



## NPN BUY69A

### MULTIEPITAXIAL MESA NPN

The BUY69A is silicon multiepitaxial mesa NPN transistor in Jedec TO-3. They are intended for horizontal deflection output stage of CTV receivers and high voltage, fast switching and industrial applications. Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Ratings                   |                            | Value       | Unit             |
|-----------|---------------------------|----------------------------|-------------|------------------|
| $V_{CEO}$ | Collector-Emitter Voltage | $I_B = 0$                  | 400         | V                |
| $V_{EBO}$ | Emitter-Base Voltage      | $I_C = 0$                  | 8           | V                |
| $V_{CES}$ | Collector-Emitter Voltage | $I_C = 0$                  | 1000        | V                |
| $I_C$     | Collector Current         |                            | 10          | A                |
| $I_{CM}$  | Collector Peak Current    | $t_p = 10\text{ms}$        | 15          | A                |
| $I_B$     | Base Current              |                            | 3           | A                |
| $P_t$     | Total Power Dissipation   | @ $T_C = 25^\circ\text{C}$ | 100         | W                |
| $T_J$     | Junction Temperature      |                            | 200         | $^\circ\text{C}$ |
| $T_{Stg}$ | Storage Temperature       |                            | -65 to +200 | $^\circ\text{C}$ |

#### THERMAL CHARACTERISTICS

| Symbol     | Ratings                              | Value | Unit               |
|------------|--------------------------------------|-------|--------------------|
| $R_{thJC}$ | Thermal Resistance, Junction to Case | 1.75  | $^\circ\text{C/W}$ |



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### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

| Symbol         | Ratings                                  | Test Condition(s)  | Min  | Typ | Max | Unit          |
|----------------|--|--|------|-----|-----|---------------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage (*) | $I_C=100\text{ mA}$  | 400  | -   | -   | V             |
| $V_{CBO}$      | Collector-Emitter                        | $I_C=1\text{ mA}$<br>$I_E=0$   | 1000 | -   | -   | V             |
| $I_{EBO}$      | Emitter Cutoff Current                   | $V_{CE}=8\text{ V}$<br>$I_C=0$   | -    | -   | 1   | mA            |
| $I_{CES}$      | Collector Cutoff Current                 | $V_{CE}=V_{CES}$<br>$V_{BE}=0$   | -    | -   | 1   | mA            |
| $h_{FE}$       | DC Current Gain (*)                      | $I_C=2.5\text{ A}$<br>$V_{CE}=10\text{ V}$   | 15   | -   | -   | -             |
| $V_{CE(SAT)}$  | Collector-Emitter saturation Voltage (*) | $I_C=8\text{ A}$<br>$I_B=2.5\text{ A}$   | -    | -   | 3.3 | V             |
| $V_{BE(SAT)}$  | Base-Emitter saturation Voltage (*)      | $I_C=8\text{ A}$<br>$I_B=2.5\text{ A}$   | -    | -   | 2.2 |               |
| $f_T$          | Transition Frequency                     | $I_C=0.5\text{ A}$<br>$V_{CE}=10\text{ V}$   | -    | 10  | -   | MHz           |
| $I_{s/b}$      | Second Breakdown Collector Current (**)  | $V_{CE}=25\text{ V}$   | 4    | -   | -   | A             |
| $t_{on}$       | Turn-on time                             | $I_C=5\text{ A}$ , $I_B=1\text{ A}$<br>$V_{CC}=250\text{ V}$                               | -    | 0.2 | -   | $\mu\text{s}$ |
| $t_s$          | Storage time                             | $I_C=5\text{ A}$ , $V_{CC}=250\text{ V}$<br>$I_{B1}=1\text{ A}$ , $-I_{B2}=1\text{ A}$     | -    | 1.7 | -   |               |
| $t_f$          | File time                                | $I_C=5\text{ A}$ , $V_{CC}=-250\text{ V}$<br>$I_{B1}=1\text{ A}$ , $-I_{B2}=1\text{ A}$    | -    | 0.3 | -   |               |
| $t_f$          | File time                                | $I_C=8\text{ A}$ , $V_{CC}=-40\text{ V}$<br>$I_{B1}=2.5\text{ A}$ , $-I_{B2}=2.5\text{ A}$ |      |     | 1   |               |

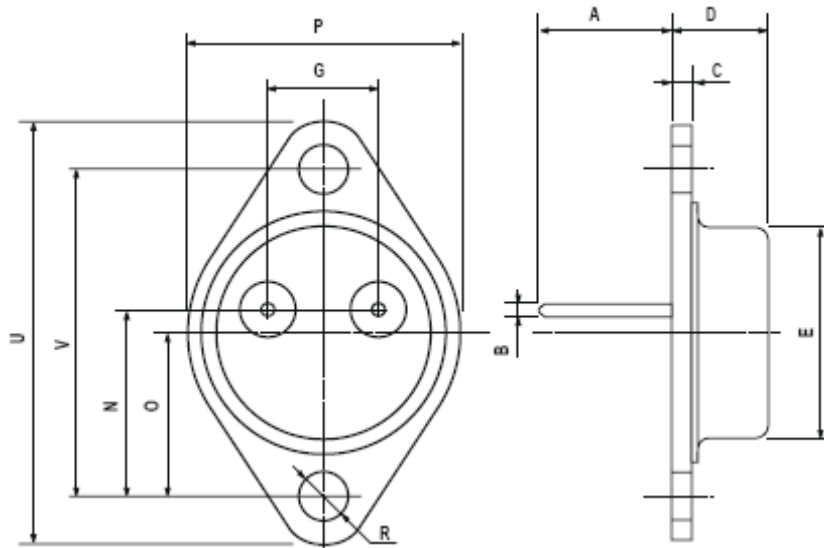
(\*) Pulse Duration = 300  $\mu\text{s}$ , Duty Cycle  $\leq$  1.5%

(\*\*) Pulsed :1s, non repetitive pulse

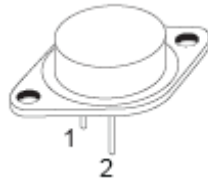
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### MECHANICAL DATA CASE TO-3

| DIMENSIONS (mm) |       |       |
|-----------------|-------|-------|
|                 | min   | max   |
| A               | 11    | 13.10 |
| B               | 0.97  | 1.15  |
| C               | 1.5   | 1.65  |
| D               | 8.32  | 8.92  |
| F               | 19    | 20    |
| G               | 10.70 | 11.1  |
| N               | 16.50 | 17.20 |
| P               | 25    | 26    |
| R               | 4     | 4.09  |
| U               | 38.50 | 39.30 |
| V               | 30    | 30.30 |



|         |           |
|---------|-----------|
| Pin 1 : | Base      |
| Pin 2 : | Emitter   |
| Case :  | Collector |



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