

Silicon NPN Power Transistors

2SC3092

DESCRIPTION

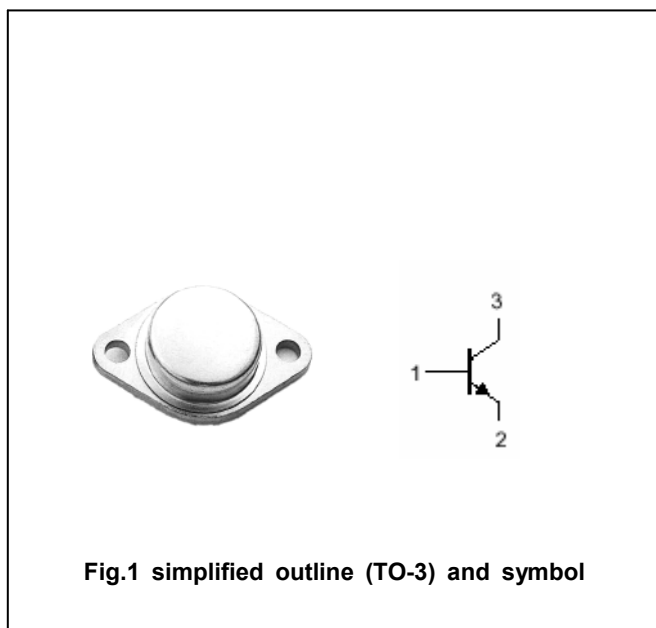
- With TO-3 package
- High breakdown voltage
- Fast switching speed.
- Wide area of safe operation

APPLICATIONS

- 500V/7A switching regulator applications

PINNING(see Fig.2)

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

ABSOLUTE MAXIMUM RATINGS($T_C=25^\circ\text{C}$)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|-----------|-----------------------------|---|---------|------------------|
| V_{CBO} | Collector-base voltage | Open emitter | 800 | V |
| V_{CEO} | Collector-emitter voltage | Open base | 500 | V |
| V_{EBO} | Emitter-base voltage | Open collector | 7 | V |
| I_C | Collector current | | 7 | A |
| I_{CP} | Collector current-peak | $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 10\%$ | 14 | A |
| I_B | Base current | | 3 | A |
| P_C | Collector power dissipation | $T_C=25^\circ\text{C}$ | 90 | W |
| T_j | Junction temperature | | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage temperature | | -55~150 | $^\circ\text{C}$ |

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CHARACTERISTICS

T_j=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|--|-----|------|-----|------|
| V _{(BR)CEO} | Collector-emitter breakdown voltage | I _C =5mA ; R _{BE} =∞ | 500 | | | V |
| V _{(BR)CBO} | Collector-base breakdown voltage | I _C =1mA ; I _E =0 | 800 | | | V |
| V _{(BR)EBO} | Emitter-base breakdown voltage | I _E =1mA ; I _C =0 | 7 | | | V |
| V _{CE(sat)} | Collector-emitter saturation voltage | I _C =3A; I _B =0.6A | | | 1.0 | V |
| V _{BE(sat)} | Base-emitter saturation voltage | I _C =3A; I _B =0.6A | | | 1.5 | V |
| I _{CBO} | Collector cut-off current | V _{CB} =500V; 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 | 15 | | 50 | |
| h _{FE-2} | DC current gain | I _C =3A ; V _{CE} =5V | 8 | | | |
| C _{OB} | Output capacitance | I _E =0 ; V _{CB} =10V, f=1MHz | | 80 | | pF |
| f _T | Transition frequency | I _C =0.6 A ; V _{CE} =10V | | 18 | | MHz |

Switching times

| | | | | | | |
|-----------------|--------------|---|--|--|-----|----|
| t _{on} | Turn-on time | I _C =4A; I _{B1} =0.8A; I _{B2} =-1.6A V _{CC} =200V ,R _L =50Ω | | | 0.5 | μs |
| t _s | Storage time | | | | 3.0 | μs |
| t _f | Fall time | | | | 0.3 | μs |

