

Silicon NPN Power Transistors

2SC4429

DESCRIPTION

- With TO-3PML package
- High breakdown voltage, high reliability.
- Fast switching speed.
- Wide area of safe operation

APPLICATIONS

- Switching regulator applications

PINNING

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

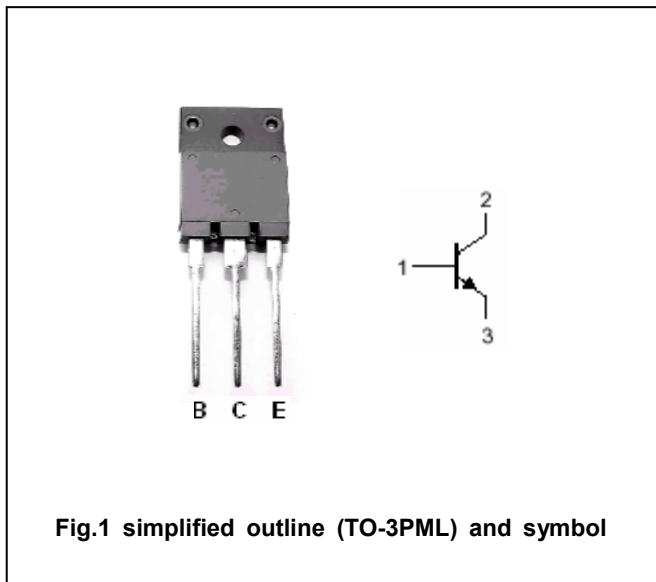


Fig.1 simplified outline (TO-3PML) and symbol

Absolute maximum ratings(Ta=25°C)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|-----------------------------|----------------------|---------|------|
| V _{CBO} | Collector-base voltage | Open emitter | 1100 | V |
| V _{CEO} | Collector-emitter voltage | Open base | 800 | V |
| V _{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I _C | Collector current | | 8 | A |
| I _{CM} | Collector current-peak | | 25 | A |
| I _B | Base current | | 4 | A |
| P _C | Collector power dissipation | T _C =25°C | 60 | W |
| | | | 3 | |
| 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 _{(BR)CBO} | Collector-base breakdown voltage | I _C =1mA; I _E =0 | 1100 | | | V |
| V _{(BR)CEO} | Collector-emitter breakdown voltage | I _C =5mA; R _{BE} =∞ | 800 | | | V |
| V _{(BR)EBO} | Emitter-base breakdown voltage | I _E =1mA; I _C =0 | 7 | | | V |
| V _{CEsat} | Collector-emitter saturation voltage | I _C =4A; I _B =0.8A | | | 2.0 | V |
| V _{BEsat} | Base-emitter saturation voltage | I _C =4A; I _B =0.8A | | | 1.5 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =800V; 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 =0.6A; V _{CE} =5V | 10 | | 40 | |
| h _{FE-2} | DC current gain | I _C =3A; V _{CE} =5V | 8 | | | |
| f _T | Transition frequency | I _C =0.6A; V _{CE} =10V | | 15 | | MHz |
| C _{OB} | Output capacitance | V _{CB} =10V; f=1MHz | | 155 | | pF |

Switching times

| | | | | | | |
|------------------|--------------|---------------------------------------------------------------------------------------------------------------------|--|--|-----|----|
| t _{on} | Turn-on time | I _C =6A; R _L =66.7Ω I _{B1} =1.2A; -I _{B2} =2.4A V _{CC} =400V | | | 0.5 | μs |
| t _{stg} | Storage time | | | | 3.0 | μs |
| t _f | Fall time | | | | 0.3 | μs |

