

Silicon Power Transistors

BUL510

DESCRIPTION

- With TO-220C package
- High voltage
- High switching speed

APPLICATIONS

- Electronic ballasts for fluorescent lighting
- Switch mode power supplies
- Electronic transformer for halogen lamp

PINNING

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

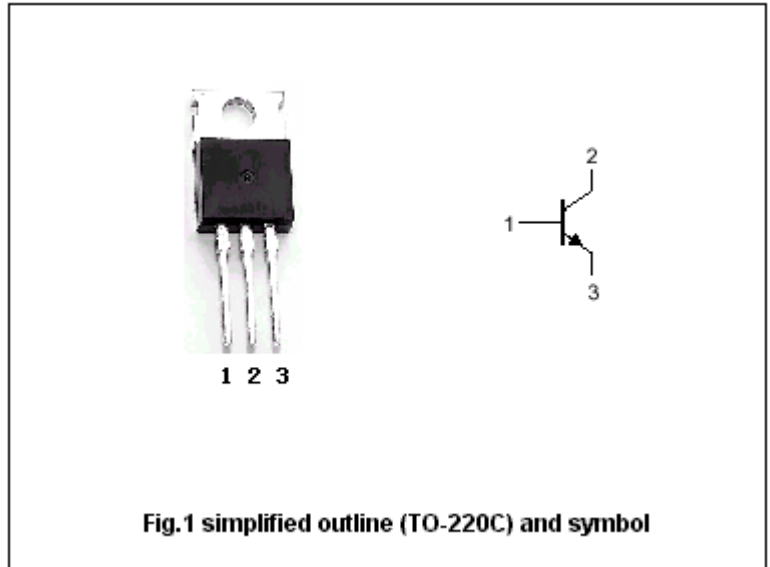


Fig.1 simplified outline (TO-220C) and symbol

ABSOLUTE MAXIMUM RATINGS

| 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 | $t_p < 5ms$ | 18 | A |
| I_B | Base current | | 3.5 | A |
| I_{BM} | Base current-Peak | $t_p < 5ms$ | 7 | A |
| P_{tot} | Total power dissipation | $T_C = 25$ | 100 | W |
| T_j | Maximum operating junction temperature | | 150 | |
| T_{stg} | Storage temperature | | -65~150 | |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | VALUE | UNIT |
|------------------|--|-------|------|
| $R_{th\ j-case}$ | Thermal resistance junction to case | 1.25 | /W |
| $R_{th\ j-amb}$ | 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 _{CEO(SUS)} | Collector-emitter sustaining voltage | I _C =100mA ;L=25mH | 450 | | | V |
| V _{(BR)EBO} | Emitter-base breakdown voltage | I _E =10mA ;I _C =0 | 9 | | | V |
| V _{CEsat-1} | Collector-emitter saturation voltage | I _C =3A I _B =0.6A | | | 0.8 | V |
| V _{CEsat-2} | Collector-emitter saturation voltage | I _C =4A I _B =0.8A | | | 1.0 | V |
| V _{CEsat-3} | Collector-emitter saturation voltage | I _C =5A I _B =1.25A | | | 1.5 | V |
| V _{BEsat-1} | Emitter-base saturation voltage | I _C =3A I _B =0.6A | | | 1.2 | V |
| V _{BEsat-2} | Emitter-base saturation voltage | I _C =5A I _B =1.25A | | | 1.5 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =1000V I _E =0 T _C =125 | | | 100 500 | μA |
| I _{CEO} | Collector cut-off current | V _{CE} =450V I _B =0 | | | 250 | μA |
| h _{FE-1} | DC current gain | I _C =1A ; V _{CE} =5V | 15 | | 45 | |
| h _{FE-2} | DC current gain | I _C =10mA ; V _{CE} =5V | 10 | | | |

Switching times inductive load

| | | | | | | |
|----------------|--------------|---|--|--|------|----|
| t _s | Storage time | I _C =2.5A V _{CL} =300V I _{B1} =0.8A;I _{B2} =-1.6A L=200 μ H | | | 3.4 | μs |
| t _f | Fall time | | | | 0.15 | μs |

