

Silicon NPN Power Transistors

2N3442

DESCRIPTION

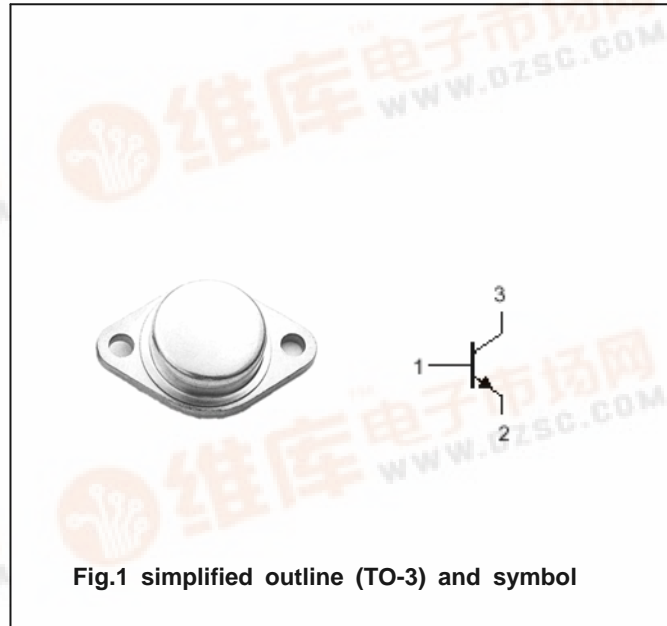
- With TO-3 package
- Excellent safe operating area

APPLICATIONS

- For industrial and commercial equipment including high fidelity audio amplifiers, series and shunt regulators and power switches applications

PINNING

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector



ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	160	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	140	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		10	A
I <sub>CM</sub>	Collector current-peak		15	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25°C	117	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>(th) jc</sub>	Thermal resistance junction to case	1.5	°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> =0.2A ; I <sub>B</sub> =0	140			V
V <sub>CE(sat)</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =10A; I <sub>B</sub> =2A			5.0	V
V <sub>BE(on)</sub>	Base-emitter on voltage	I <sub>C</sub> =10A ; V <sub>CE</sub> =4V			5.7	V
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =140V; I <sub>B</sub> =0			200	mA
I <sub>CEX</sub>	Collector cut-off current	V <sub>CE</sub> =140V; V <sub>BE(off)</sub> =1.5V T <sub>C</sub> =150°C			5.0 30	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V; I <sub>C</sub> =0			5.0	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =3A ; V <sub>CE</sub> =4V	20		70	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =10A ; V <sub>CE</sub> =4V	7.5			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =2.0A ; V <sub>CE</sub> =4V; f <sub>t</sub> =40kHz	80			kHz

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PACKAGE OUTLINE

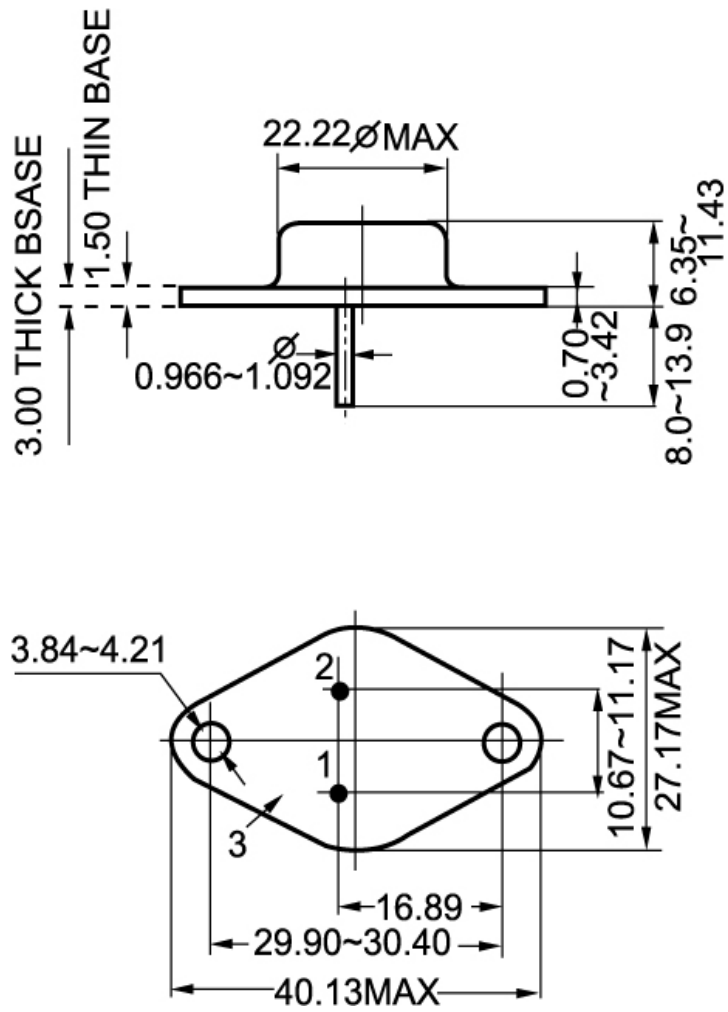


Fig.2 outline dimensions (unindicated tolerance:  $\pm 0.1$ mm)