

Silicon NPN Power Transistors

BUT18F BUT18AF

DESCRIPTION

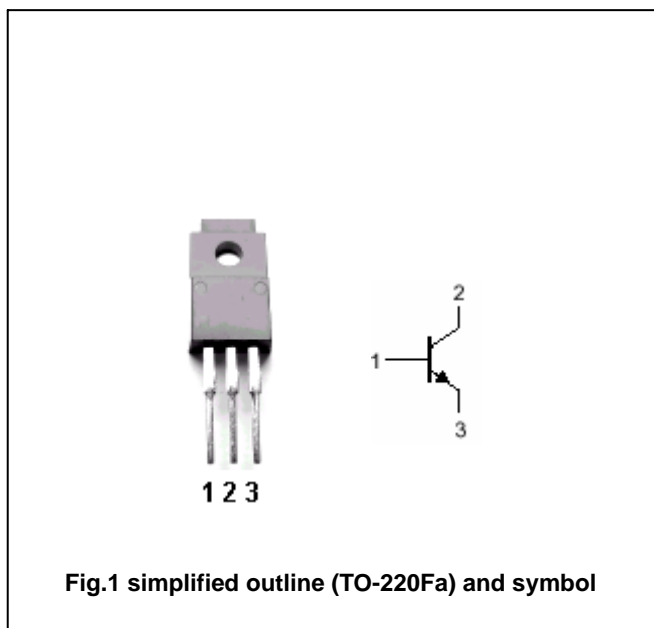
- With TO-220Fa package
- High voltage ,high speed

APPLICATIONS

- Converters
- Inverters
- Switching regulators
- Motor control systems

PINNING

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



Absolute maximum ratings (Tc=25)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|---------------------------|--------------------|---------|------|
| V _{CBO} | Collector-base voltage | BUT18F | 850 | V |
| | | BUT18AF | 1000 | |
| V _{CEO} | Collector-emitter voltage | BUT18F | 400 | V |
| | | BUT18AF | 450 | |
| V _{EBO} | Emitter-base voltage | Open collector | 9 | V |
| I _C | Collector current | | 6 | A |
| I _{CM} | Collector current-peak | | 12 | A |
| I _B | Base current | | 3 | A |
| I _{BM} | Base current-peak | | 6 | A |
| P _{tot} | Total power dissipation | T _C =25 | 33 | W |
| T _j | Junction temperature | | 150 | |
| T _{stg} | Storage temperature | | -65~150 | |

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CHARACTERISTICS

T_j=25 unless otherwise specified

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|---------|---|-----|------|------------|------|
| V _{CEO(SUS)} | Collector-emitter sustaining voltage | BUT18F | I _C =0.1A; I _B =0; L=25mH | 400 | | | V |
| | | BUT18AF | | 450 | | | |
| V _{CEsat} | Collector-emitter saturation voltage | | I _C =4A; I _B =0.8A | | | 1.5 | V |
| V _{BEsat} | Base-emitter saturation voltage | | I _C =4A; I _B =0.8A | | | 1.3 | V |
| I _{CES} | Collector cut-off current | BUT18F | V _{CE} =850V; V _{BE} =0 T _j =125 | | | 1.0 2.0 | mA |
| | | BUT18AF | V _{CE} =1000V; V _{BE} =0 T _j =125 | | | 1.0 2.0 | |
| I _{EBO} | Emitter cut-off current | | V _{EB} =9V; I _C =0 | | | 10 | mA |
| h _{FE-1} | DC current gain | | I _C =10mA; V _{CE} =5V | 10 | | 35 | |
| h _{FE-2} | DC current gain | | I _C =1A; V _{CE} =5V | 10 | | 35 | |

Switching times resistive load

| | | | | | | | |
|-----------------|--------------|--|--|--|--|-----|----|
| t _{on} | Turn-on time | | I _C =4A; I _{B1} =-I _{B2} =0.8A V _{CC} =250V | | | 1.0 | μs |
| t _s | Storage time | | | | | 4.0 | μs |
| t _f | Fall time | | | | | 0.8 | μs |

