

Silicon NPN Power Transistors

2SD2374 2SD2374A

DESCRIPTION

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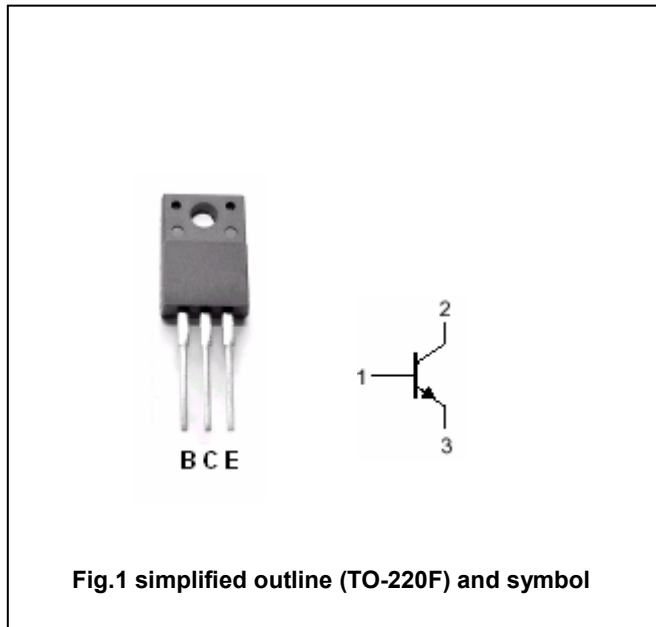
- With TO-220F package
- Complement to type 2SB1548/1548A
- Low collector saturation voltage
- High forward current transfer ratio h_{FE} which has satisfactory linearity

APPLICATIONS

- For power amplifications

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 | 2SD2374 | Open emitter | 60 | V |
| | | 2SD2374A | | 80 | |
| V_{CEO} | Collector-emitter voltage | 2SD2374 | Open base | 60 | V |
| | | 2SD2374A | | 80 | |
| V_{EBO} | Emitter-base voltage | Open collector | 6 | V | |
| I_C | Collector current | | 3 | A | |
| I_{CM} | Collector current-peak | | 5 | A | |
| P_C | Collector dissipation | $T_a=25^\circ\text{C}$ | 2 | W | |
| | | $T_C=25^\circ\text{C}$ | 25 | | |
| 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

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| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|--------------------|--------------------------------------|----------|---|-----|------|-----|------|
| V _{CEO} | Collector-emitter voltage | 2SD2374 | I _C =30mA ; I _B =0 | 60 | | | V |
| | | 2SD2374A | | 80 | | | |
| V _{CEsat} | Collector-emitter saturation voltage | | I _C =3A ; I _B =0.375A | | | 1.2 | V |
| V _{BE} | Base-emitter voltage | | I _C =3A ; V _{CE} =4V | | | 1.8 | V |
| I _{CBO} | Collector cut-off current | 2SD2374 | V _{CB} =60V ; I _E =0 | | | 200 | μA |
| | | 2SD2374A | V _{CB} =80V ; I _E =0 | | | | |
| I _{CEO} | Collector cut-off current | 2SD2374 | V _{CE} =30V ; I _B =0 | | | 300 | μA |
| | | 2SD2374A | V _{CE} =60V ; I _B =0 | | | | |
| I _{EBO} | Emitter cut-off current | | V _{EB} =6V ; I _C =0 | | | 1 | mA |
| h _{FE-1} | DC current gain | | I _C =1A ; V _{CE} =4V | 70 | | 250 | |
| h _{FE-2} | DC current gain | | I _C =3A ; V _{CE} =4V | 10 | | | |
| f _T | Transition frequency | | I _C =0.5A ; V _{CE} =10V | | 30 | | MHz |

Switching times

| | | | | | | |
|-----------------|--------------|--|--|-----|--|----|
| t _{on} | Turn-on time | I _C =1.0A ; I _{B1} =-I _{B2} =0.1A V _{CC} =50V | | 0.5 | | μs |
| t _s | Storage time | | | 2.5 | | μs |
| t _f | Fall time | | | 0.4 | | μs |