◆ h_{FE-1} classifications

| K | L | M |
|-------|-------|-------|
| 10-20 | 15-30 | 20-40 |

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PACKAGE OUTLINE

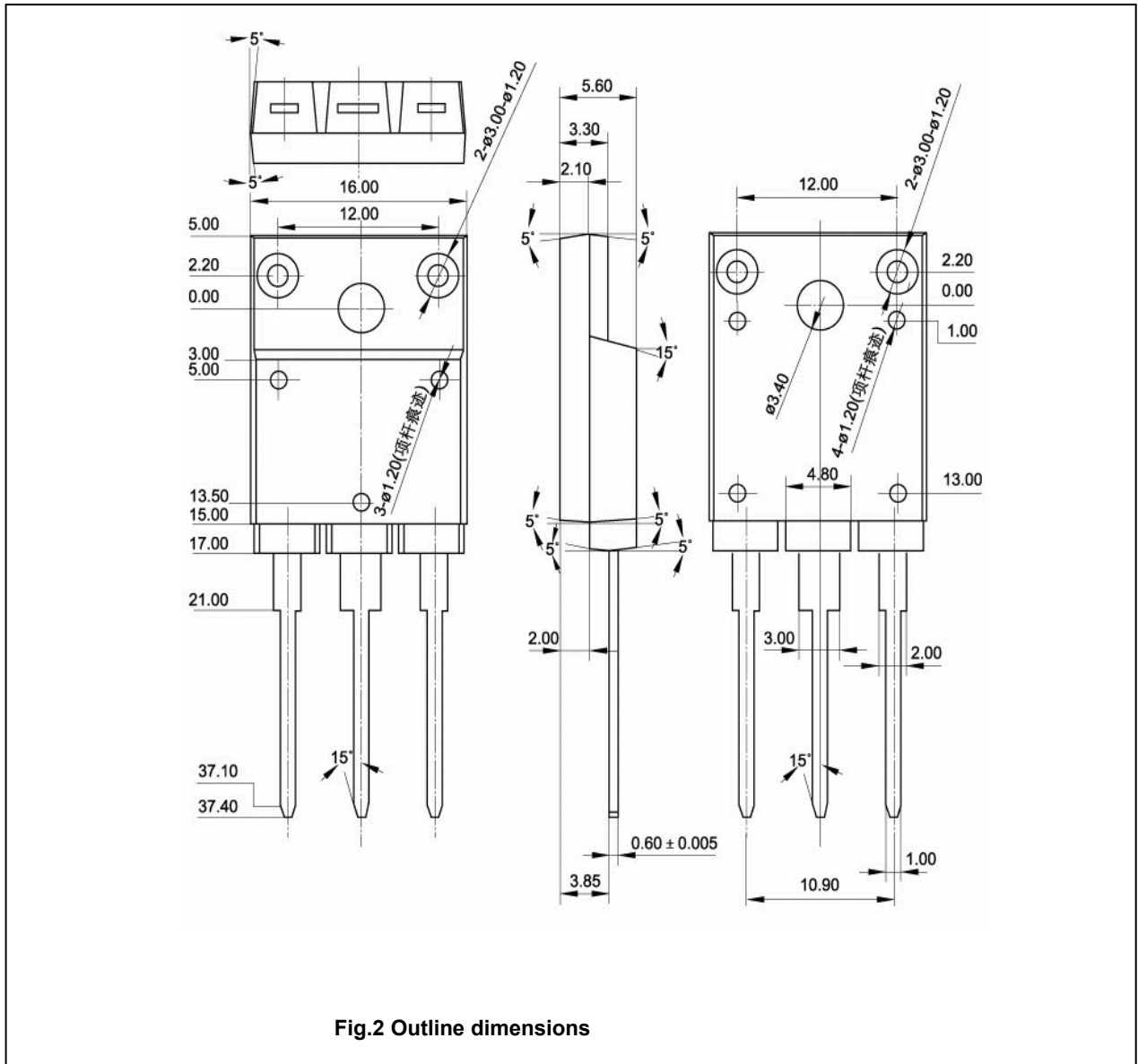


Fig.2 Outline dimensions

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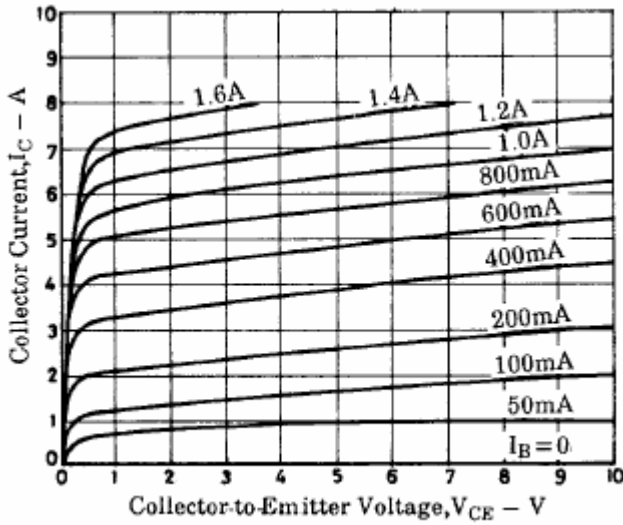


