

Silicon NPN Power Transistors

BU931R BU932R

DESCRIPTION

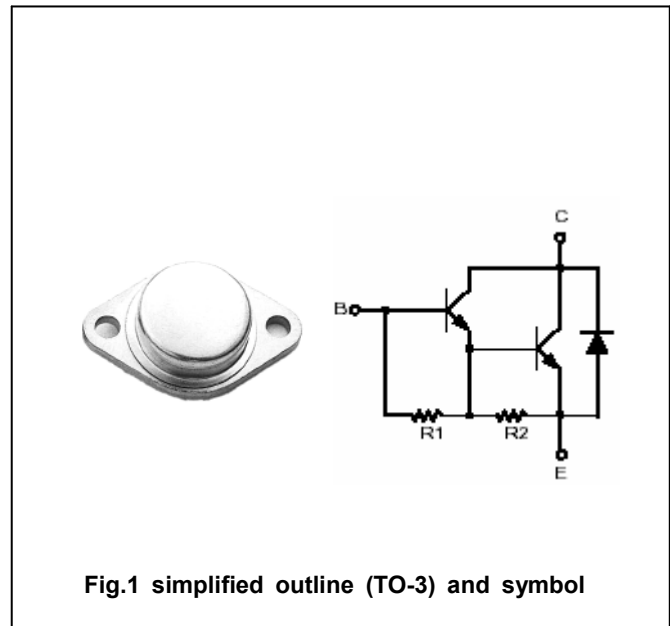
- With TO-3 package
- DARLINGTON

APPLICATIONS

- Automotive ignition applications
- Inverters circuits for motor controls

PINNING (See Fig.2)

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

Absolute maximum ratings($T_a=25^\circ$)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|-----------|---------------------------|---------------------|---------|----------|
| V_{CBO} | Collector-base voltage | BU931R | 400 | V |
| | | BU932R | 450 | |
| V_{CEO} | Collector-emitter voltage | BU931R | 450 | V |
| | | BU932R | 500 | |
| V_{EBO} | Emitter-base voltage | Open collector | 5 | V |
| I_C | Collector current | | 15 | A |
| I_{CM} | Collector current-peak | | 30 | A |
| I_B | Base current | | 1 | A |
| I_{BM} | Base current-peak | | 5 | A |
| P_T | Total power dissipation | $T_c \leq 25^\circ$ | 175 | W |
| T_j | Junction temperature | | 200 | $^\circ$ |
| T_{stg} | Storage temperature | | -40~200 | $^\circ$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | VALUE | UNIT |
|---------------|------------------------------------------|-------|------------|
| $R_{th\ j-c}$ | Thermal resistance from junction to case | 1.0 | $^\circ/W$ |

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CHARACTERISTICS

T_j=25 °C unless otherwise specified

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| SYMBOL | PARAMETER | | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|-------------------------------------------------------------|--------|----------------------------------------------------------------------|-----|------|------------|------|
| V _{CEO} | Collector-emitter sustaining voltage | BU931R | I _C =100mA ; I _B =0 | 400 | | | V |
| | | BU932R | | 450 | | | |
| V _{CEsat-1} | Collector-emitter saturation Voltage Only for BU931R | | I _C =7A; I _B =70mA | | | 1.6 | V |
| V _{CEsat-2} | Collector-emitter saturation voltage | BU931R | I _C =8A; I _B =100mA | | | 1.8 | V |
| | | BU932R | I _C =8A; I _B =150mA | | | | |
| V _{CEsat-3} | Collector-emitter saturation Voltage Only for BU931R | | I _C =10A; I _B =250mA | | | 1.8 | V |
| V _{BEsat-1} | Base-emitter saturation voltage | BU931R | I _C =8A; I _B =100mA | | | 2.2 | V |
| | | BU932R | I _C =8A; I _B =150mA | | | | |
| V _{BEsat-2} | Base-emitter saturation voltage Only for BU931R | | I _C =10A; I _B =250mA | | | 2.5 | V |
| I _{CEO} | Collector cut-off current | BU931R | V _{CE} =400V ; I _B =0 | | | 1.0 | mA |
| | | BU932R | V _{CE} =450V ; I _B =0 | | | | |
| I _{CES} | Collector cut-off current | BU931R | V _{CE} =400V ; V _{BE} =0 T _C =125 °C | | | 1.0 5.0 | mA |
| | | BU932R | V _{CE} =450V ; V _{BE} =0 T _C =125 °C | | | 1.0 5.0 | |
| I _{EBO} | Emitter cut-off current | | V _{EB} =5V; I _C =0 | | | 50 | mA |
| h _{FE} | DC current gain | | I _C =5A ; V _{CE} =10V | 300 | | | |
| V _F | Diode forward voltage | | I _F =10A | | | 2.8 | V |

