

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

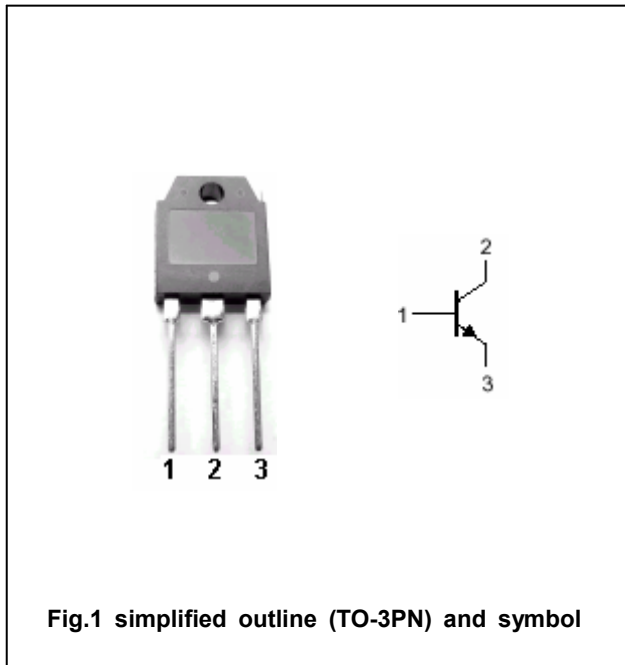


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings(Tc=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	Open emitter	120	V
V _{CEO}	Collector-emitter voltage	Open base	80	V
V _{EBO}	Emitter-base voltage	Open collector	7	V
I _C	Collector current		25	A
I _B	Base current		5	A
P _C	Collector power dissipation	T _C =25°C	80	W
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-55~150	°C

THERMAL CHARACTERISTICS

SYMBOL	CHARACTERISTICS	MAX	UNIT
Rθjc	Thermal resistance junction to case	1.55	°C/W

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CHARACTERISTICS

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 $T_j=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=10\text{mA}; I_B=0$	80			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=0.1\text{mA}; I_E=0$	120			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=0.1\text{mA}; I_C=0$	7			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=25\text{A}; I_B=2.5\text{A}$			1.5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=25\text{A}; I_B=2.5\text{A}$			2.0	V
I_{CBO}	Collector cut-off current	$V_{CB}=120\text{V}; I_E=0$			0.1	mA
I_{EBO}	Emitter cut-off current	$V_{EB}=7\text{V}; I_C=0$			0.1	mA
h_{FE}	DC current gain	$I_C=25\text{A}; V_{CE}=5\text{V}$	20			

Switching times

t_{on}	Turn-on time	$I_C=25\text{A}; I_{B1}=-I_{B2}=2.5\text{A}$ $R_L=3\Omega; P_W=20\mu\text{s};$ Duty $\leq 2\%$			1.0	μs
t_{stg}	Storage time				2.5	μs
t_f	Fall time				0.4	μs

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PACKAGE OUTLINE

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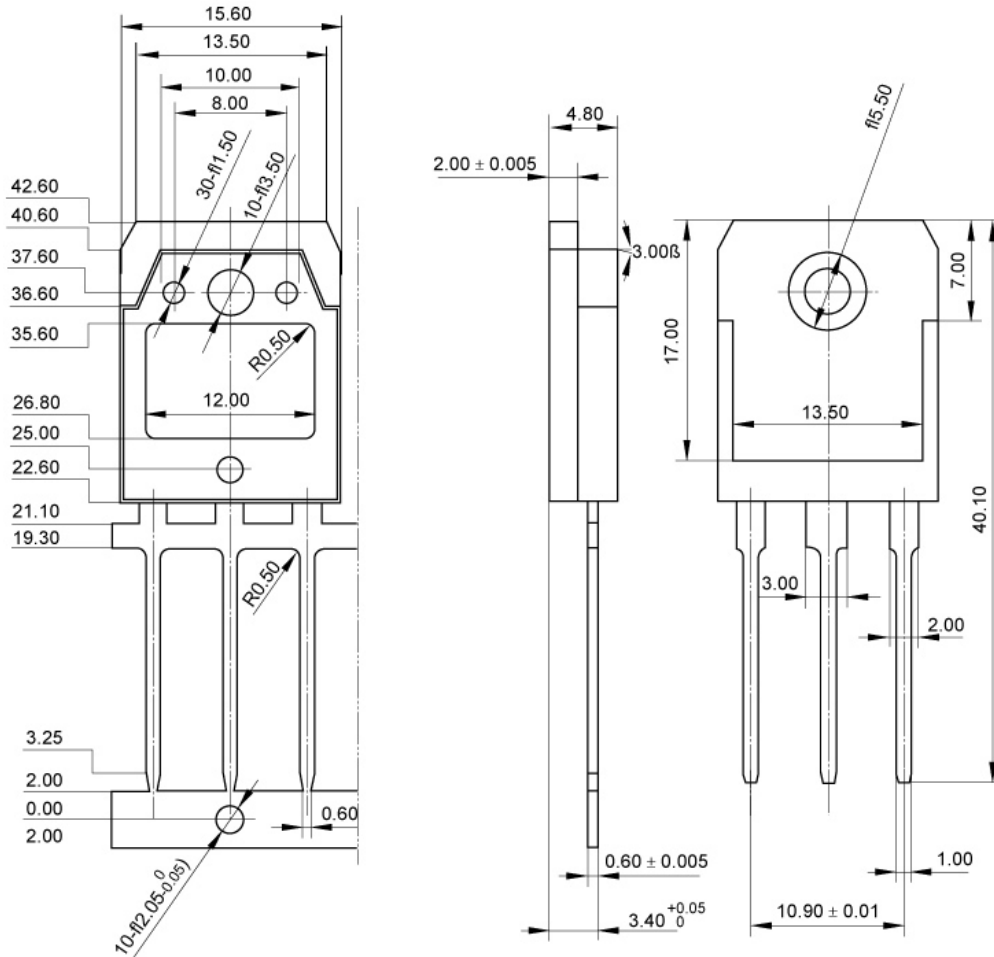


Fig.2 outline dimensions