

Silicon NPN Power Transistors

KSC2334

DESCRIPTION

- With TO-220 package
- Complement to type KSA1010
- Low collector saturation voltage
- Fast switching speed

APPLICATIONS

- Switching regulators
- DC/DC converters
- High frequency power amplifiers

PINNING

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

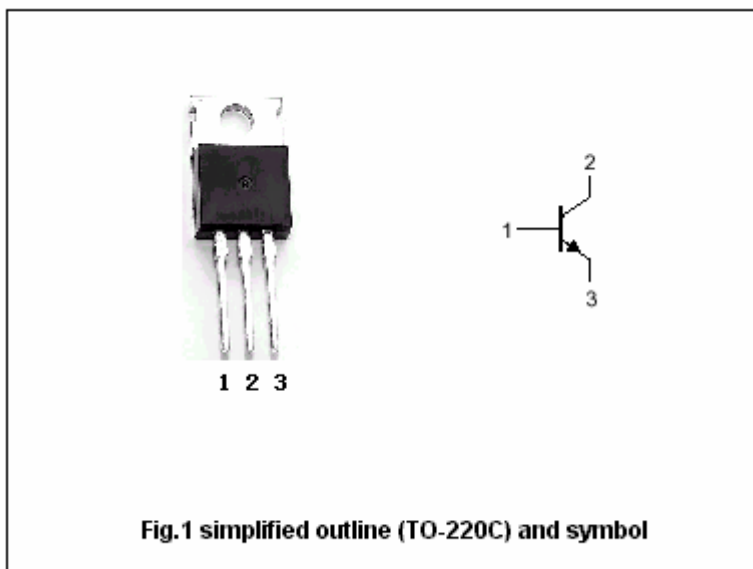


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings(Ta=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|---------------------------|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | Open emitter | 150 | V |
| V _{CEO} | Collector-emitter voltage | Open base | 100 | V |
| V _{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I _C | Collector current | | 7 | A |
| I _{CM} | Collector current-peak | | 15 | A |
| I _B | Base current | | 3.5 | A |
| P _T | Total power dissipation | T _a =25°C | 1.5 | W |
| | | T _C =25°C | 40 | |
| 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)} | Base-emitter sustaining voltage | I _C =5.0A, I _B =0.5A, L=1mH | 100 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =5A; I _B =0.5A | | | 0.6 | V |
| V _{BEsat} | Base-emitter saturation voltage | I _C =5A; I _B =0.5A | | | 1.5 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =100V; I _E =0 | | | 10 | μA |
| I _{EBO} | Emitter cut-off current | V _{EB} =5V; I _C =0 | | | 10 | μA |
| h _{FE-1} | DC current gain | I _C =0.5A; V _{CE} =5V | 40 | | | |
| h _{FE-2} | DC current gain | I _C =3A; V _{CE} =5V | 40 | | 240 | |
| h _{FE-3} | DC current gain | I _C =5A; V _{CE} =5V | 20 | | | |

Switching times resistive load

| | | | | | | |
|-----------------|--------------|--|--|--|-----|----|
| t _{on} | Turn-on time | I _C =5A I _{B1} =- I _{B2} =0.5A R _L =10Ω; V _{CC} ≈50V | | | 0.5 | μs |
| t _s | Storage time | | | | 1.5 | μs |
| t _f | Fall time | | | | 0.5 | μs |

