# Silicon NPN Power Transistors 2SD717

## DESCRIPTION

·With TO-3P(I) package
·Low collector saturation voltage
·High collector power dissipation

## APPLICATIONS

·High power switching applications
·DC-DC converter and DC-AC inverter applications

## PINNING

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

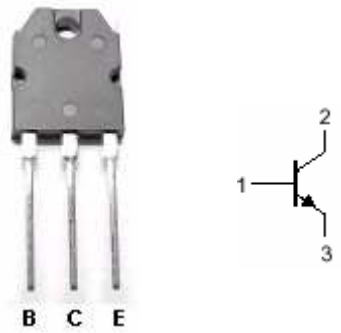


**Fig.1 simplified outline (TO-3P(I)) and symbol**

## Absolute maximum ratings(Ta=25□)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---|---|---|---|---|
| $V_{CBO}$ | Collector-base voltage | Open emitter | 70 | V |
| $V_{CEO}$ | Collector-emitter voltage | Open base | 50 | V |
| $V_{EBO}$ | Emitter-base voltage | Open collector | 5 | V |
| $I_C$ | Collector current | | 10 | A |
| $I_B$ | Base current | | 2 | A |
| $P_T$ | Total power dissipation | $T_C$=25□ | 80 | W |
| $T_j$ | Junction temperature | | 150 | □ |
| $T_{stg}$ | Storage temperature | | -55~150 | □ |

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## CHARACTERISTICS

**Tj=25□ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage | $I_C$=50mA ,$I_B$=0 | 50 | | | V |
| $V_{CEsat}$ | Collector-emitter saturation voltage | $I_C$=6A; $I_B$=0.3A | | | 0.4 | V |
| $V_{BEsat}$ | Base-emitter saturation voltage | $I_C$=6A; $I_B$=0.3A | | | 1.2 | V |
| $I_{CBO}$ | Collector cut-off current | $V_{CB}$=70V; $I_E$=0 | | | 10 | μA |
| $I_{EBO}$ | Emitter cut-off current | $V_{EB}$=5V; $I_C$=0 | | | 10 | μA |
| $h_{FE-1}$ | DC current gain | $I_C$=1A ; $V_{CE}$=1V | 70 | | 240 | |
| $h_{FE-2}$ | DC current gain | $I_C$=6A ; $V_{CE}$=1V | 30 | | | |
| $f_T$ | Transition frequency | $I_C$=1A ; $V_{CE}$=4V | | 10 | | MHz |
| $C_{ob}$ | Output capacitance | $I_E$=0 ; $V_{CB}$=10V ;f=1MHz | | 350 | | pF |
| Switching times | | | | | | |
| $t_{on}$ | Turn-on time | $I_{B1}$=-$I_{B2}$=0.3A;$R_L$=5Ω;$V_{CC}$=30V | | 0.3 | | μs |
| $t_s$ | Storage time | | | 2.5 | | μs |
| $t_f$ | Fall time | | | 0.4 | | μs |

◆ **$h_{FE-1}$ Classifications**

| O | Y |
|---|---|
| 70-140 | 120-240 |

**PACKAGE OUTLINE**

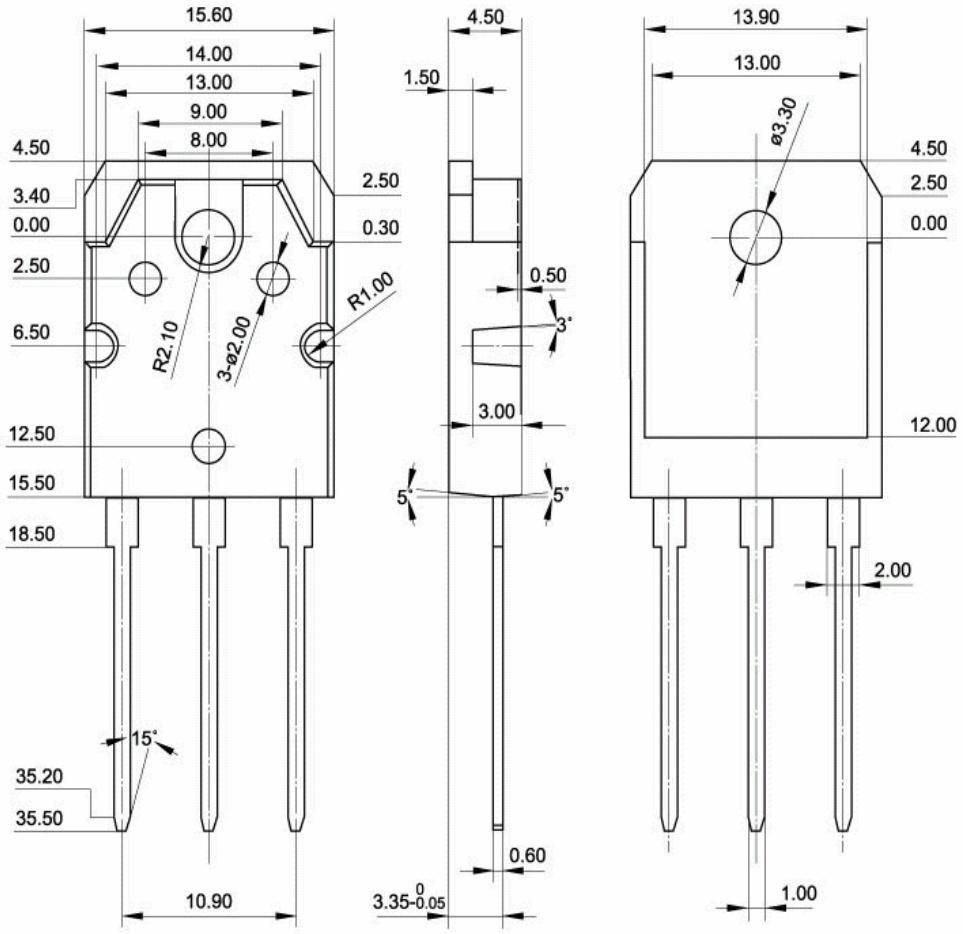


**Fig.2 Outline dimensions(unindicated tolerance:±0.10 mm)**