SOLID STATE INC.
46 FARRAND STREET
BLOOMFIELD, NEW JERSEY 07003
www.solidstateinc.com

**Product Specification**

# Silicon PNP Power Transistors — MJ15023 MJ15025

## DESCRIPTION

- With TO-3 package
- Complement to type MJ15022; MJ15024
- Excellent safe operating area
- High DC current gain
  $h_{FE}$ = 15 (Min) @ $I_C$ = 8 Adc

## APPLICATIONS

- Designed for high power audio, disk head positioners and other linear applications

**PINNING(see Fig.2)**

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

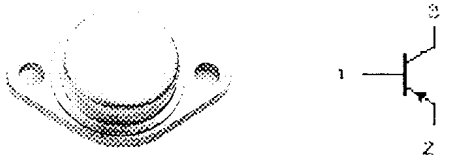


**Fig.1 simplified outline (TO-3) and symbol**

## Absolute maximum ratings(Ta=℃)

| SYMBOL | PARAMETER | | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | MJ15023 | Open emitter | -350 | V |
| | | MJ15025 | | -400 | |
| $V_{CEO}$ | Collector-emitter voltage | MJ15023 | Open base | -200 | V |
| | | MJ15025 | | -250 | |
| $V_{EBO}$ | Emitter-base voltage | | Open collector | --5 | V |
| $I_C$ | Collector current | | | -16 | A |
| $I_{CM}$ | Collector current-peak | | | -30 | A |
| $I_B$ | Base current | | | -5 | A |
| $P_D$ | Total power dissipation | | $T_C$=25℃ | 250 | W |
| $T_j$ | Junction temperature | | | 150 | ℃ |
| $T_{stg}$ | Storage temperature | | | -65~200 | ℃ |

## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $R_{th\ j\text{-}c}$ | Thermal resistance junction to case | 0.70 | ℃/W |

Downloaded from Elcodis.com electronic components distributor

# Silicon PNP Power Transistors MJ15023 MJ15025

## CHARACTERISTICS

**Tj=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $V_{CEO(SUS)}$ | Collector-emitter sustaining voltage | MJ15023 | $I_C$=-0.1A ;$I_B$=0 | -200 | | | V |
| | | MJ15025 | | -250 | | | |
| $V_{CEsat-1}$ | Collector-emitter saturation voltage | | $I_C$=-8A; $I_B$=-0.8A | | | -1.4 | V |
| $V_{CEsat-2}$ | Collector-emitter saturation voltage | | $I_C$=-16A; $I_B$=-3.2A | | | -4.0 | V |
| $V_{BE}$ | Base-emitter on voltage | | $I_C$=-8A ; $V_{CE}$=-4V | | | -2.2 | V |
| $I_{CEO}$ | Collector cut-off current | MJ15023 | $V_{CE}$=-150V; $I_B$=0 | | | -0.5 | mA |
| | | MJ15025 | $V_{CE}$=-200V; $I_B$=0 | | | | |
| $I_{CEX}$ | Collector cut-off current | MJ15023 | $V_{CE}$=-200V; $V_{BE(off)}$=-1.5V | | | -0.25 | mA |
| | | MJ15025 | $V_{CE}$=-250V; $V_{BE(off)}$=-1.5V | | | | |
| $I_{EBO}$ | Emitter cut-off current | | $V_{EB}$=-5V; $I_C$=0 | | | -0.5 | mA |
| $h_{FE-1}$ | DC current gain | | $I_C$=-8A ; $V_{CE}$=-4V | 15 | | 60 | |
| $h_{FE-2}$ | DC current gain | | $I_C$=-16A ; $V_{CE}$=-4V | 5 | | | |
| $I_{s/b}$ | Second breakdown collector current with base forward biased | | $V_{CE}$=-50Vdc,t=0.5 s,<br>$V_{CE}$=-80Vdc,t=0.5 s,Nonrepetitive | -5.0<br>-2.0 | | | A |
| $C_{OB}$ | Output capacitance | | $I_E$=0 ; $V_{CB}$=-10V;f=1.0MHz | | | 600 | pF |
| $f_T$ | Transition frequency | | $I_C$=-1A ; $V_{CE}$=-10V;f=1.0MHz | 4 | | | MHz |

Downloaded from Elcodis.com electronic components distributor

# Silicon PNP Power Transistors MJ15023 MJ15025

PACKAGE OUTLINE

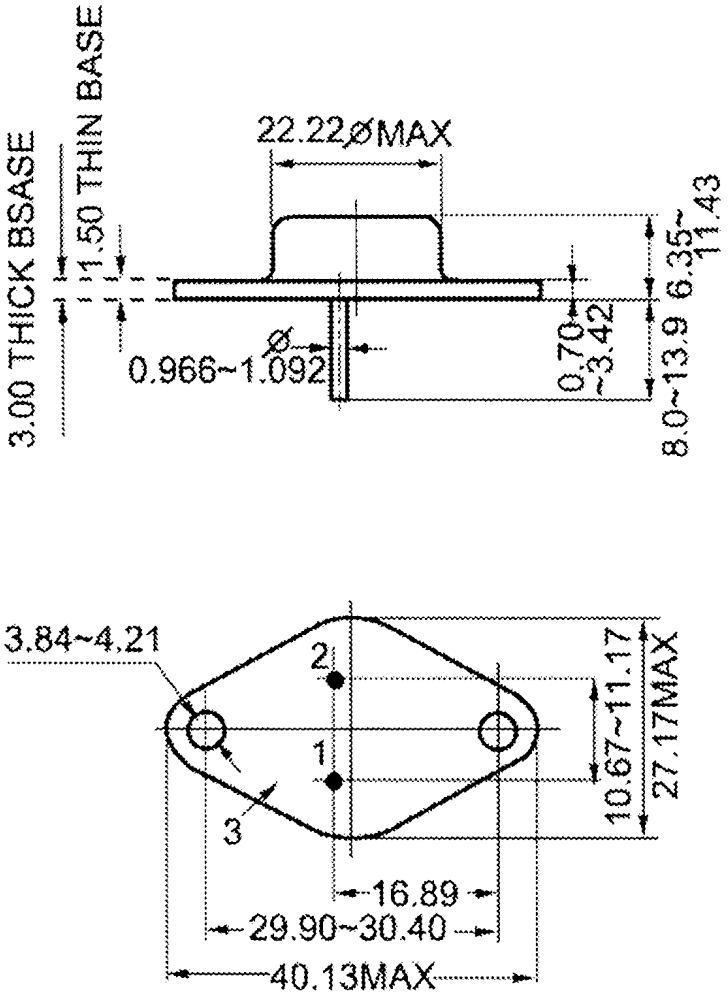


**Fig.2 outline dimensions (unindicated tolerance: ±0.1mm)**

Downloaded from Elcodis.com electronic components distributor