

Silicon NPN Power Transistors

BUF405AFP

DESCRIPTION

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

APPLICATIONS

- Switch mode power supplies
- Motor drivers

PINNING

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

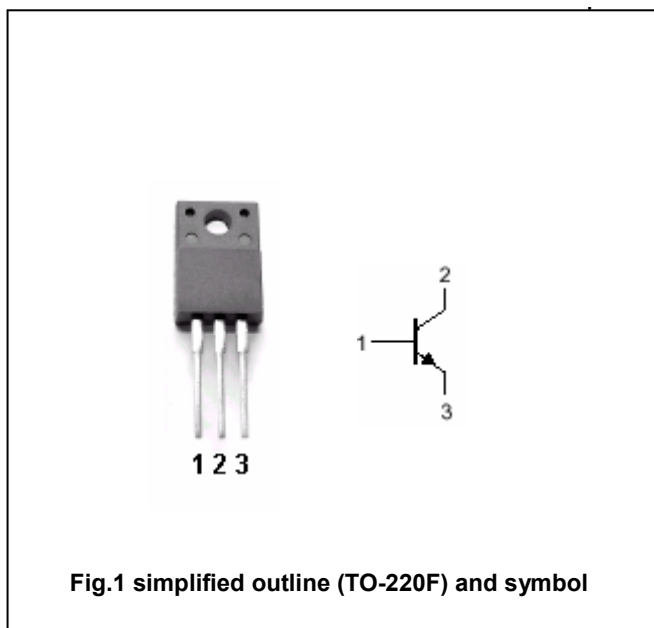


Fig.1 simplified outline (TO-220F) and symbol

Absolute maximum ratings(Ta=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|--|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | Open emitter | 1000 | V |
| V _{CEO} | Collector-emitter voltage | Open base | 450 | V |
| V _{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I _C | Collector current (DC) | | 7.5 | A |
| I _{CM} | Collector current-Peak | t _p <5ms | 15 | A |
| I _B | Base current (DC) | | 3 | A |
| I _{BM} | Base current-Peak | t _p <5ms | 4.5 | A |
| P _{tot} | Total power dissipation | T _C =25°C | 39 | W |
| T _j | Maximum operating junction temperature | | 150 | °C |
| T _{stg} | Storage temperature | | -65~150 | °C |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | VALUE | UNIT |
|------------------------|-------------------------------------|-------|------|
| R _{th j-case} | Thermal resistance junction to case | 3.2 | °C/W |

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CHARACTERISTICS

T_j=25 °C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|--|-----|------|------------|------|
| V _{CEO(SUS)} | Collector-emitter sustaining voltage | I _C =200mA ; I _B =0; L=25mH | 450 | | | V |
| V _{(BR)EBO} | Emitter-base breakdown voltage | I _E =50mA ; I _C =0 | 7 | | | V |
| V _{CEsat-1} | Collector-emitter saturation voltage | I _C =2.5A; I _B =0.25A T _C =100 °C | | 0.8 | 2.8 | V |
| V _{CEsat-2} | Collector-emitter saturation voltage | I _C =5A ; I _B =1A T _C =100 °C | | 0.5 | 2.0 | V |
| V _{BEsat-1} | Base-emitter saturation voltage | I _C =2.5A; I _B =0.25A T _C =100 °C | | 0.9 | 1.5 | V |
| V _{BEsat-2} | Base-emitter saturation voltage | I _C =5A ; I _B =1A T _C =100 °C | | 1.1 | 1.5 | V |
| I _{CEV} | Collector cut-off current | V _{CE} =1000V; V _{BE} =-1.5V T _C =100 °C | | | 100 500 | μA |
| I _{EBO} | Emitter cut-off current | V _{EB} =5V; I _C =0 | | | 1 | mA |

Switching times inductive load

| | | | | | | |
|----------------|--------------|--|--|------|--|----|
| t _s | Storage time | I _C =2.5A ; V _{CC} =50V I _{B1} =0.25A; V _{BB} =-5V ; L=1mH R _{BB} =2.4Ω; V _{clamp} =400V | | 0.8 | | μs |
| t _f | Fall time | | | 0.05 | | μs |