Fig.3 Static Characteristic

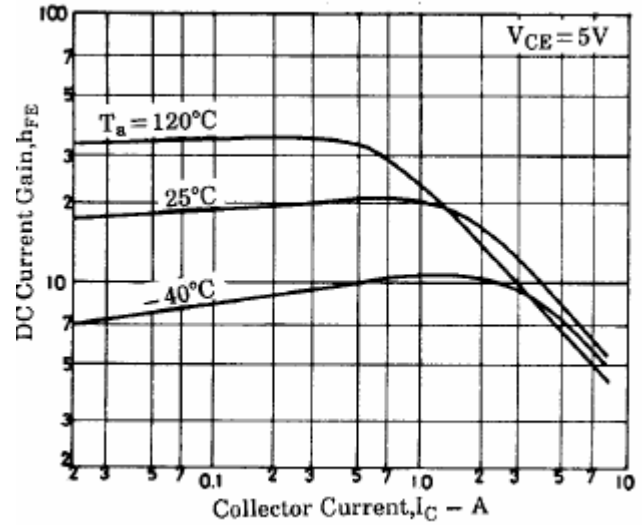


Fig.4 DC current Gain

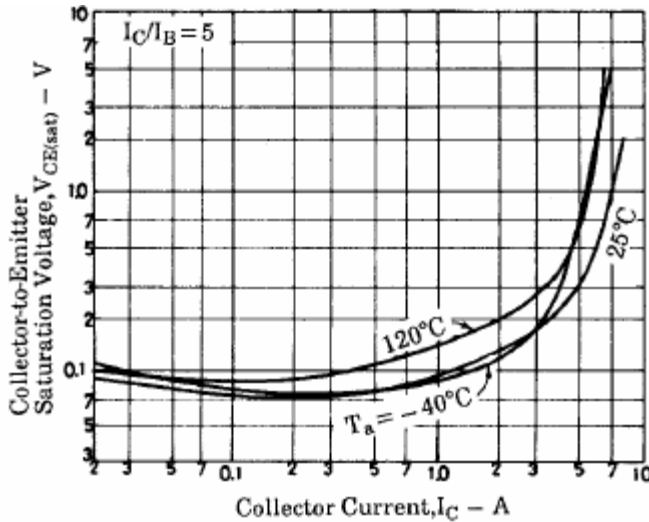


Fig.5 Collector-Emitter Saturation Voltage

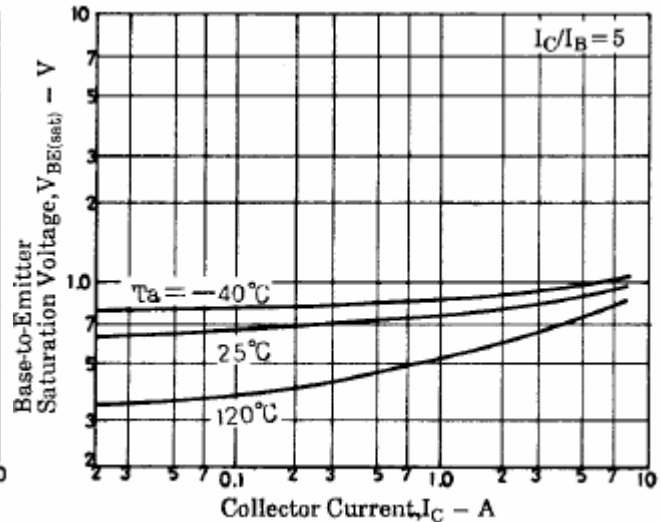


Fig.6 Base-Emitter Saturation Voltage

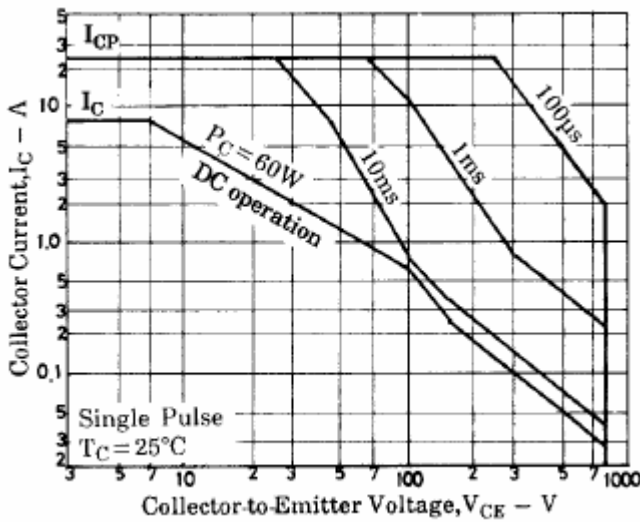


Fig.7 Safe Operating Area