA |
| h _{FE} | DC current gain | I _C =1A ; V _{CE} =5V | 8 | | | |
| f _T | Transition frequency | I _C =1A ; V _{CE} =10V | | 3 | | MHz |
| t _f | Fall time | I _C =5A; I _{B1} =1A; I _{B2} =-2A, V _{CC} =200V; R _L =40Ω | | | 0.7 | μs |
| V _F | Diode forward voltage | I _{EC} =6A | | | 2.0 | V |

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PACKAGE OUTLINE

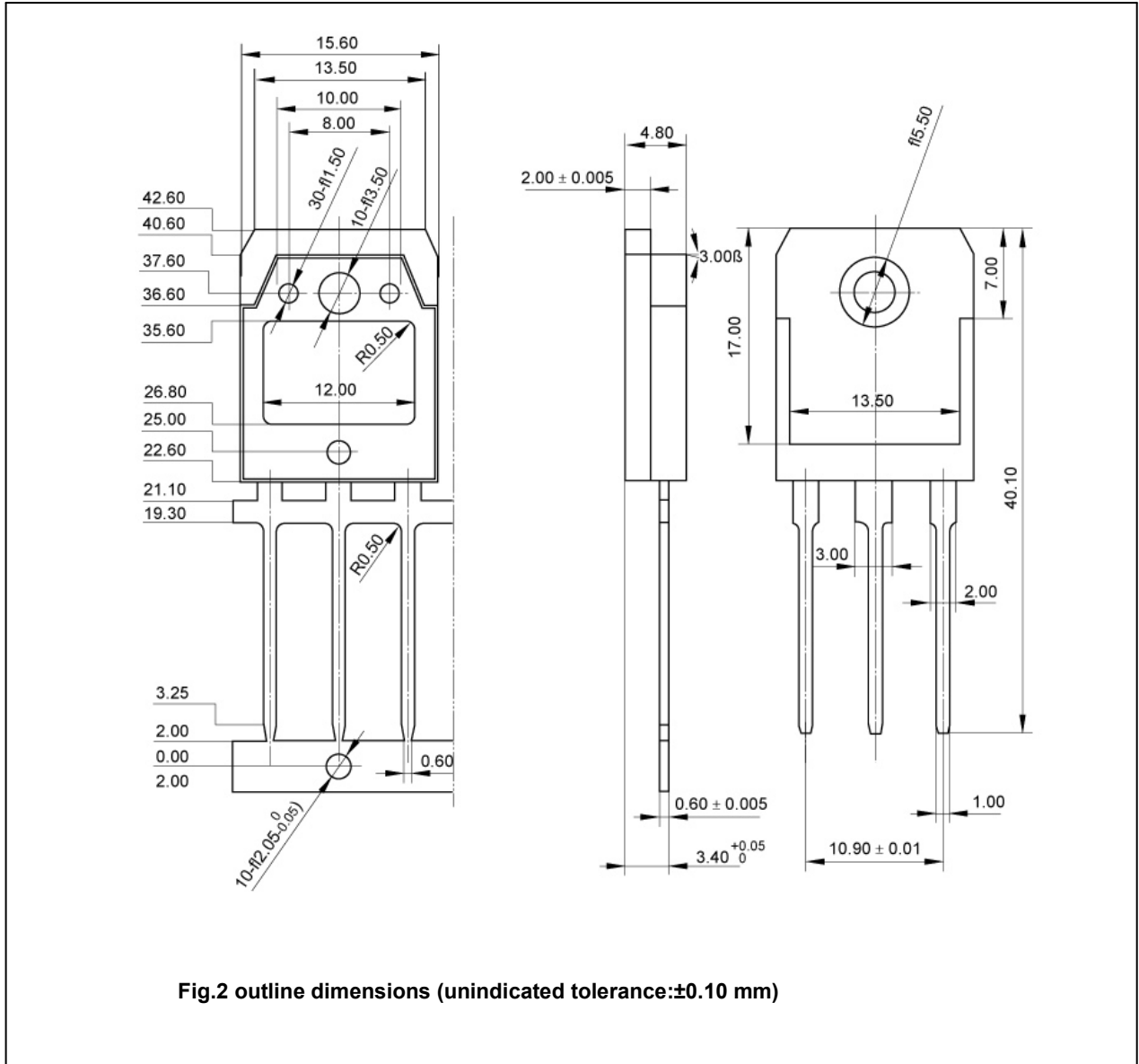


Fig.2 outline dimensions (unindicated tolerance: \pm 0.10 mm)