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PACKAGE OUTLINE

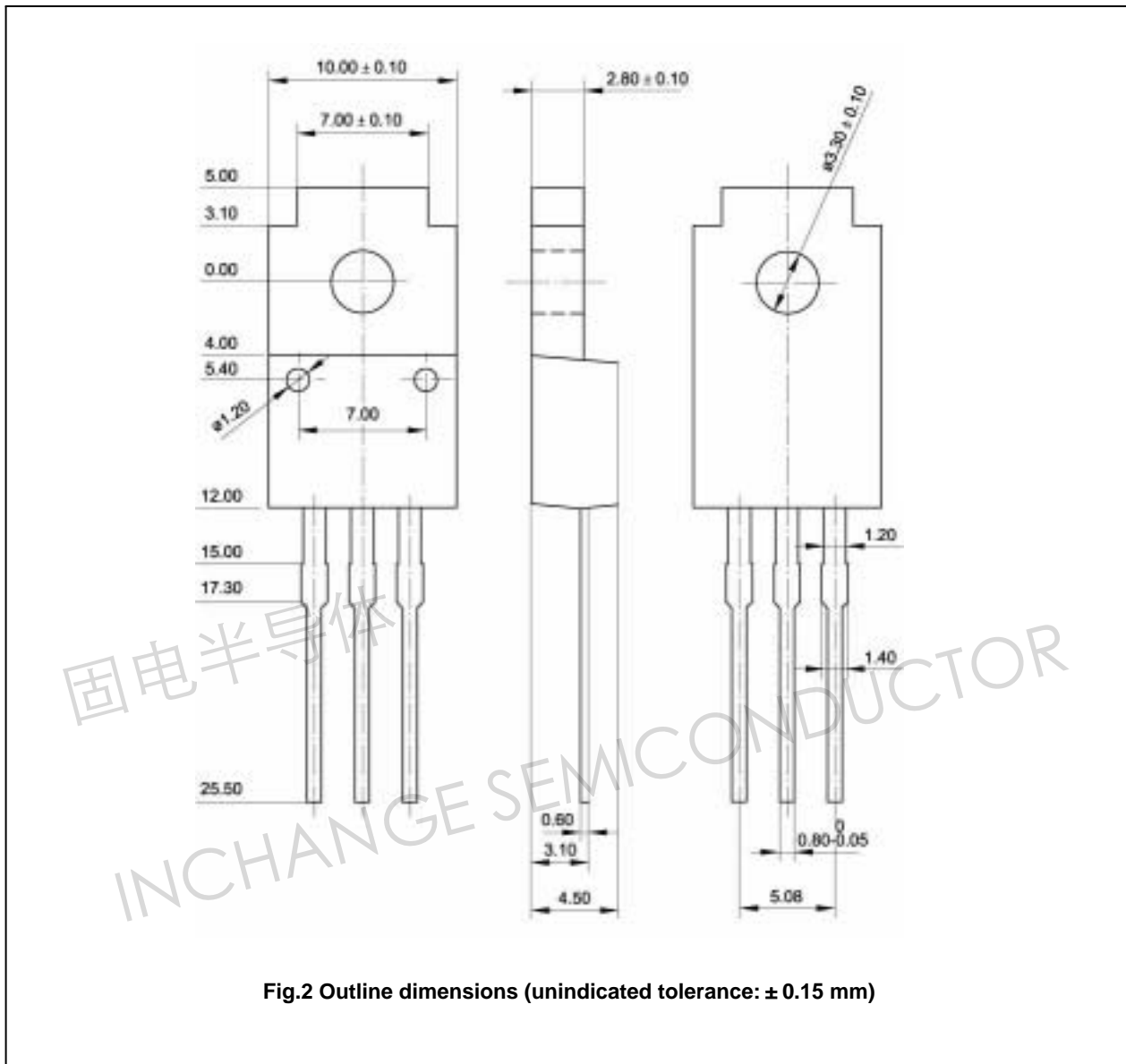


Fig.2 Outline dimensions (unindicated tolerance: ± 0.15 mm)