◆ h_{FE-1} classifications

| L | M | N |
|-------|-------|-------|
| 15-30 | 20-40 | 30-50 |

PACKAGE OUTLINE

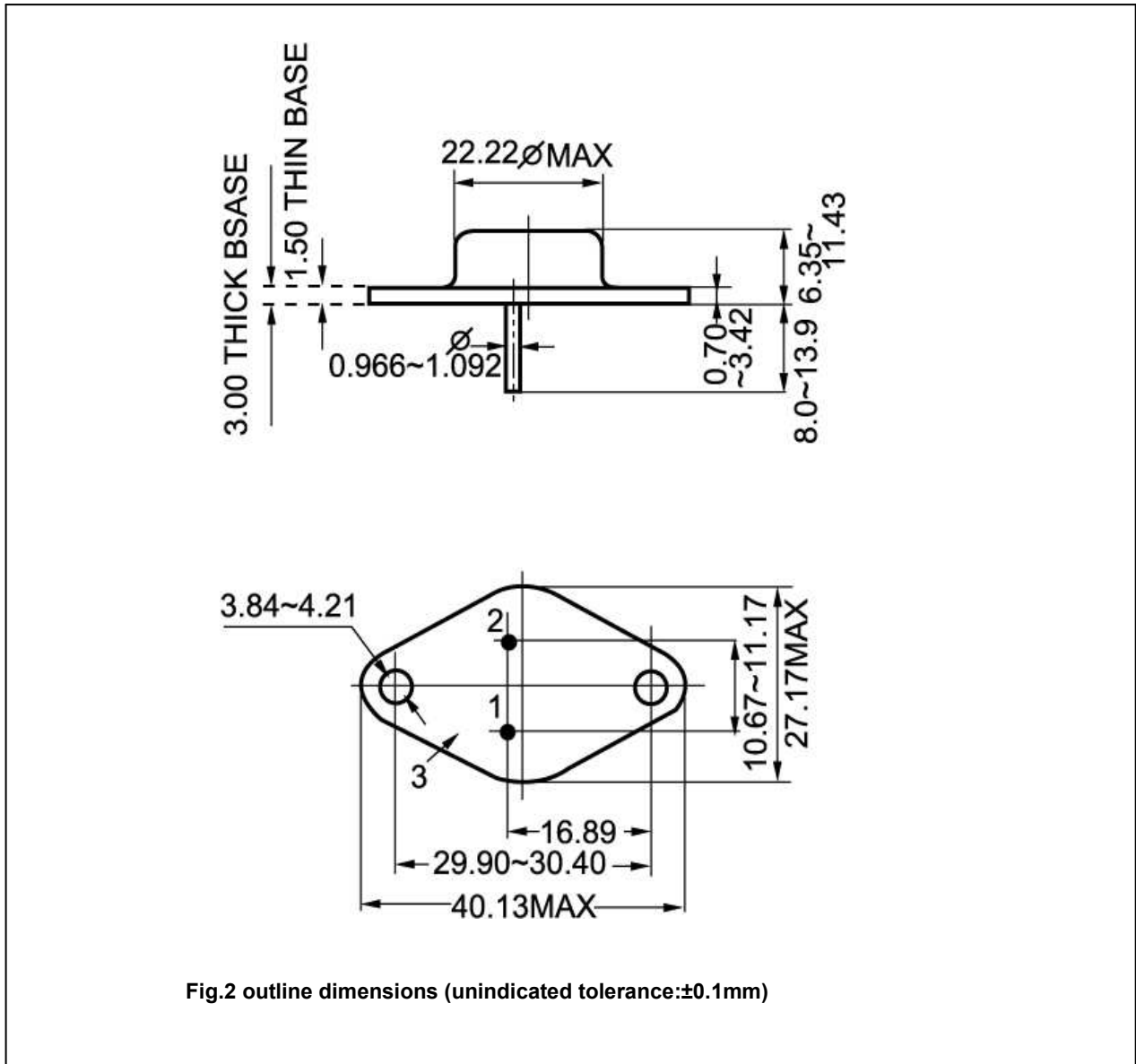


Fig.2 outline dimensions (unindicated tolerance:±0.1mm)

This datasheet has been downloaded from:

www.DatasheetCatalog.com

Datasheets for electronic components.