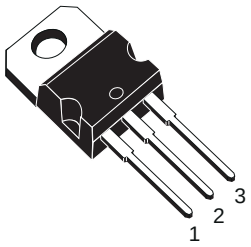
# BUV26

## MEDIUM POWER NPN SILICON TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- FAST SWITCHING SPEED
- LOW COLLECTOR EMITTER SATURATION

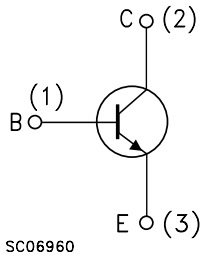
**APPLICATIONS**
- SWITCHING REGULATORS
- MOTOR CONTROL

**DESCRIPTION**
The BUV26 is a Multiepitaxial Planar NPN Transistor in TO-220 package. It is intended for use in high frequency and efficency converters, switching regulators and motor control.




**TO-220**

**INTERNAL SCHEMATIC DIAGRAM**




**ABSOLUTE MAXIMUM RATINGS**

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector-base Voltage ($I_E$ = 0) | 180 | V |
| $V_{CEO}$ | Collector-Emitter Voltage ($I_B$ = 0) | 90 | V |
| $V_{EBO}$ | Emitter-Base Voltage ($I_C$ = 0) | 7 | V |
| $I_C$ | Emitter Current | 14 | A |
| $I_{CM}$ | Collector Peak Current ($t_p$ <10ms) | 25 | A |
| $I_B$ | Base Current | 4 | A |
| $I_{BM}$ | Base Peak Current ($t_p$ <10ms) | 6 | A |
| $P_{tot}$ | Total Dissipation at $T_c$ < 25 $^oC$ | 85 | W |
| $P_{tot}$ | Total Dissipation at $T_c$ < 60 $^oC$ | 65 | W |
| $T_{stg}$ | Storage Temperature | -65 to +175 | $^oC$ |
| $T_j$ | Max. Operating Junction Temperature | 175 | $^oC$ |

## THERMAL DATA

| | | | | |
|---|---|---|---|---|
| $R_{thj\text{-}case}$ | Thermal Resistance Junction-case | Max | 1.76 | $^oC/W$ |

