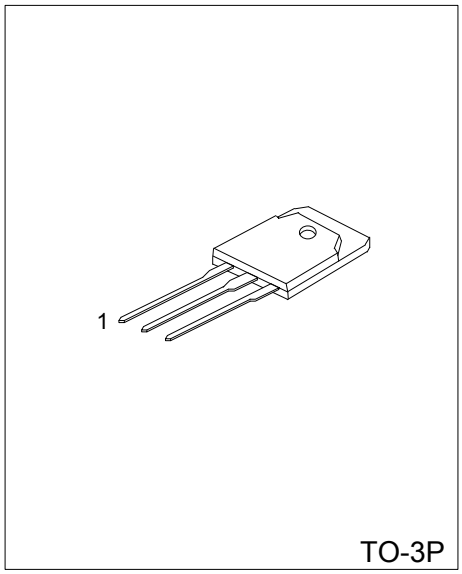
# BU931Z

***NPN SILICON TRANSISTOR***

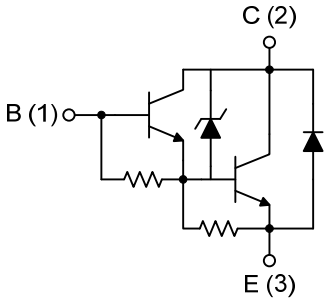
## NPN POWER DARLINGTON




### ■ FEATURES

* High Operating Junction Temperature
* High Voltage Ignition Coil Driver
* Very Rugged Bipolar Technology

### ■ INTERNAL SCHEMATIC DIAGRAM




### ■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|---|---|---|---|---|---|---|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| BU931ZL-T3P-T | BU931ZG-T3P-T | TO-3P | B | C | E | Tube |

BU931ZL-T3P-T

(1)Packing Type
(2)Package Type
(3)Lead Plating

(1) T: Tube
(2) T3P: TO-3P
(3) G: Halogen Free, L: Lead Free

## ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---|---|---|---|
| Collector-Emitter Voltage | $BV_{CEO}$ | 500 | V |
| Emitter-Base Voltage | $BV_{EBO}$ | 5 | V |
| Collector Current (DC) | $I_C$ | 10 | A |
| Collector Peak Current | $I_{CM}$ | 15 | A |
| Base Current | $I_B$ | 1 | A |
| Base Peak Current | $I_{BM}$ | 5 | A |
| Total Dissipation ($T_C$= 25 °C) | $P_D$ | 125 | W |
| Junction Temperature | $T_J$ | +175 | °C |
| Storage Temperature | $T_{STG}$ | -65 ~ +175 | °C |

## ■ ELECTRICAL CHARACTERISTICS

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector Cut-off Current | $I_{CEO}$ | $V_{CE}$ = 500 V | | | 100 | μA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{EB}$ = 5 V | | | 20 | mA |
| | $V_{CL}$ | $I_C$ = 100mA | 400 | | | V |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)1}$ | $I_C$ = 7 A, $I_B$ = 70 mA | | | 1.6 | V |
| | $V_{CE(SAT)2}$ | $I_C$ = 8 A, $I_B$ = 100 mA | | | 1.8 | V |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)1}$ | $I_C$ = 7 A, $I_B$ = 70 mA | | | 2.2 | V |
| | $V_{BE(SAT)2}$ | $I_C$ = 8 A, $I_B$ = 100 mA | | | 2.4 | V |
| DC Current Gain | $h_{FE}$ | $V_{CE}$ = 10 V, $I_C$ = 5 A | 300 | | | |
| Diode Forward Voltage | $V_F$ | $I_F$ = 8 A | | | 2.5 | V |
| Inductive Load Storage Time / Fall Time | $t_S$ | $V_{CC}$ = 12 V, $V_{clamp}$ = 300 V<br>L = 7 mH | | 15 | | μs |
| | $t_F$ | $I_C$ = 7 A, $I_B$ = 70 mA<br>$V_{BE}$ = 0, $R_{BE}$ = 47Ω | | 0.5 | | μs |