

isc Silicon NPN Power Transistor

BU931

DESCRIPTION

- High Voltage
- DARLINGTON

APPLICATIONS

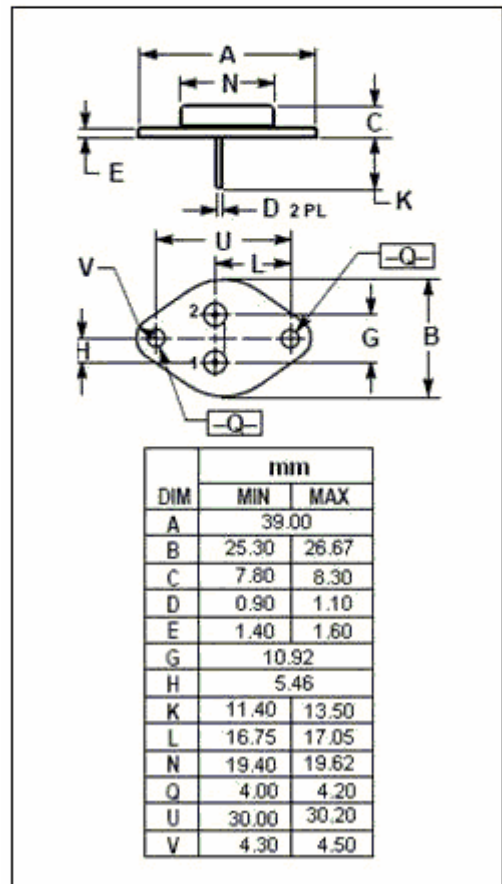
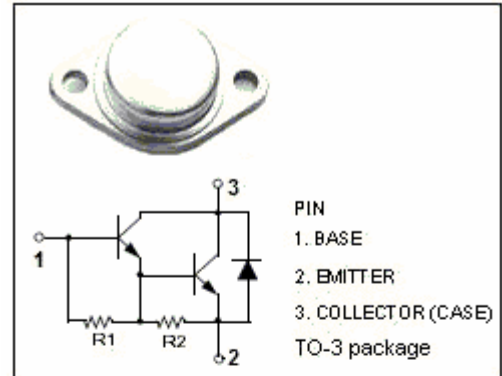
- High ruggedness electronic ignitions
- High voltage ignition coil driver

ABSOLUTE MAXIMUM RATINGS (Ta=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>EBO</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	175	W
T <sub>J</sub>	Junction Temperature	200	°C
T <sub>stg</sub>	Storage Temperature Range	-65~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	1.0	°C/W



## isc Silicon NPN Power Transistor

BU931

## ELECTRICAL CHARACTERISTICS

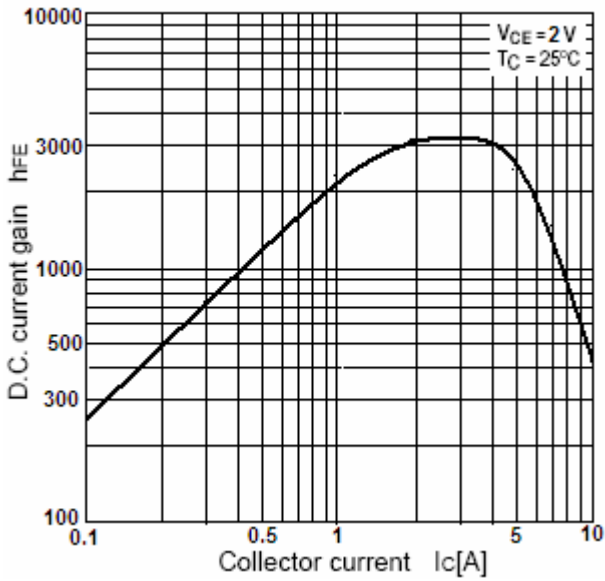
 $T_C=25^{\circ}\text{C}$  unless otherwise specified

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

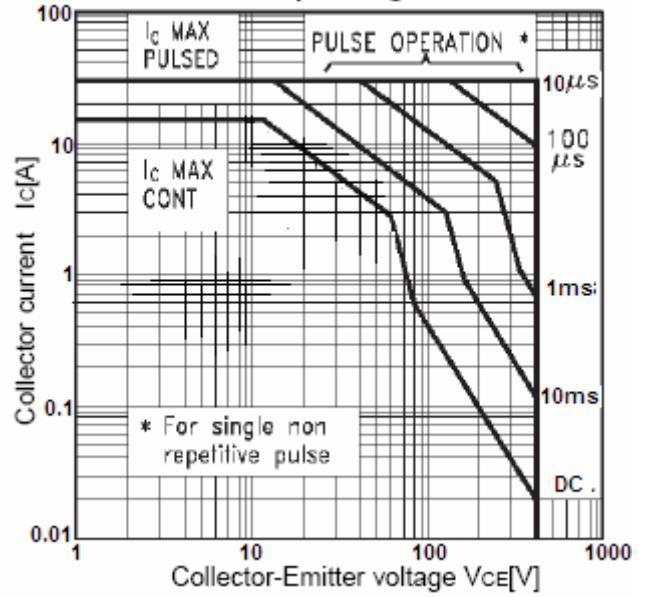
isc Silicon NPN Power Transistor

BU931

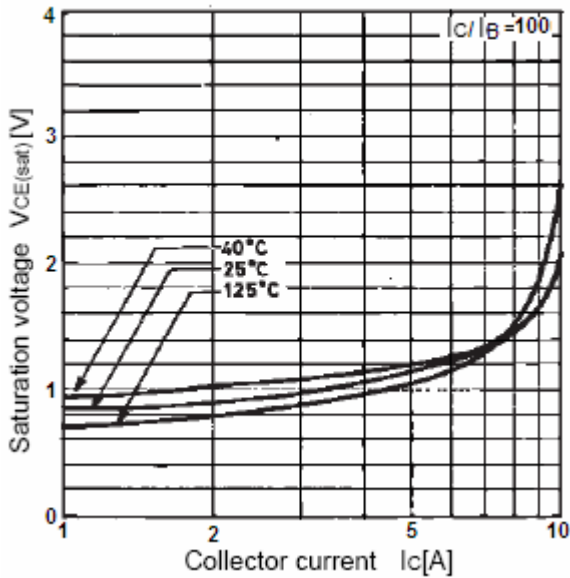
**$h_{FE}$ - $I_C$  Characteristics**



**Safe Operating Area**



**$V_{CE(sat)}$ - $I_C$  Characteristics**



**$V_{BE(sat)}$ - $I_C$  Characteristics**