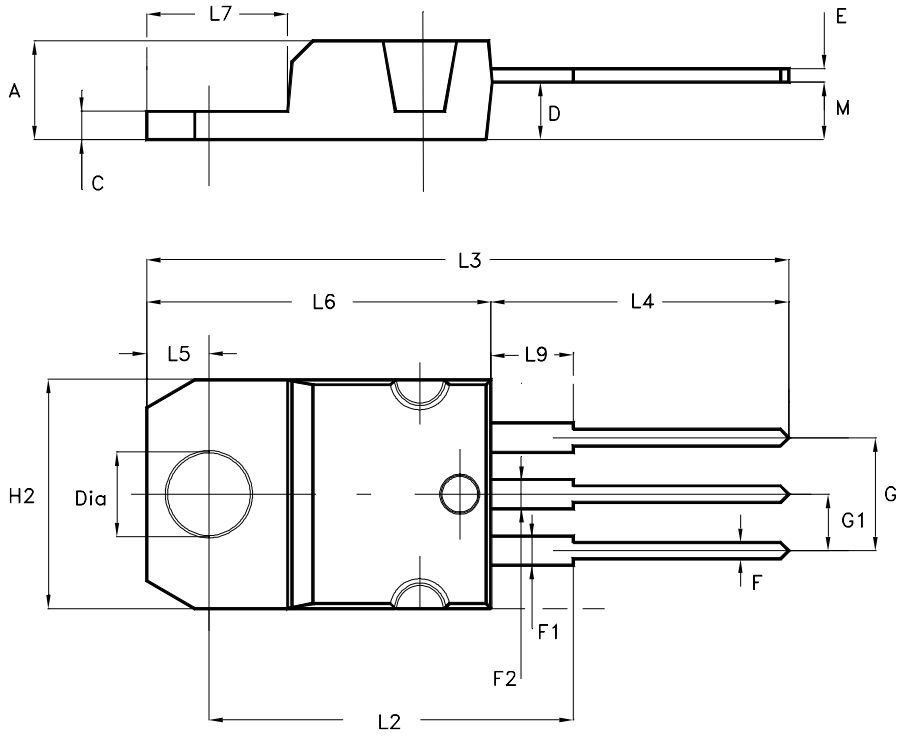
## ELECTRICAL CHARACTERISTICS ($T_{case}$ = 25 $^oC$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $I_{CER}$ | Collector Cut-off Current ($R_{BE}$ = 50Ω) | $V_{CE}$ = 180V $T_c$ = 125$^oC$ | | | 3 | mA |
| $I_{CEX}$ | Collector Cut-off Current ($V_{BE}$ = -1.5V) | $V_{CE}$ = 180V $T_c$ = 125$^oC$ | | | 1 | mA |
| $I_{EBO}$ | Emitter Cut-off Current ($I_C$ = 0) | $V_{EB}$ = 5 V | | | 1 | mA |
| $V_{CEO(sus)}$* | Collector-Emitter Sustaining Voltage ($I_B$ = 0) | $I_C$ = 0.2 A L = 25mH | 90 | | | V |
| $V_{EBO}$ | Emitter-Base Voltage ($I_C$ = 0) | $I_E$ = 50mA | 7 | | 30 | V |
| $V_{CE(sat)}$* | Collector-Emitter Saturation Voltage | $I_C$ = 6A $I_B$ = 0.6A<br>$I_C$ = 12A $I_B$ = 1.2A | | | 0.6<br>1.5 | V<br>V |
| $V_{BE(sat)}$* | Base-Emitter Saturation Voltage | $I_C$ =12A $I_B$ = 1.2A | | | 2 | V |
| | RESISTIVE LOAD | | | | | |
| $t_{on}$ | Turn-on Time | $V_{CC}$ = 50V $I_C$ =12A | | 0.4 | 0.6 | ms |
| $t_s$ | Storage Time | $V_{BE}$ = - 6V $I_{B1}$ = 1.2A | | 0.45 | 1 | µs |
| $t_f$ | Fall Time | $R_{BB}$ = 2.5Ω | | 0.12 | 0.25 | µs |
| | INDUCTIVE LOAD | | | | | |
| $t_s$ | Storage time | $V_{CC}$ = 50V $I_C$ = 12A | | 0.5 | | µs |
| $t_f$ | Fall Time | $V_{BE}$ = - 5V $I_{B1}$ = 1.2A<br>$L_B$ = - 0.5µH | | 0.04 | | µs |
| $t_s$ | Storage Time | $V_{CC}$ = 50V $I_C$ = 12 A | | | 2 | µs |
| $t_f$ | Fall Time | $V_{BE}$ = - 5V $I_{B1}$ = 1.2A<br>$L_B$ = - 0.5µH $T_c$ = 125$^oC$ | | | 0.15 | µs |

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

## TO-220 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|---|---|---|---|---|---|---|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 4.40 | | 4.60 | 0.173 | | 0.181 |
| C | 1.23 | | 1.32 | 0.048 | | 0.052 |
| D | 2.40 | | 2.72 | 0.094 | | 0.107 |
| E | 0.49 | | 0.70 | 0.019 | | 0.027 |
| F | 0.61 | | 0.88 | 0.024 | | 0.034 |
| F1 | 1.14 | | 1.70 | 0.044 | | 0.067 |
| F2 | 1.14 | | 1.70 | 0.044 | | 0.067 |
| G | 4.95 | | 5.15 | 0.194 | | 0.202 |
| G1 | 2.40 | | 2.70 | 0.094 | | 0.106 |
| H2 | 10.00 | | 10.40 | 0.394 | | 0.409 |
| L2 | | 16.40 | | | 0.645 | |
| L4 | 13.00 | | 14.00 | 0.511 | | 0.551 |
| L5 | 2.65 | | 2.95 | 0.104 | | 0.116 |
| L6 | 15.25 | | 15.75 | 0.600 | | 0.620 |
| L7 | 6.20 | | 6.60 | 0.244 | | 0.260 |
| L9 | 3.50 | | 3.93 | 0.137 | | 0.154 |
| M | | 2.60 | | | 0.102 | |
| DIA. | 3.75 | | 3.85 | 0.147 | | 0.151 |

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