

Silicon NPN Power Transistors

MJF18008

DESCRIPTION

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

APPLICATIONS

- Designed for use in 220V line-operated switchmode power supplies and electronic light ballasts

PINNING

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

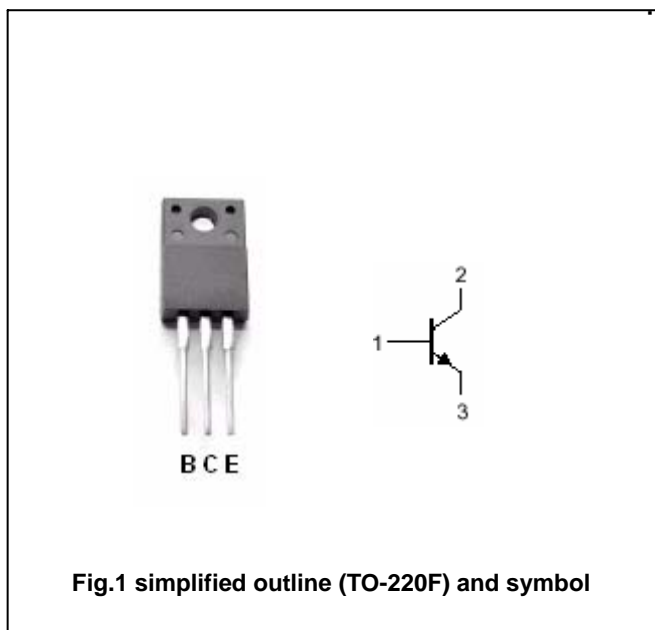


Fig.1 simplified outline (TO-220F) and symbol

Absolute maximum ratings(Tc=25)

| 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 | 9 | V |
| I_C | Collector current (DC) | | 10 | 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 | $T_C=25$ | 45 | W |
| T_j | Junction temperature | | 150 | |
| T_{stg} | Storage temperature | | -65~150 | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | VALUE | UNIT |
|---------------|--|-------|------|
| $R_{th\ j-C}$ | Thermal resistance junction to case | 2.78 | /W |
| $R_{th\ j-A}$ | Thermal resistance junction to ambient | 62.5 | /W |

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CHARACTERISTICS

T_j=25 unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT | |
|-----------------------|--------------------------------------|---|---------------------|------|-------------|------|----|
| V _{CEQ(SUS)} | Collector-emitter sustaining voltage | I _C =0.1A; L=25mH | 450 | | | V | |
| V _{CEsat-1} | Collector-emitter saturation voltage | I _C =2A; I _B =0.2A T _C =125 | | | 0.6 0.65 | V | |
| V _{CEsat-2} | Collector-emitter saturation voltage | I _C =4.5A; I _B =0.9A T _C =125 | | | 0.7 0.8 | V | |
| V _{BEsat-1} | Base-emitter saturation voltage | I _C =2A ;I _B =0.2A | | | 1.10 | V | |
| V _{BEsat-2} | Base-emitter saturation voltage | I _C =4.5A; I _B =0.9A | | | 1.25 | V | |
| I _{CES} | Collector cut-off current | V _{CE} =RatedV _{CE} ; V _{EB} =0 | T _C =125 | | | 0.1 | mA |
| | | | | | | 0.5 | |
| | | V _{CE} =800V | | | | 0.1 | |
| I _{CEO} | Collector cut-off current | V _{CE} =RatedV _{CEQ} ; I _B =0 | | | 0.1 | mA | |
| I _{EBO} | Emitter cut-off current | V _{EB} =9V; I _C =0 | | | 0.1 | mA | |
| h _{FE-1} | DC current gain | I _C =1A ; V _{CE} =5V | 14 | | 34 | | |
| h _{FE-2} | DC current gain | I _C =4.5A ; V _{CE} =1V | 6 | | | | |
| h _{FE-3} | DC current gain | I _C =2A ; V _{CE} =1V | 11 | | | | |
| h _{FE-4} | DC current gain | I _C =10mA ; V _{CE} =5V | 10 | | | | |
| f _T | Transition frequency | I _C =0.5A ; V _{CE} =10V; f=1MHz | | 13 | | MHz | |
| C _{OB} | Collector outoput capacitance | I _E =0; V _{CB} =10V; f=1MHz | | 100 | | pF | |

