

Silicon NPN Power Transistors

2SD641

**DESCRIPTION**

- With TO-3 package
- High voltage ,high speed

**APPLICATIONS**

- Converters
- Inverters
- Switching regulators
- Motor controls

**PINNING (See Fig.2)**

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

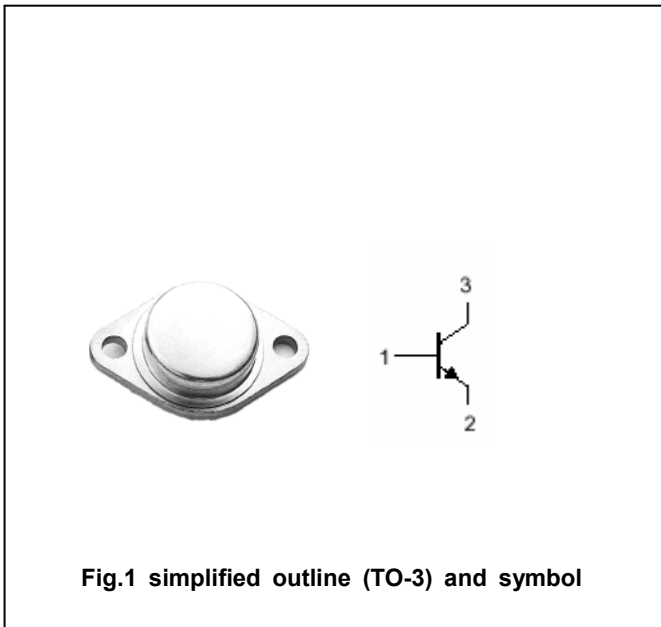


Fig.1 simplified outline (TO-3) and symbol

**Absolute maximum ratings(Ta=□)**

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	600	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	400	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		15	A
I <sub>CM</sub>	Collector current-Peak		30	A
I <sub>B</sub>	Base current		6	A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25□	150	W
T <sub>j</sub>	Junction temperature		200	□
T <sub>stg</sub>	Storage temperature		-65~200	□

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-mb</sub>	Thermal resistance from junction to mounting base	1.0	□/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =10mA ; I <sub>B</sub> =0	400			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =1mA ; I <sub>C</sub> =0	7			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =10A ; I <sub>B</sub> =2A			1.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =10A ; I <sub>B</sub> =2A			2.0	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =500V ; I <sub>E</sub> =0			0.5	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V ; I <sub>C</sub> =0			0.1	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =5A ; V <sub>CE</sub> =5V	20		140	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =10V		4		MHz
C <sub>OB</sub>	Collector output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V ; f=1MHz		150		pF

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PACKAGE OUTLINE

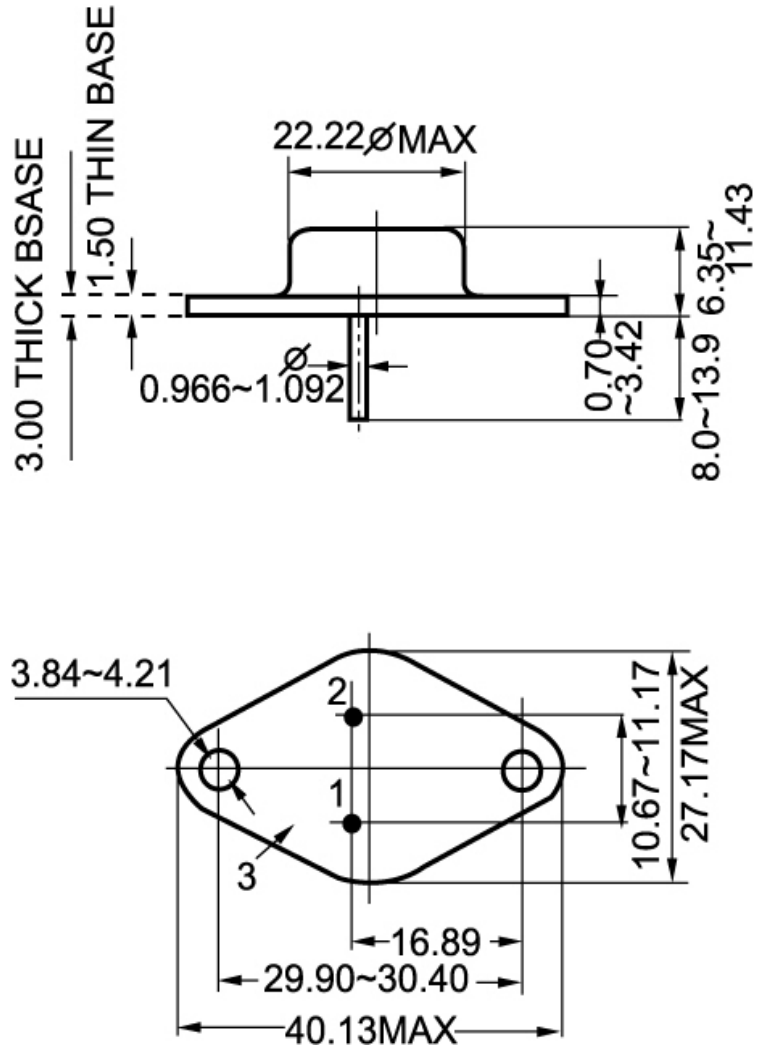


Fig.2 Outline dimensions