

Silicon NPN Power Transistors

2SC3694

DESCRIPTION

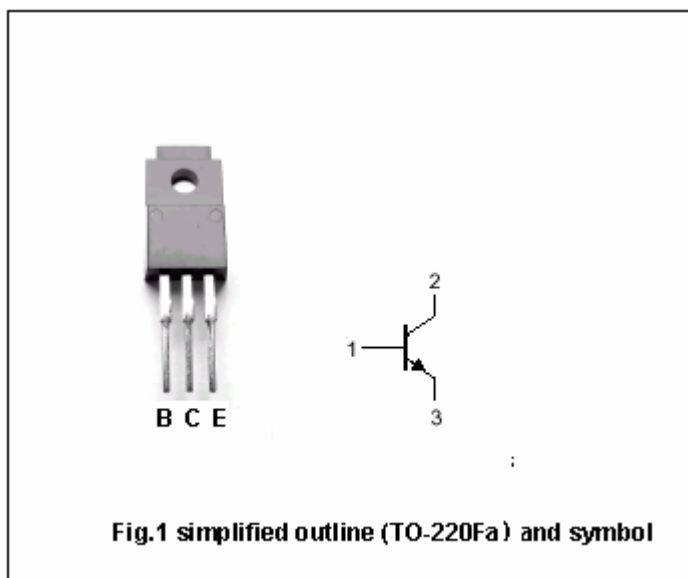
- With TO-220Fa package
- Large current ,high speed
- Low saturation voltage

APPLICATIONS

- For use in drivers such as DC-DC converters and actuators.

PINNING

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



Absolute maximum ratings(Ta=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|---------------------------|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | Open emitter | 100 | V |
| V _{CEO} | Collector-emitter voltage | Open base | 60 | V |
| V _{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I _C | Collector current | | 15 | A |
| I _{CM} | Collector current-peak | | 30 | A |
| I _B | Base current | | 7.5 | A |
| P _T | Total power dissipation | T _a =25°C | 2 | W |
| | | T _C =25°C | 30 | |
| T _j | Junction temperature | | 150 | °C |
| T _{stg} | Storage temperature | | -55~150 | °C |

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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 =8A; I _B =0.8A; L=1mH | 60 | | | V |
| V _{CE(sat)1} | Collector-emitter saturation voltage | I _C =8A; I _B =0.4A | | | 0.3 | V |
| V _{CE(sat)2} | Collector-emitter saturation voltage | I _C =12A; I _B =0.6A | | | 0.5 | V |
| V _{BE(sat)1} | Base-emitter saturation voltage | I _C =8A; I _B =0.4A | | | 1.2 | V |
| V _{BE(sat)2} | Base-emitter saturation voltage | I _C =12A; I _B =0.6A | | | 1.5 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =60V; I _E =0 | | | 10 | μA |
| I _{CER} | Collector cut-off current | V _{CB} =60V; R _{BE} =50Ω; T _a =125°C | | | 1.0 | mA |
| I _{CEx1} | Collector cut-off current | V _{CB} =60V; V _{BE} =-1.5V | | | 10 | μA |
| I _{CEx2} | Collector cut-off current | V _{CB} =60V; V _{BE} =-1.5V; T _a =125°C | | | 1.0 | mA |
| I _{EBO} | Emitter cut-off current | V _{EB} =5V; I _C =0 | | | 10 | μA |
| h _{FE-1} | DC current gain | I _C =1.5A; V _{CE} =2V | 100 | | | |
| h _{FE-2} | DC current gain | I _C =3.0A; V _{CE} =2V | 100 | | 400 | |
| h _{FE-3} | DC current gain | I _C =8.0A; V _{CE} =2V | 60 | | | |
| C _{ob} | Collector capacitance | V _{CB} =10V; I _E =0; f=1.0MHz | | 180 | | pF |
| f _T | Transition frequency | I _C =1.5A; V _{CE} =10V | | 120 | | MHz |

Switching times

| | | | | | | |
|-----------------|--------------|---|--|--|-----|----|
| t _{on} | Turn-on time | I _C =8.0A; I _{B1} =-I _{B2} =0.4A V _{CC} =50V, R _L =6.3Ω | | | 0.3 | μs |
| t _s | Storage time | | | | 1.5 | μs |
| t _f | Fall time | | | | 0.3 | μs |

◆ h_{FE-2} Classifications

| M | L | K |
|---------|---------|---------|
| 100-120 | 150-300 | 200-400 |

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PACKAGE OUTLINE

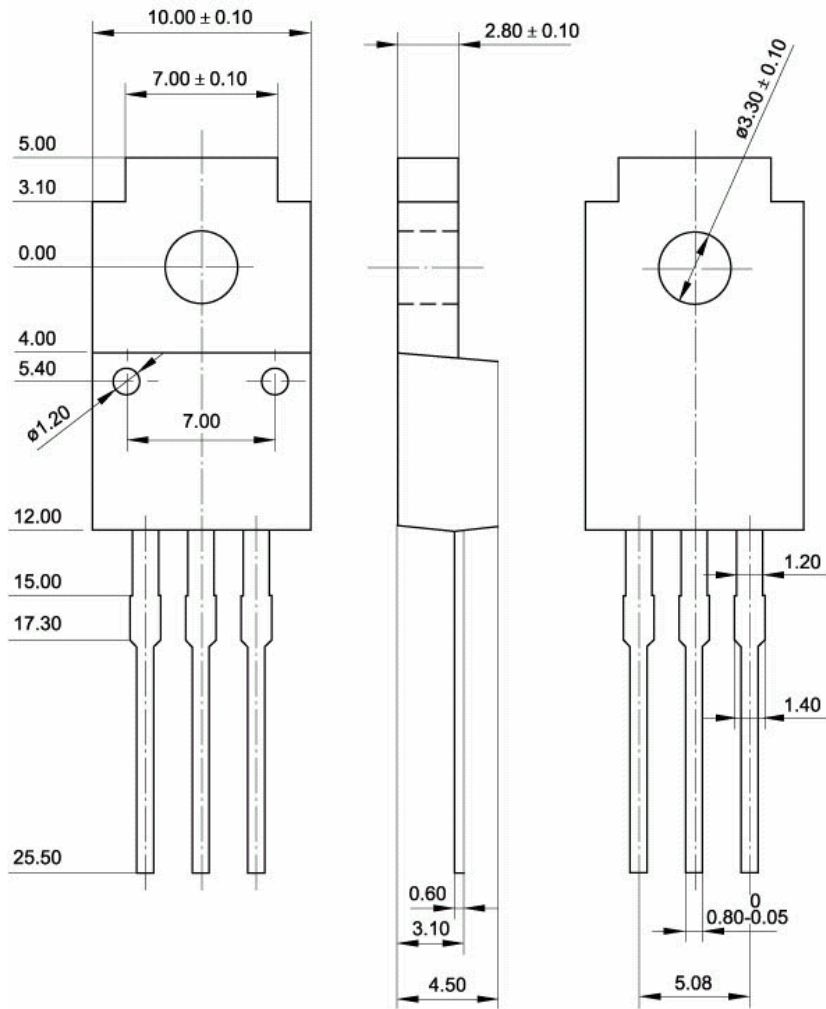


Fig.2 Outline dimensions (unindicated tolerance: ± 0.15 mm)