

**Silicon NPN Power Transistor**

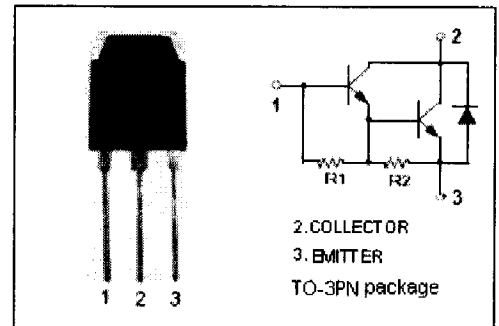
**BU931P**

**DESCRIPTION**

- High Voltage
- DARLINGTON

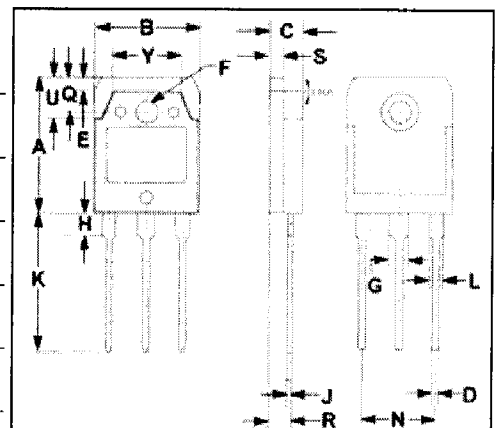
**APPLICATIONS**

- High ruggedness electronic ignitions
- High voltage ignition coil driver



**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	500	V
V <sub>CEO</sub>	Collector-Emitter Voltage	400	V
V <sub>EB0</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current	15	A
I <sub>CM</sub>	Collector Current-peak	30	A
I <sub>B</sub>	Base Current	1	A
I <sub>BM</sub>	Base Current-peak	5	A
P <sub>C</sub>	Collector Power Dissipation @T <sub>c</sub> =25°C	135	W
T <sub>j</sub>	Junction Temperature	175	°C
T <sub>stg</sub>	Storage Temperature Range	-65~175	°C



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.10
H	3.20	3.40
J	0.595	0.605
K	20.50	20.70
L	1.90	2.10
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.005
U	5.90	6.10
Y	9.90	10.10

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	1.1	°C/W



**Quality Semi-Conductors**

## ELECTRICAL CHARACTERISTICS

$T_c=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 0.1\text{A}; I_B = 0; L = 10\text{mH}$	400			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = 7\text{A}; I_B = 70\text{mA}$			1.6	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = 8\text{A}; I_B = 100\text{mA}$			1.8	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{A}; I_B = 250\text{mA}$			1.8	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C = 7\text{A}; I_B = 70\text{mA}$			2.2	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C = 8\text{A}; I_B = 100\text{mA}$			2.4	V
$V_{BE(sat)-3}$	Base-Emitter Saturation Voltage	$I_C = 10\text{A}; I_B = 250\text{mA}$			2.5	V
$I_{CES}$	Collector Cutoff Current	$V_{CE} = 500\text{V}; V_{BE} = 0$ $V_{CE} = 500\text{V}; V_{BE} = 0; T_j = 125^{\circ}\text{C}$			0.1 0.5	mA
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = 450\text{V}; I_B = 0$ $V_{CE} = 450\text{V}; I_B = 0; T_j = 125^{\circ}\text{C}$			0.1 0.5	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 5\text{V}; I_C = 0$			20	mA
$h_{FE}$	DC Current Gain	$I_C = 5\text{A}; V_{CE} = 10\text{V}$	300			
$V_{ECF}$	C-E Diode Forward Voltage	$I_F = 10\text{A}$			2.5	V