◆ h_{FE-1} Classifications

| Q | P |
|--------|---------|
| 70-150 | 120-250 |

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PACKAGE OUTLINE

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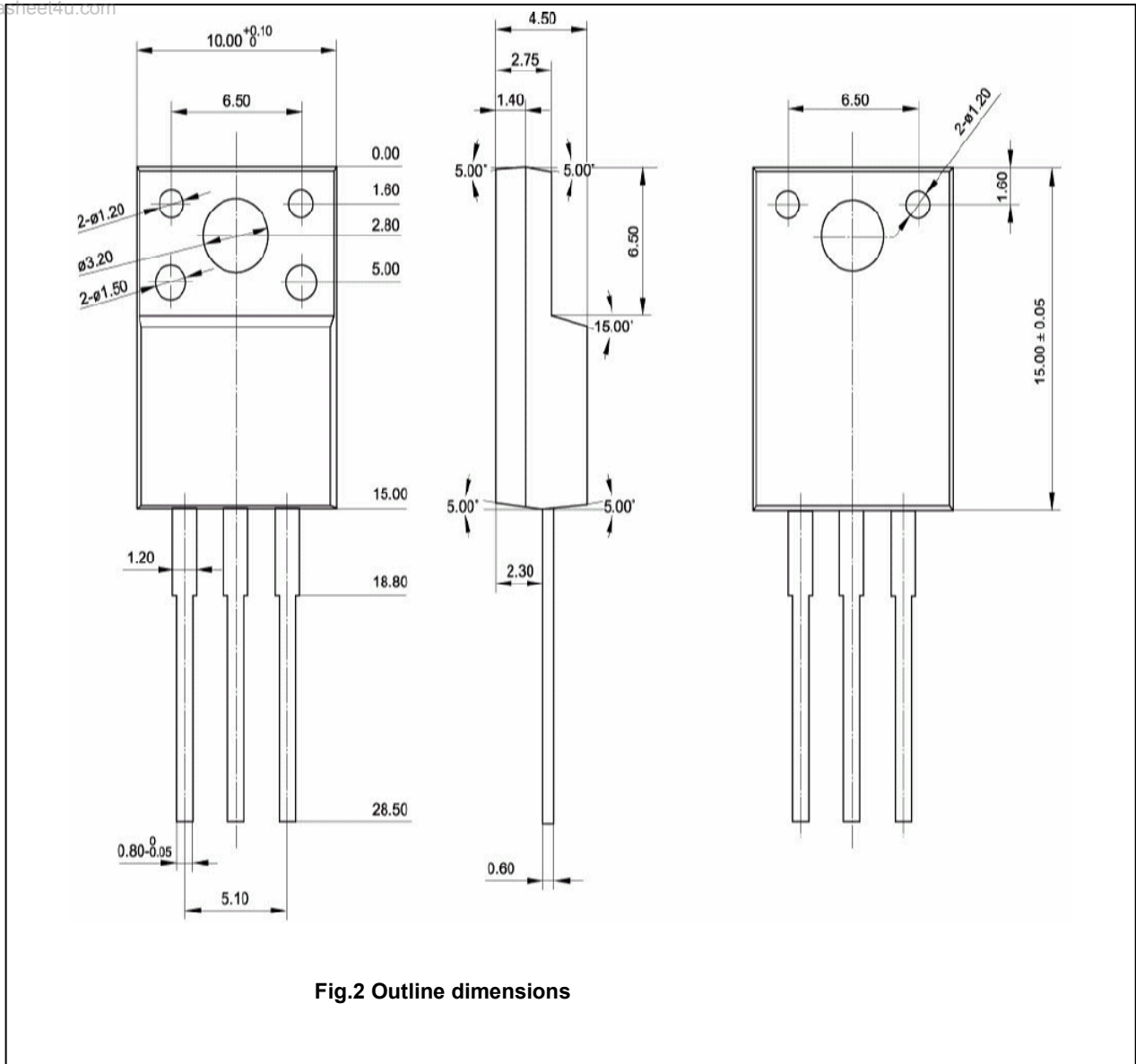


