

Silicon NPN Power Transistors

BU931P

DESCRIPTION

- With TO-3PN package
- DARLINGTON
- High breakdown voltage

APPLICATIONS

- High ruggedness electronic ignitions.
- High voltage ignition coil driver

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

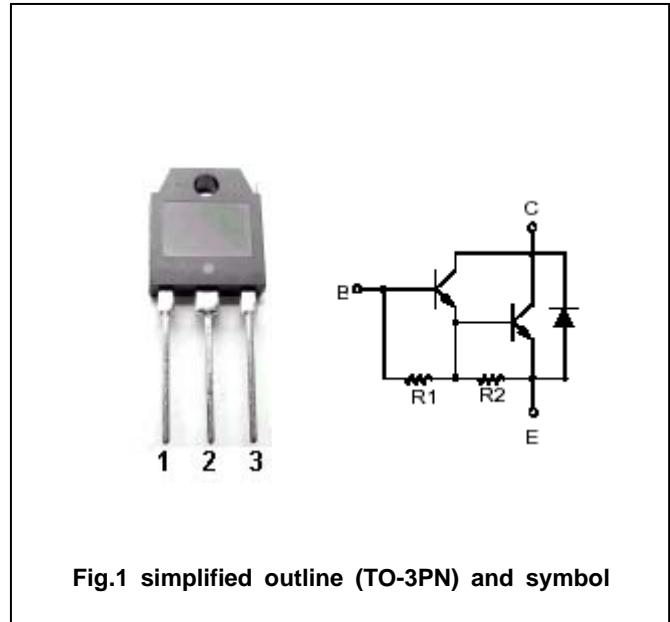


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	500	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	400	V
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	135	W
T <sub>j</sub>	Max.operating junction temperature		175	°C
T <sub>stg</sub>	Storage temperature		-65~175	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-case</sub>	Thermal resistance junction case	1.1	°C/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1 A ; I <sub>B</sub> =0; L=10mH	400			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =7A ; I <sub>B</sub> =0.07A			1.6	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =8A; I <sub>B</sub> =0.1 A			1.8	V
V <sub>CEsat-3</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =10A; I <sub>B</sub> =0.25 A			1.8	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage	I <sub>C</sub> =7A ; I <sub>B</sub> =0.07A			2.2	V
V <sub>BEsat-2</sub>	Base-emitter saturation voltage	I <sub>C</sub> =8A; I <sub>B</sub> =0.1 A			2.4	V
V <sub>BEsat-3</sub>	Base-emitter saturation voltage	I <sub>C</sub> =10A; I <sub>B</sub> =0.25 A			2.5	V
I <sub>CES</sub>	Collector cut-off current	V <sub>CE</sub> =500V; V <sub>BE</sub> =0; T <sub>j</sub> =125°C			0.1 0.5	mA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =450V; I <sub>B</sub> =0; T <sub>j</sub> =125°C			0.1 0.5	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			20	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			2.5	V

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PACKAGE OUTLINE

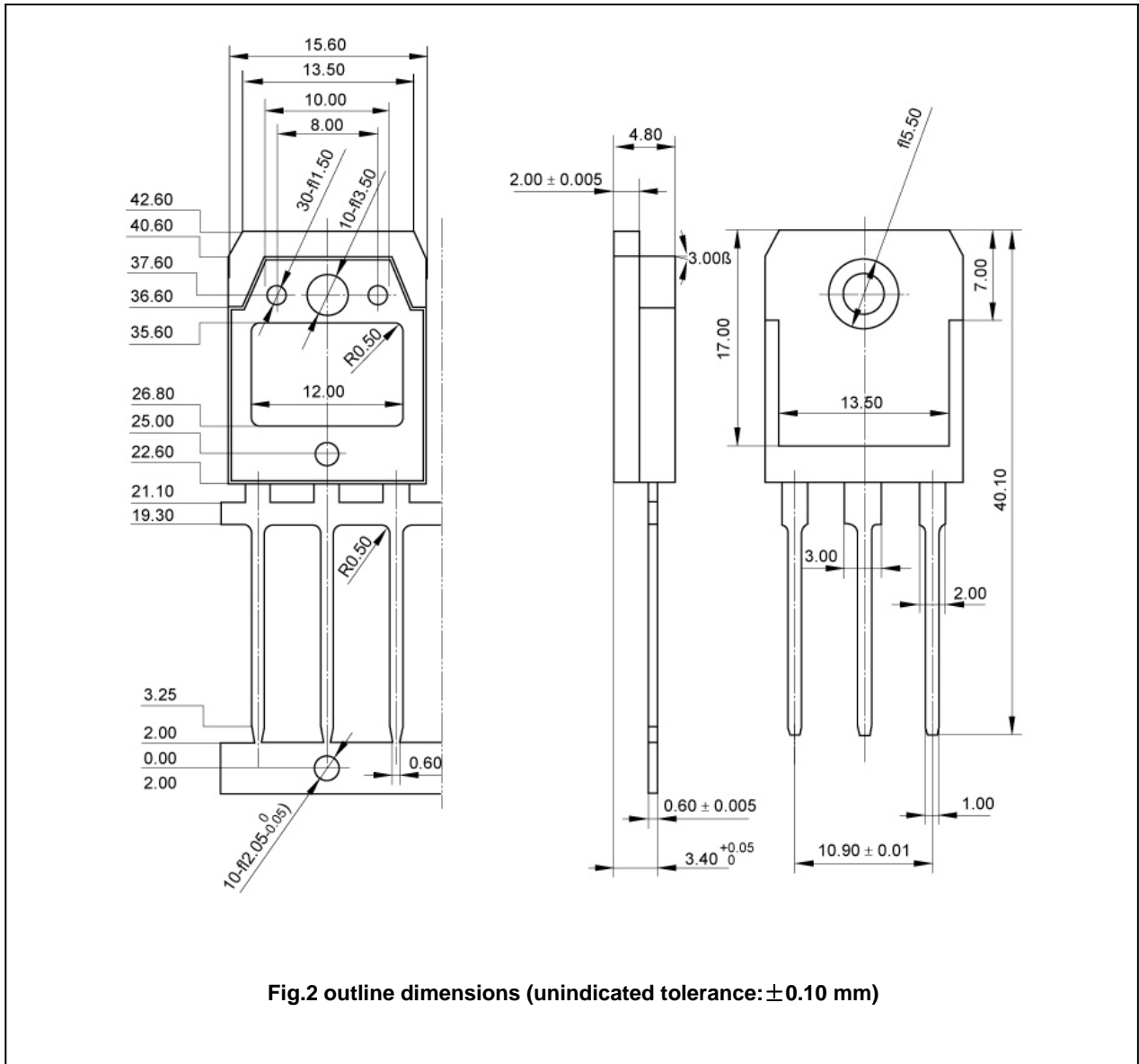


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.10$  mm)