

HIGH VOLTAGE NPN SILICON TRANSISTOR

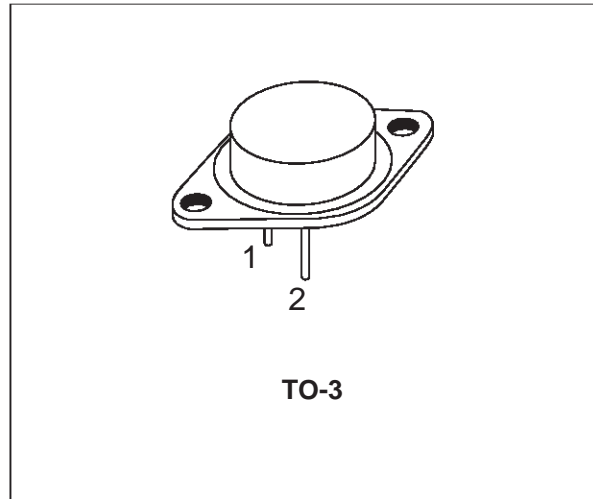
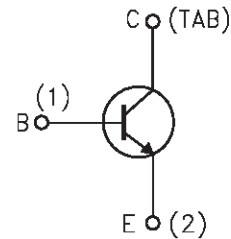
- STM PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED
- HIGH POWER TO-3 PACKAGE

APPLICATIONS:

- HORIZONTAL DEFLECTION FOR COLOUR TV
- SWITCHING REGULATORS

DESCRIPTION

The BUY69A is a silicon multiepitaxial mesa NPN transistor in Jedec TO-3 metal case. It is intended for horizontal deflection output stage of CTV receivers and high voltage, fast switching and industrial applications.


INTERNAL SCHEMATIC DIAGRAM

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|---|------------|------|
| V_{CES} | Collector-Emitter Voltage ($V_{BE} = 0$) | 1000 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | 400 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | 8 | V |
| I_C | Collector Current | 10 | A |
| I_{CM} | Collector Peak Current ($t_p \leq 10$ ms) | 15 | A |
| I_B | Base Current | 3 | A |
| P_{tot} | Total Dissipation at $T_c \leq 25$ °C | 100 | W |
| T_{stg} | Storage Temperature | -65 to 200 | °C |
| T_j | Max. Operating Junction Temperature | 200 | °C |

BUY69A

THERMAL DATA

| | | | | |
|----------------|----------------------------------|-----|------|---------------|
| $R_{thj-case}$ | Thermal Resistance Junction-case | Max | 1.75 | $^{\circ}C/W$ |
|----------------|----------------------------------|-----|------|---------------|

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | | Min. | Typ. | Max. | Unit |
|----------------|--|--|------------------|------|------|------------|--------------------|
| I_{CES} | Collector Cut-off Current ($V_{BE} = 0$) | $V_{CE} = 1000 V$ | | | | 1 | mA |
| I_{EBO} | Emitter Cut-off Current ($I_C = 0$) | $V_{EB} = 8 V$ | | | | 1 | mA |
| $V_{CEO(sus)}$ | Collector-Emitter Sustaining Voltage | $I_C = 100 mA$ | | 1000 | | | V |
| $V_{CE(sat)*}$ | Collector-Emitter Saturation Voltage | $I_C = 8 A$ | $I_B = 2.5 A$ | | | 3.3 | V |
| $V_{BE(sat)*}$ | Base-Emitter Saturation Voltage | $I_C = 8 A$ | $I_B = 2.5 A$ | | | 2.2 | V |
| h_{FE*} | DC Current Gain | $I_C = 2.5 A$ | $V_{CE} = 10 V$ | 15 | | | |
| f_T | Transition Frequency | $I_C = 0.5 A$ | $V_{CE} = 10 V$ | | 10 | | MHz |
| $I_{s/b}^{**}$ | Second Breakdown Collector Current | $V_{CE} = 25 V$ | | 4 | | | A |
| t_{on} | Turn on Time | $I_C = 5 A$ $I_{B1} = 1 A$ | $V_{CE} = 250 V$ | | 0.2 | | μs |
| t_s t_s | Storage Time Fall Time | $I_C = 5 A$ $I_{B1} = - I_{B2} = 1 A$ | $V_{CE} = 250 V$ | | | 1.7 0.3 | μs μs |
| t_f | Fall Time | $I_C = 8 A$ $I_{B1} = - I_{B2} = 2.5 A$ | $V_{CE} = 40 V$ | | | 1 | μs |