◆ h_{FE-2} Classifications

| R | O | Y |
|-------|--------|---------|
| 40-80 | 70-140 | 120-240 |

PACKAGE OUTLINE

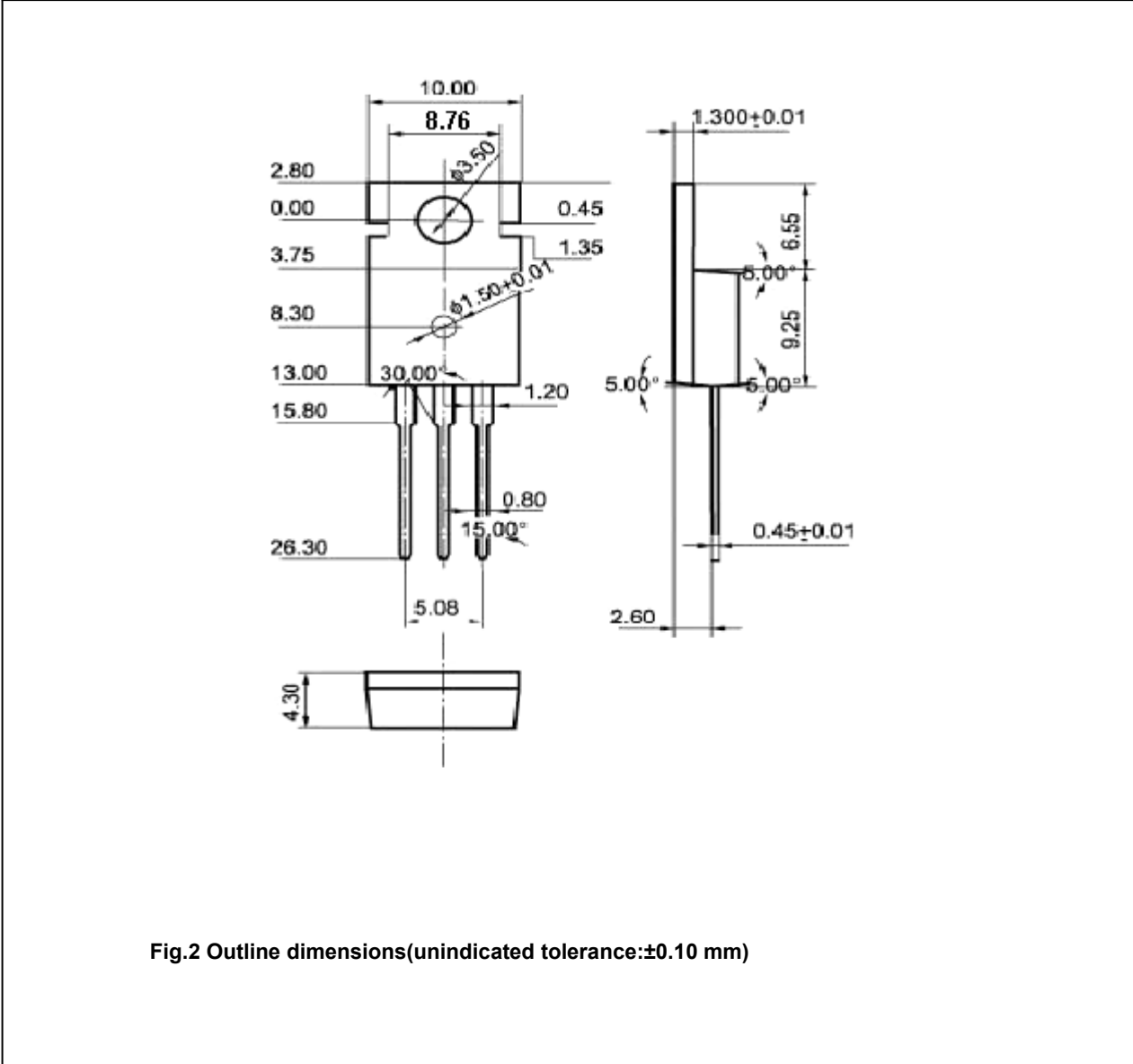


Fig.2 Outline dimensions(unindicated tolerance: ± 0.10 mm)

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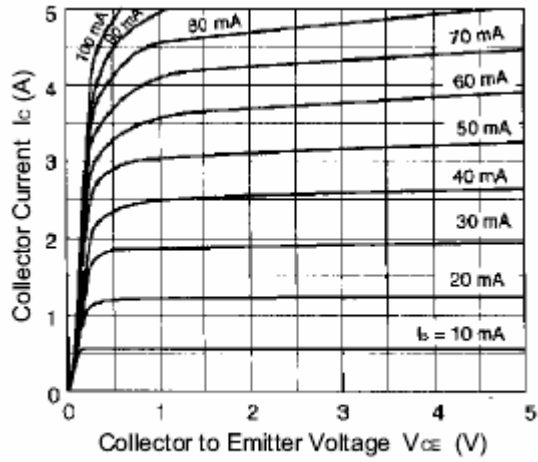


Fig.3 Static Characteristic

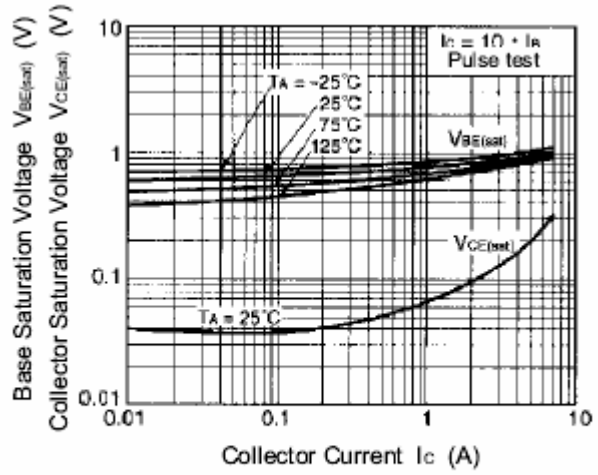


Fig.4 Base-Emitter Saturation Voltage
Collector-Emmitter Saturation Voltage

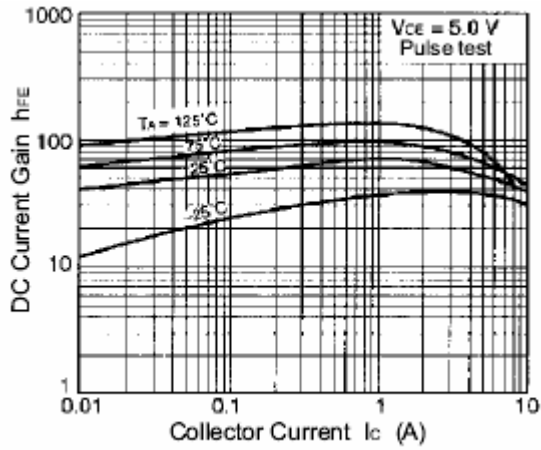


Fig.5 DC current Gain

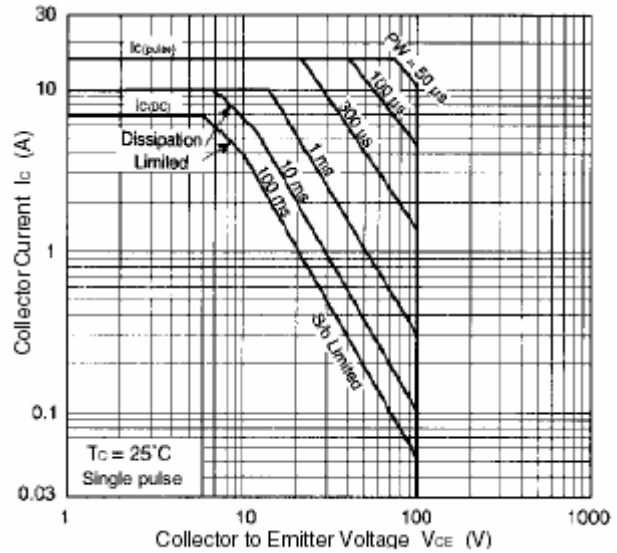


Fig.6 Safe Operating Area