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PACKAGE OUTLINE

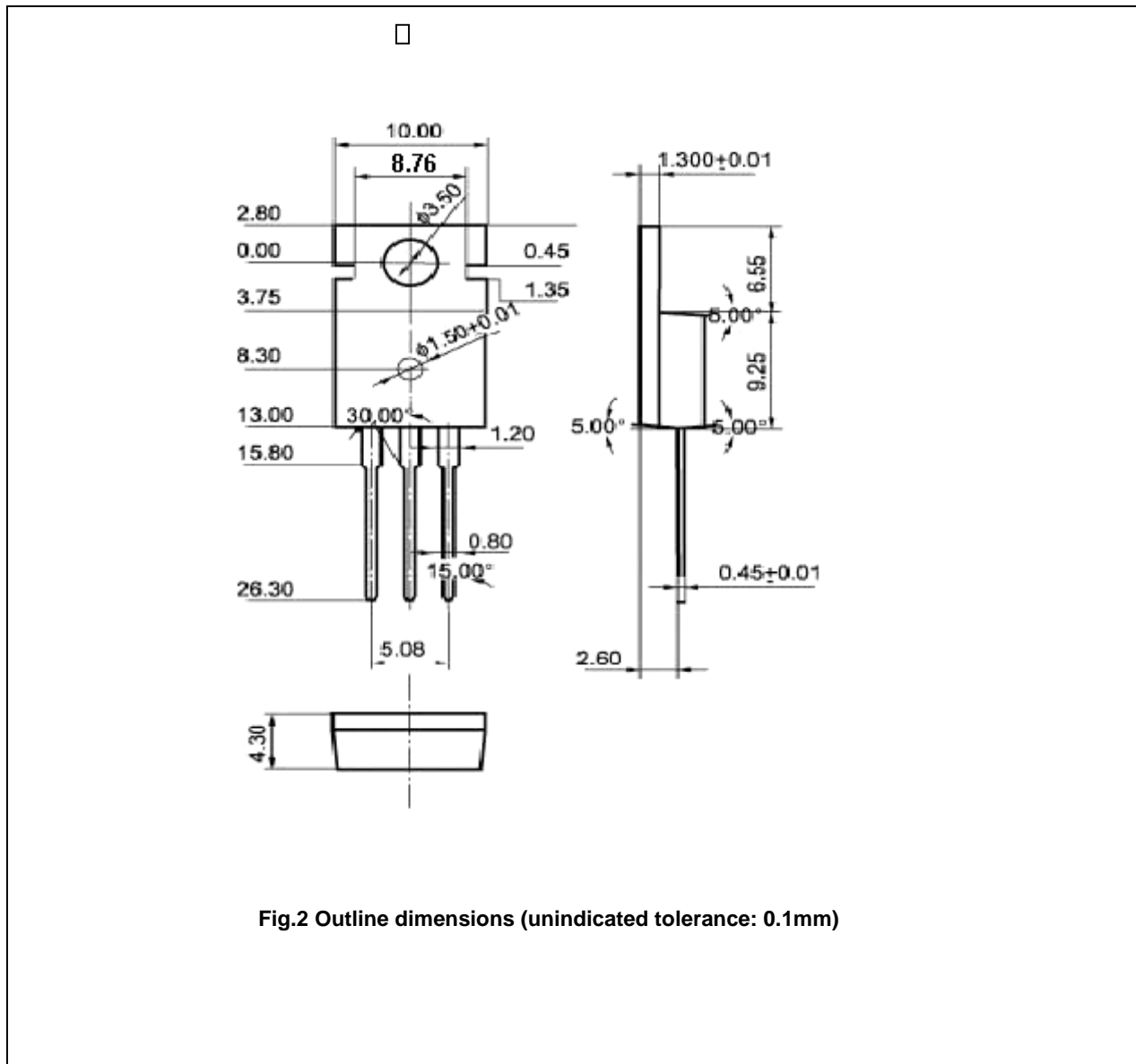


Fig.2 Outline dimensions (unindicated tolerance: 0.1mm)