

**Silicon NPN Power Transistors**

**2SD1049**

**DESCRIPTION**

- With TO-3PN package
- High current,
- High speed switching
- High reliability

**APPLICATIONS**

- Switching regulators
- Motor controls
- High frequency inverters
- General purpose power amplifiers

**PINNING**

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

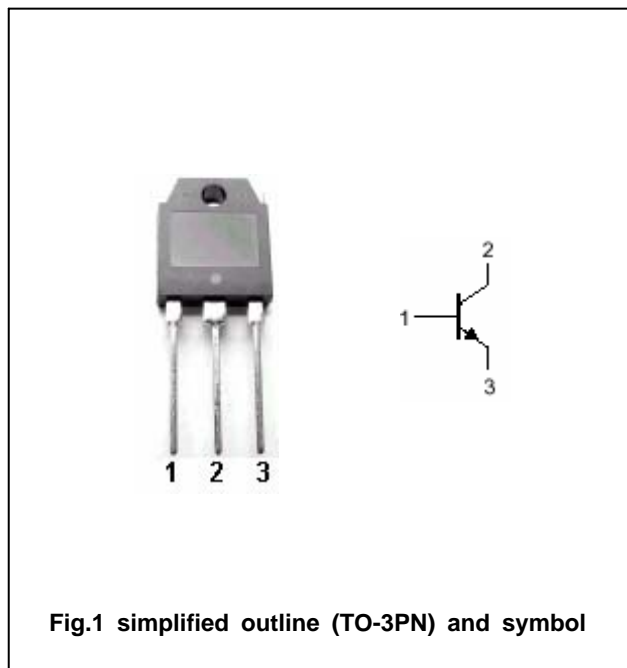


Fig.1 simplified outline (TO-3PN) and symbol

**Absolute maximum ratings(Tc=25 )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	120	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	80	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		25	A
I <sub>B</sub>	Base current		5	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25	80	W
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-55~150	

**THERMAL CHARACTERISTICS**

SYMBOL	CHARACTERISTICS	MAX	UNIT
R <sub>jc</sub>	Thermal resistance junction to case	1.55	/W

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## CHARACTERISTICS

T<sub>j</sub>=25 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	80			V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =0.1mA ; I <sub>E</sub> =0	120			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =0.1mA ; I <sub>C</sub> =0	7			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =25A ; I <sub>B</sub> =2.5A			1.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =25A ; I <sub>B</sub> =2.5A			2.0	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =120V ; I <sub>E</sub> =0			0.1	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> =25A ; V <sub>CE</sub> =5V	20			

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =25A I <sub>B1</sub> =-I <sub>B2</sub> =2.5A R <sub>L</sub> =3Ω; P <sub>W</sub> =20 μ s; Duty≤2%			1.0	μ s
t <sub>stg</sub>	Storage time				2.5	μ s
t <sub>f</sub>	Fall time				0.4	μ s

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PACKAGE OUTLINE

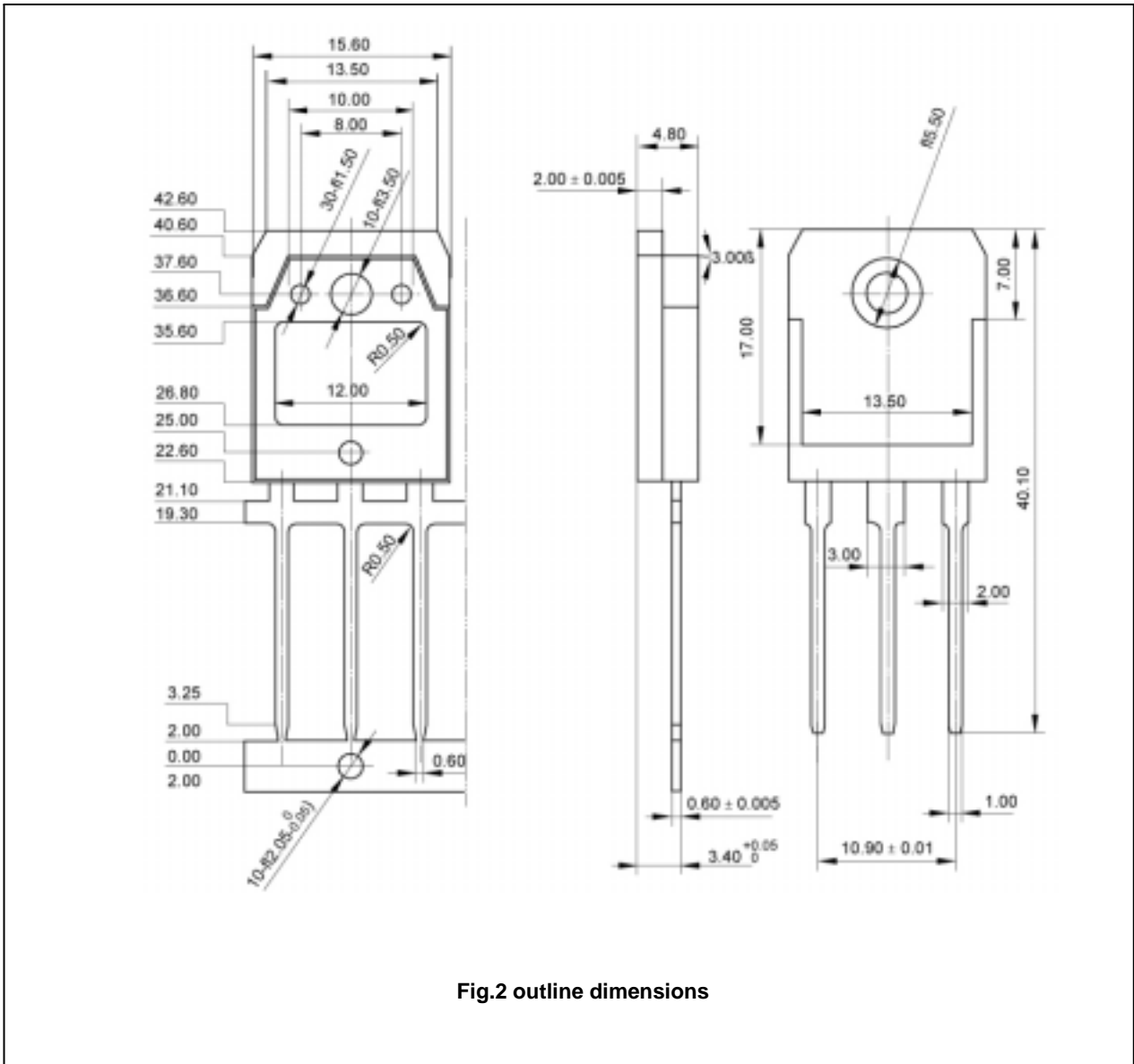


Fig.2 outline dimensions