

Silicon NPN Power Transistors

2SC4148

DESCRIPTION

- With ITO-220 package
- Switching power transistor
- Low saturation voltage

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

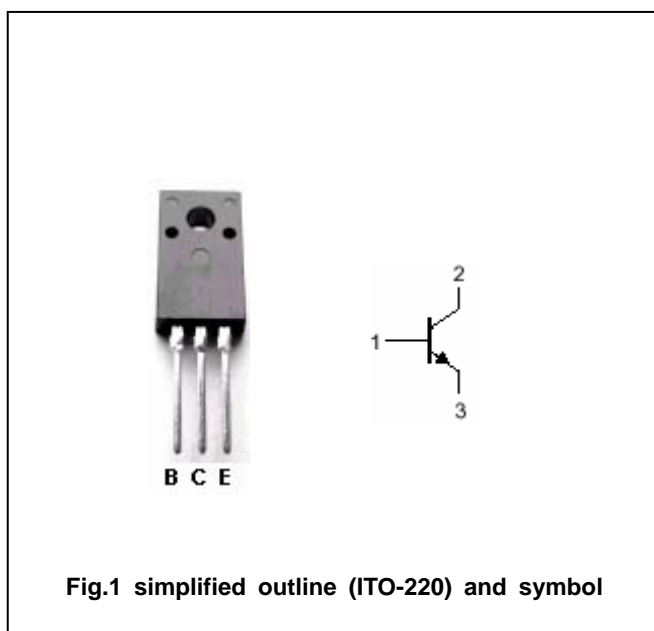


Fig.1 simplified outline (ITO-220) and symbol

Absolute maximum ratings(Ta=25 )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	60	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	40	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		7	A
I <sub>CM</sub>	Collector current-Peak		14	A
I <sub>B</sub>	Base current		1.5	A
I <sub>BM</sub>	Base current-Peak		2	A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25	25	W
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-55~150	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction case	5.0	/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0	40			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =3.5A; I <sub>B</sub> =0.2A			0.3	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =3.5A; I <sub>B</sub> =0.2A			1.2	V
I <sub>CBO</sub>	Collector cut-off current	At rated volatge			0.1	mA
I <sub>CEO</sub>	Collector cut-off current					
I <sub>EBO</sub>	Emitter cut-off current	At rated volatge			0.1	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =3.5A ; V <sub>CE</sub> =2V	70			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.7A ; V <sub>CE</sub> =10V		50		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =3.5A; I <sub>B1</sub> =0.35A I <sub>B2</sub> =0.35A ,R <sub>L</sub> =8 V <sub>BB2</sub> =4V			0.3	μs
t <sub>s</sub>	Storage time				1.5	μs
t <sub>f</sub>	Fall time				0.5	μs

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PACKAGE OUTLINE

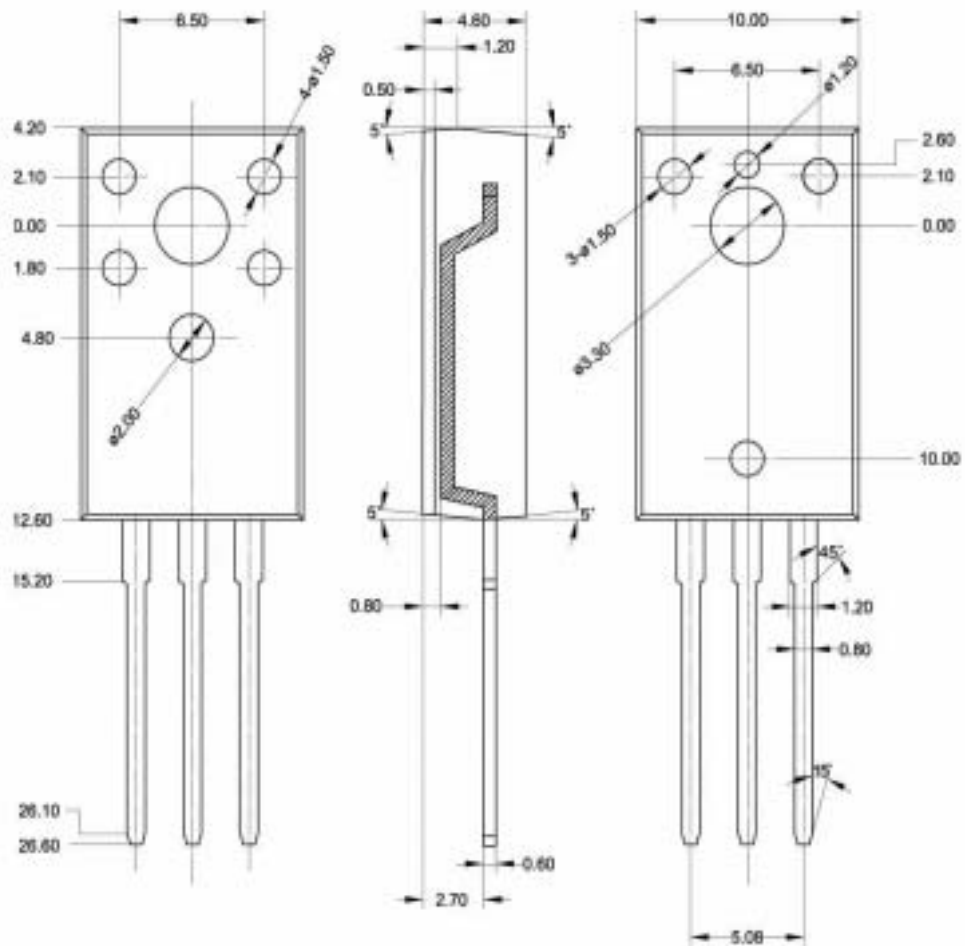


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.20$  mm)