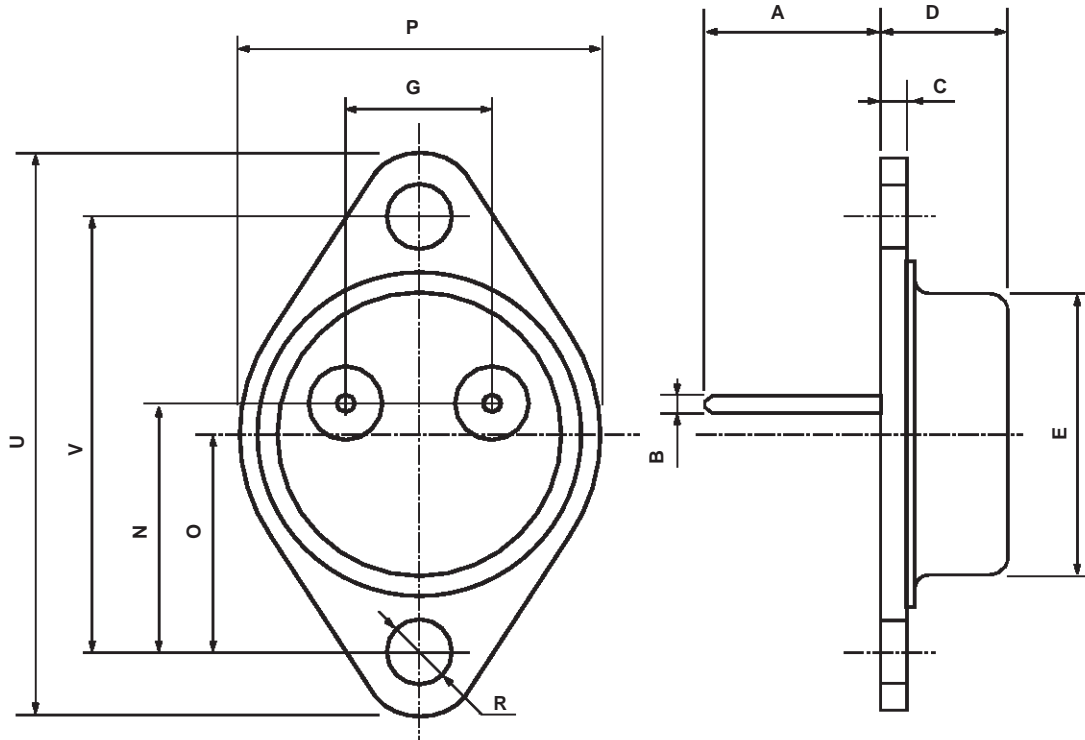
* Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %

** Pulsed: 1s, non repetitive pulse.

For characteristics curves see the BUW34/5/6 series.

TO-3 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|-------|------|-------|-------|------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 11.00 | | 13.10 | 0.433 | | 0.516 |
| B | 0.97 | | 1.15 | 0.038 | | 0.045 |
| C | 1.50 | | 1.65 | 0.059 | | 0.065 |
| D | 8.32 | | 8.92 | 0.327 | | 0.351 |
| E | 19.00 | | 20.00 | 0.748 | | 0.787 |
| G | 10.70 | | 11.10 | 0.421 | | 0.437 |
| N | 16.50 | | 17.20 | 0.649 | | 0.677 |
| P | 25.00 | | 26.00 | 0.984 | | 1.023 |
| R | 4.00 | | 4.09 | 0.157 | | 0.161 |
| U | 38.50 | | 39.30 | 1.515 | | 1.547 |
| V | 30.00 | | 30.30 | 1.187 | | 1.193 |



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