

SavantIC Semiconductor

Product Specification

Silicon NPN Power Transistors

BU931R BU932R

DESCRIPTION

- With TO-3 package
- DARLINGTON

APPLICATIONS

- Automotive ignition applications
- Inverters circuits for motor controls

PINNING (See Fig.2)

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

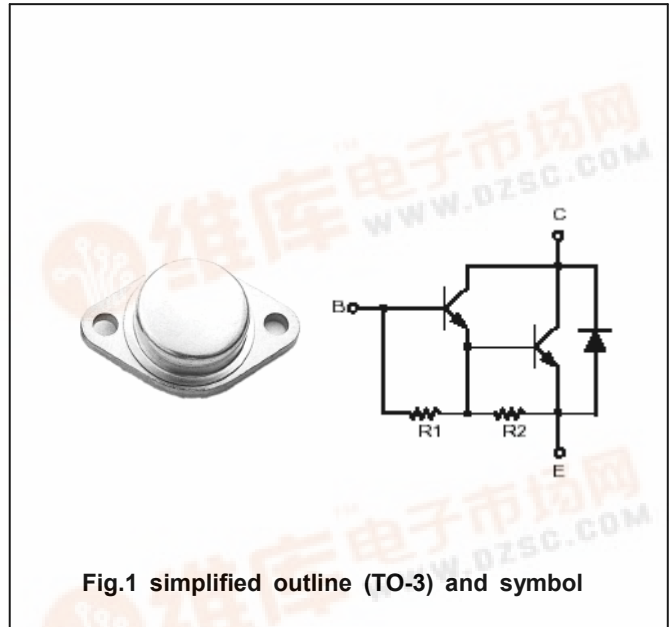


Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	BU931R	400	V
		BU932R	450	
V <sub>CEO</sub>	Collector-emitter voltage	BU931R	450	V
		BU932R	500	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	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>T</sub>	Total power dissipation	T <sub>C</sub> ≤25°C	175	W
T <sub>j</sub>	Junction temperature		200	°C
T <sub>stg</sub>	Storage temperature		-40~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-c</sub>	Thermal resistance from junction to case	1.0	°C/W

## Silicon NPN Power Transistors

## BU931R BU932R

## CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO</sub>	Collector-emitter sustaining voltage	BU931R	I <sub>C</sub> =100mA ; I <sub>B</sub> =0	400			V
		BU932R		450			
V <sub>CEsat-1</sub>	Collector-emitter saturation Voltage <b>Only for BU931R</b>		I <sub>C</sub> =7A; I <sub>B</sub> =70mA			1.6	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	BU931R	I <sub>C</sub> =8A; I <sub>B</sub> =100mA			1.8	V
		BU932R	I <sub>C</sub> =8A; I <sub>B</sub> =150mA				
V <sub>CEsat-3</sub>	Collector-emitter saturation Voltage <b>Only for BU931R</b>		I <sub>C</sub> =10A; I <sub>B</sub> =250mA			1.8	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage	BU931R	I <sub>C</sub> =8A; I <sub>B</sub> =100mA			2.2	V
		BU932R	I <sub>C</sub> =8A; I <sub>B</sub> =150mA				
V <sub>BEsat-2</sub>	Base-emitter saturation voltage <b>Only for BU931R</b>		I <sub>C</sub> =10A; I <sub>B</sub> =250mA			2.5	V
I <sub>CEO</sub>	Collector cut-off current	BU931R	V <sub>CE</sub> =400V ; I <sub>B</sub> =0			1.0	mA
		BU932R	V <sub>CE</sub> =450V ; I <sub>B</sub> =0				
I <sub>CES</sub>	Collector cut-off current	BU931R	V <sub>CE</sub> =400V ; V <sub>BE</sub> =0 T <sub>C</sub> =125°C			1.0 5.0	mA
		BU932R	V <sub>CE</sub> =450V ; V <sub>BE</sub> =0 T <sub>C</sub> =125°C			1.0 5.0	
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =5V; I <sub>C</sub> =0			50	mA
h <sub>FE</sub>	DC current gain		I <sub>C</sub> =5A ; V <sub>CE</sub> =10V	300			
V <sub>F</sub>	Diode forward voltage		I <sub>F</sub> =10A			2.8	V

## Switching times

t <sub>s</sub>	Storage time	I <sub>C</sub> =7A ; I <sub>B</sub> =70mA ; V <sub>BE</sub> =0; R <sub>BE</sub> =47Ω V <sub>CC</sub> =12V, V <sub>clamp</sub> =300V; L=7mH		15		μs
t <sub>f</sub>	Fall time			0.5		μs

PACKAGE OUTLINE

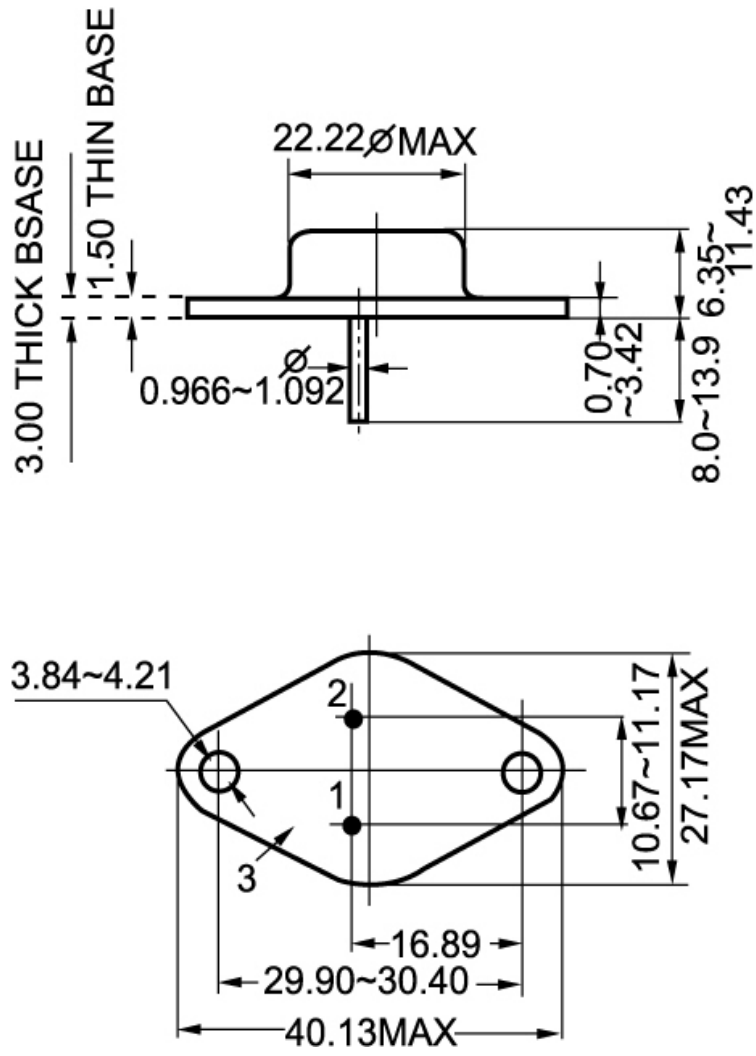


Fig.2 Outline dimensions