Switching times resistive load,Duty Cycle 10%,Pulse Width=20 μ s

| | | | | | | |
|------------------|---------------|--|--|--|------|-----|
| t _{on} | Turn-on time | V _{CC} =300V ,I _C =2A I _{B1} =0.2A; I _{B2} =1.0A | | | 0.3 | μ s |
| t _{off} | Turn-off time | | | | 2.5 | μ s |
| t _{on} | Turn-on time | V _{CC} =300V ,I _C =4.5A I _{B1} =0.9A; I _{B2} =2.25A | | | 0.18 | μ s |
| t _{off} | Turn-off time | | | | 2.5 | μ s |

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PACKAGE OUTLINE

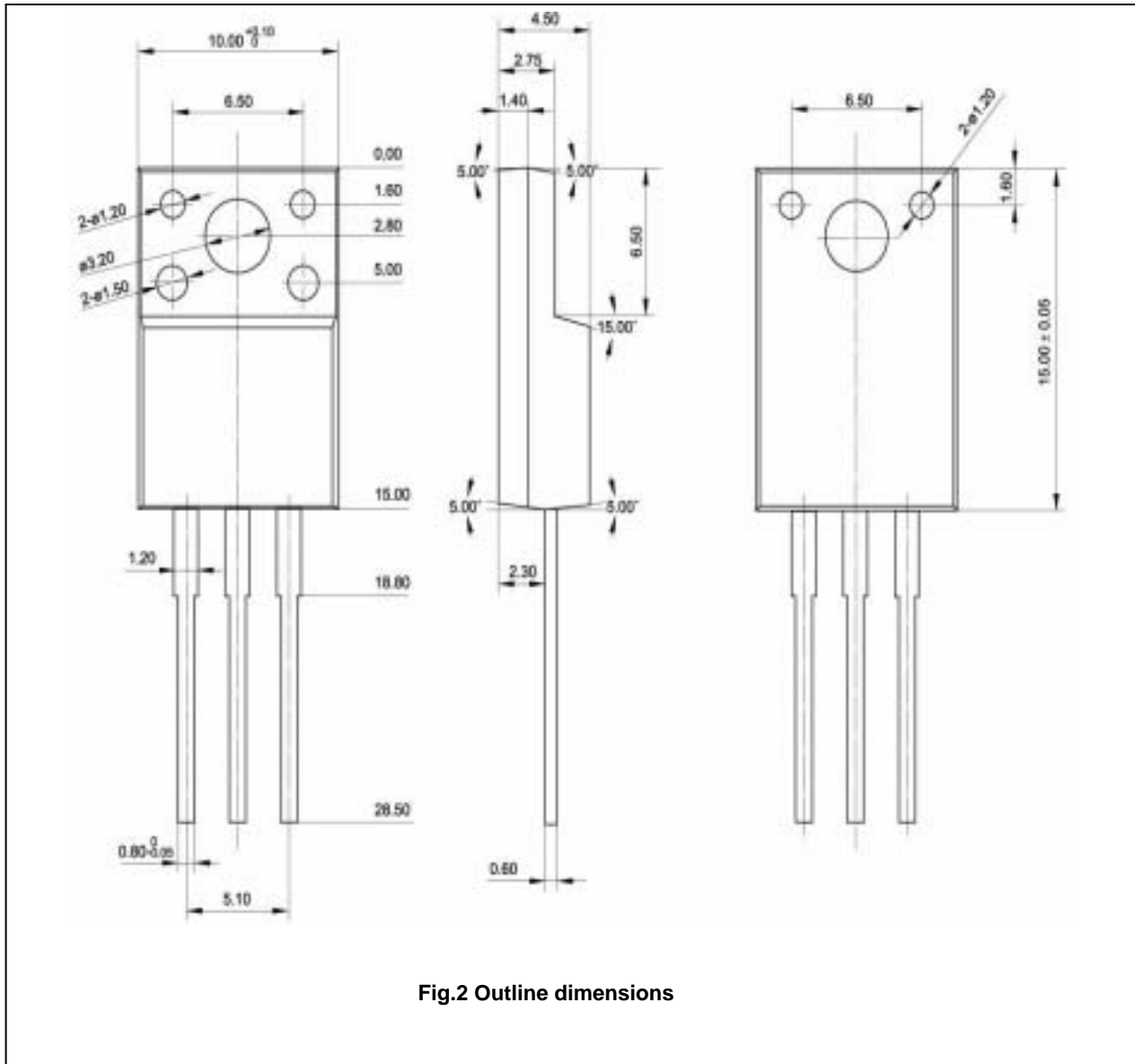


Fig.2 Outline dimensions