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PACKAGE OUTLINE

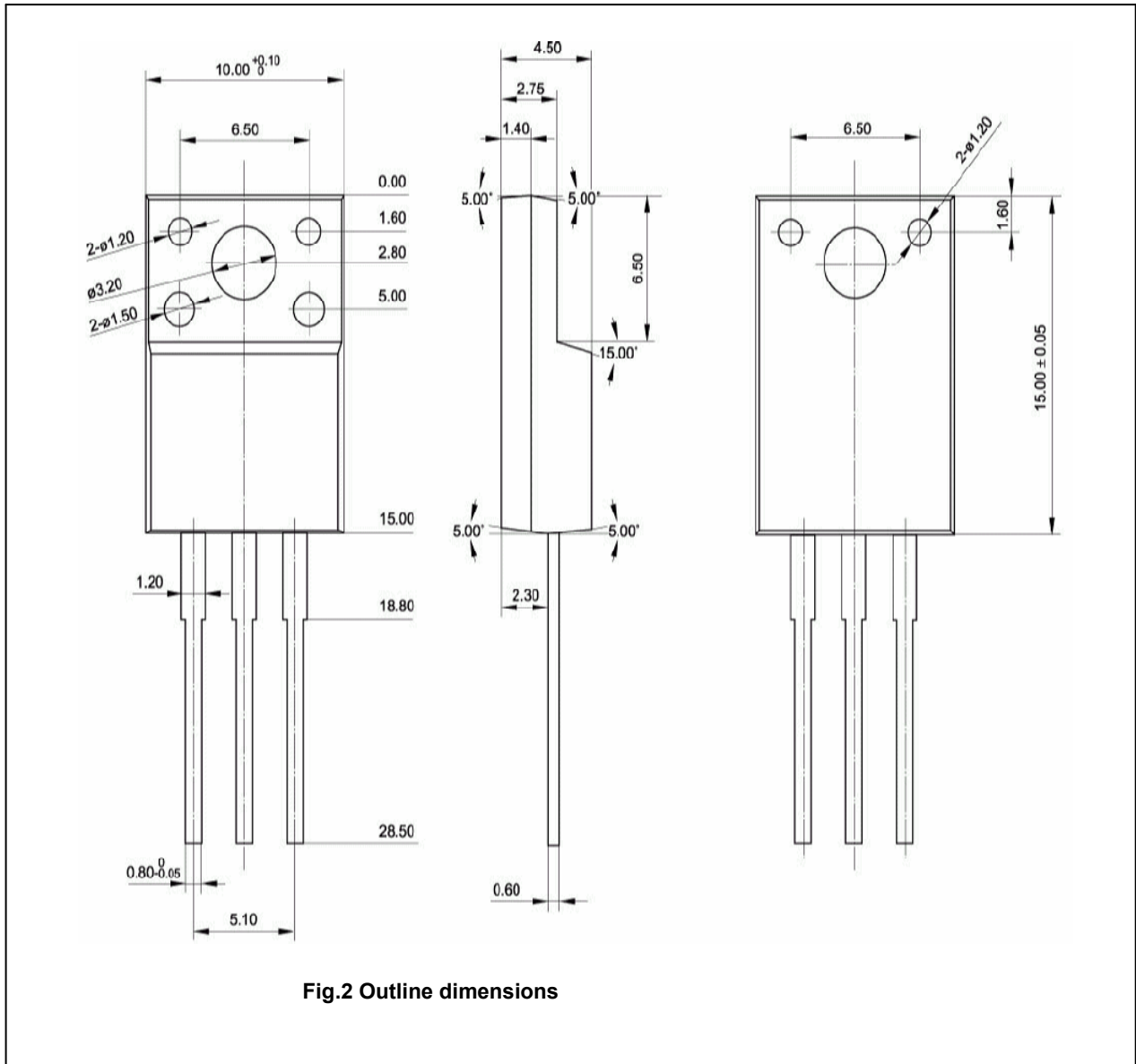


Fig.2 Outline dimensions