Switching times

| | | | | | | |
|----------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--|-----|--|----|
| t _s | Storage time | I _C =7A ; I _B =70mA ; V _{BE} =0; R _{BE} =47Ω V _{CC} =12V, V _{clamp} =300V; L=7mH | | 15 | | μs |
| t _f | Fall time | | | 0.5 | | μs |

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PACKAGE OUTLINE

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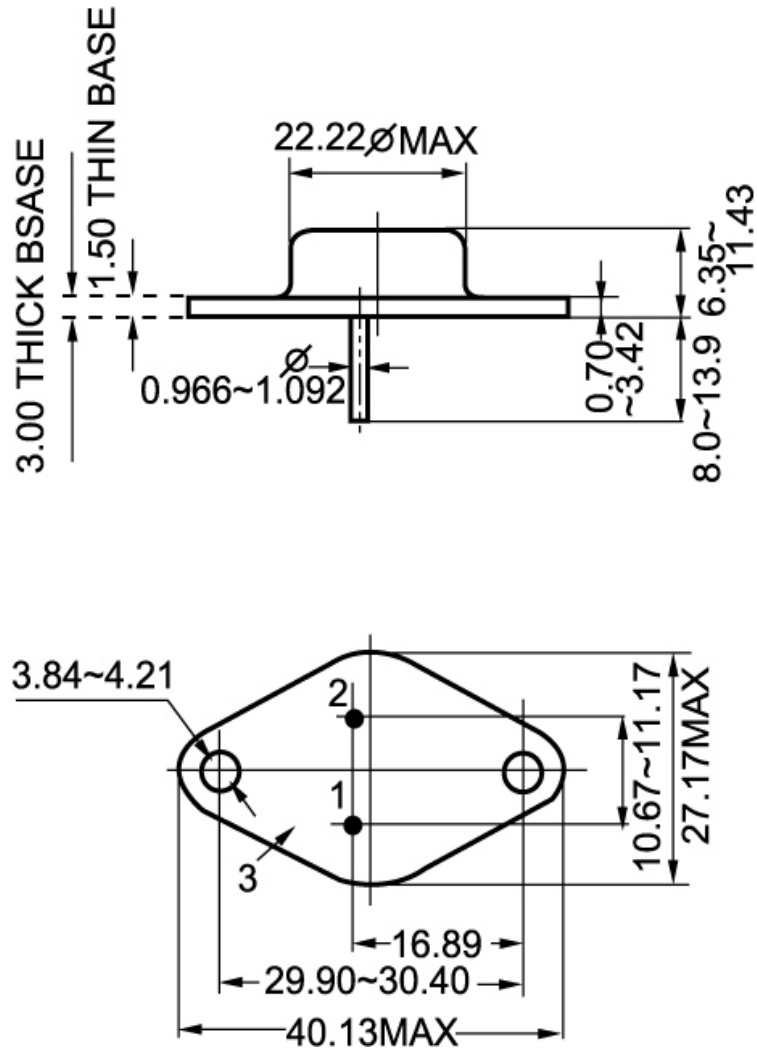


Fig.2 Outline dimensions