

Silicon NPN Power Transistors

2SC4057

DESCRIPTION

- With TO-247 package
- High voltage;high speed
- Switching power transistor

PINNING

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

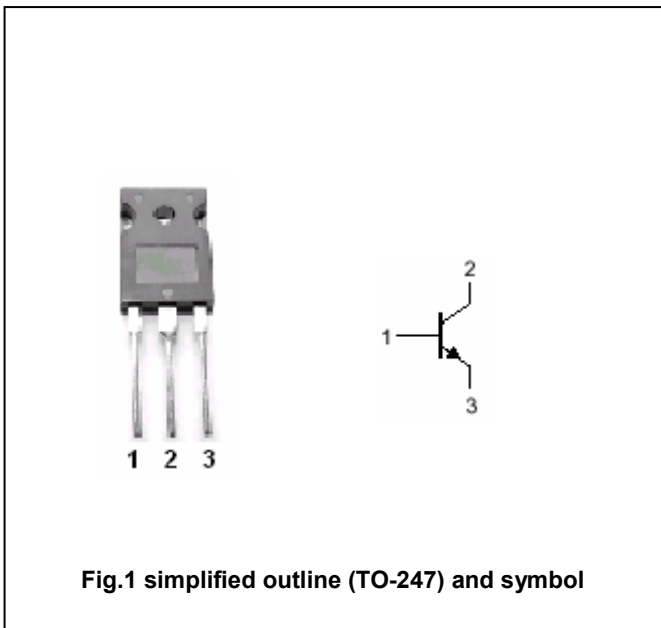


Fig.1 simplified outline (TO-247) and symbol

Absolute maximum ratings(Tc=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|---------------------------|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | Open emitter | 600 | V |
| V _{CEO} | Collector-emitter voltage | Open base | 450 | V |
| V _{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I _C | Collector current (DC) | | 8 | A |
| I _{CM} | Collector current-Peak | | 16 | A |
| I _B | Base current | | 4 | A |
| I _{BM} | Base current-Peak | | 8 | A |
| P _D | Total power dissipation | T _c =25°C | 80 | W |
| T _j | Junction temperature | | 150 | °C |
| T _{stg} | Storage temperature | | -55~150 | °C |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------------|-------------------------------------|------|------|
| R _{th j-c} | Thermal resistance junction to case | 1.56 | °C/W |

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CHARACTERISTICS

T_j=25 °C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|--|-----|------|-----|------|
| V _{CEQ(SUS)} | Collector-emitter sustaining voltage | I _C =0.2A; I _B =0 | 450 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =4A; I _B =0.8A | | | 1.0 | V |
| V _{BEsat} | Base-emitter saturation voltage | I _C =4A; I _B =0.8A | | | 1.5 | V |
| I _{CBO} | Collector cut-off current | At rated voltage | | | 0.1 | mA |
| I _{CEO} | Collector cut-off current | | | | | |
| I _{EBO} | Emitter cut-off current | At rated voltage | | | 0.1 | mA |
| h _{FE-1} | DC current gain | I _C =4A; V _{CE} =5V | 10 | | | |
| h _{FE-2} | DC current gain | I _C =1mA; V _{CE} =5V | 5 | | | |
| f _T | Transition frequency | I _C =0.8A; V _{CE} =10V | | 20 | | MHz |

Switching times resistive load

| | | | | | | |
|-----------------|--------------|---|--|--|-----|----|
| t _{on} | Turn-on time | I _C =4A I _{B1} =0.8A; I _{B2} =1.6A V _{BB2} =4V, R _L =37.5Ω | | | 0.5 | μs |
| t _s | Storage time | | | | 2.0 | μs |
| t _f | Fall time | | | | 0.2 | μs |

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PACKAGE OUTLINE

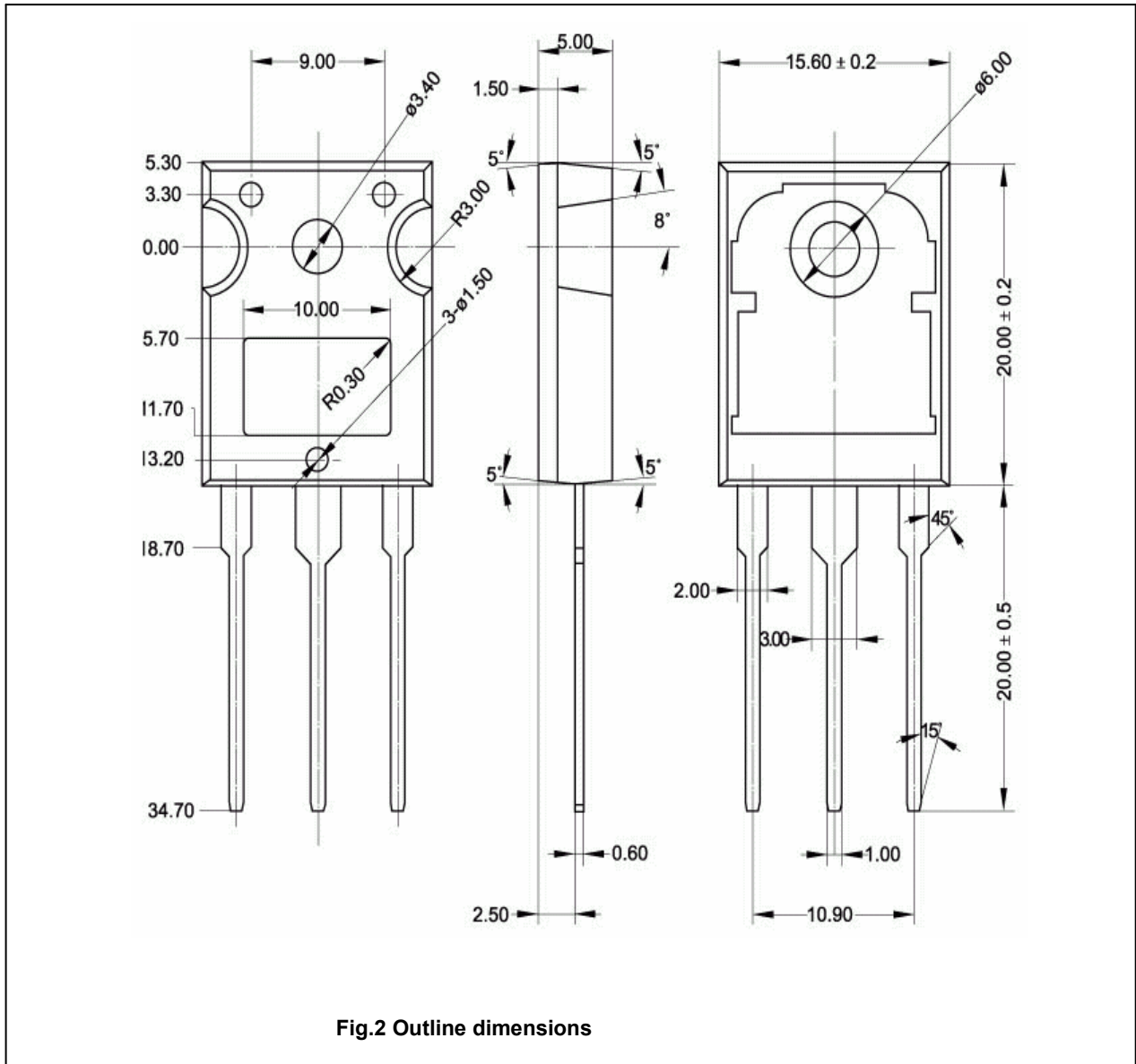


Fig.2 Outline dimensions