Fig.2 Outline dimensions

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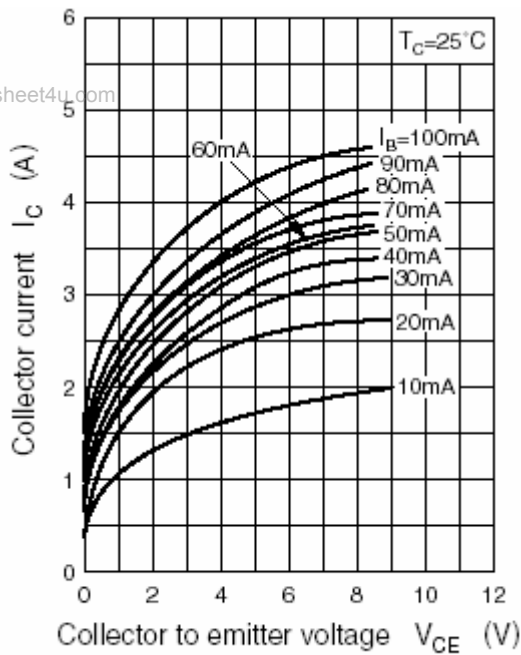


Fig.3 Static Characteristic

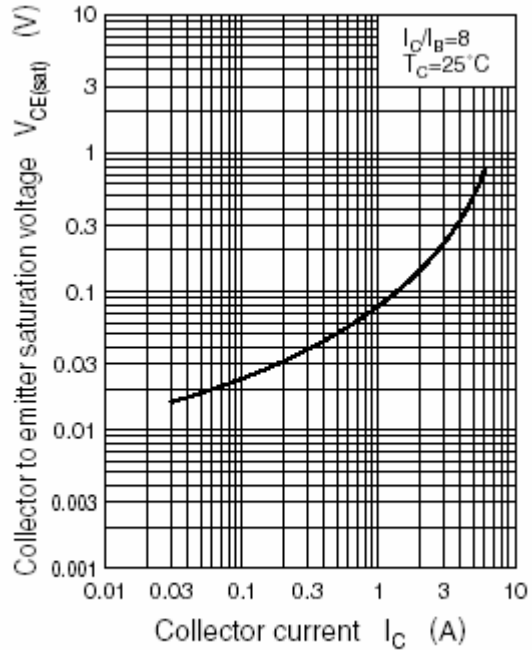


Fig.4 Collector-Emitter Saturation Voltage

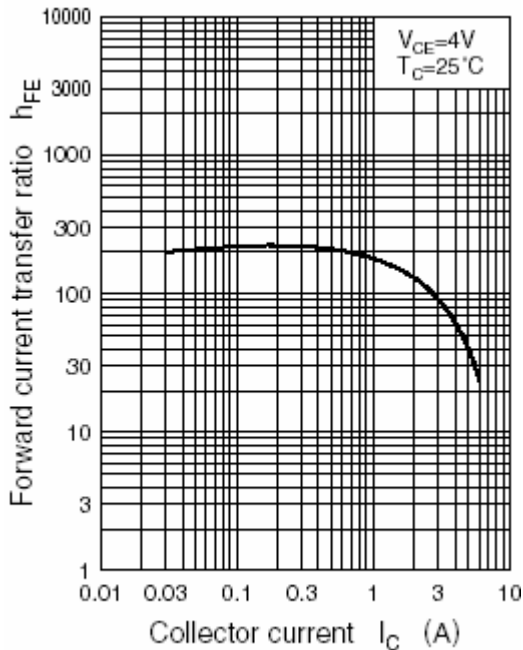


Fig.5 DC current Gain

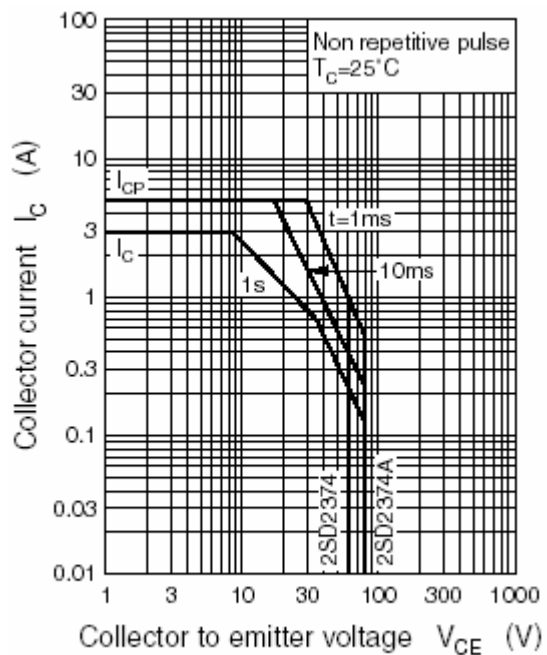


Fig.6 Safe Operating Area