

Silicon NPN Power Transistors

BUF405AFP

DESCRIPTION

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- With TO-220F package
- High voltage,high speed

APPLICATIONS

- Switch mode power supplies
- Motor drivers

PINNING

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

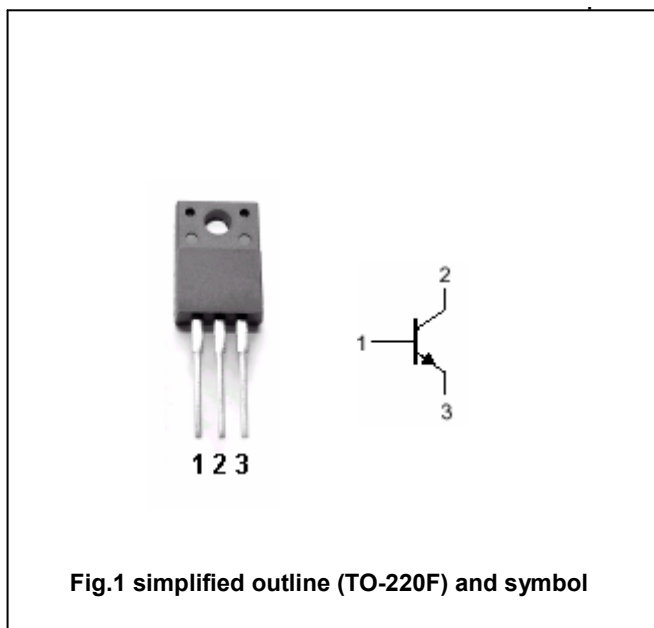


Fig.1 simplified outline (TO-220F) and symbol

Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	1000	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	450	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current (DC)		7.5	A
I <sub>CM</sub>	Collector current-Peak	t <sub>p</sub> <5ms	15	A
I <sub>B</sub>	Base current (DC)		3	A
I <sub>BM</sub>	Base current-Peak	t <sub>p</sub> <5ms	4.5	A
P <sub>tot</sub>	Total power dissipation	T <sub>C</sub> =25°C	39	W
T <sub>j</sub>	Maximum operating junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-case</sub>	Thermal resistance junction to case	3.2	°C/W

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## CHARACTERISTICS

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

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =200mA ; I <sub>B</sub> =0; L=25mH	450			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =50mA ; I <sub>C</sub> =0	7			V
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2.5A; I <sub>B</sub> =0.25A T <sub>C</sub> =100°C		0.8	2.8	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =5A ; I <sub>B</sub> =1A T <sub>C</sub> =100°C		0.5	2.0	V
V <sub>BEsat-1</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2.5A; I <sub>B</sub> =0.25A T <sub>C</sub> =100°C		0.9	1.5	V
V <sub>BEsat-2</sub>	Base-emitter saturation voltage	I <sub>C</sub> =5A ; I <sub>B</sub> =1A T <sub>C</sub> =100°C		1.1	1.5	V
I <sub>CEV</sub>	Collector cut-off current	V <sub>CE</sub> =1000V; V <sub>BE</sub> =-1.5V T <sub>C</sub> =100°C			100 500	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			1	mA

Switching times inductive load

t <sub>s</sub>	Storage time	I <sub>C</sub> =2.5A ; V <sub>CC</sub> =50V I <sub>B1</sub> =0.25A; V <sub>BB</sub> =-5V ; L=1mH R <sub>BB</sub> =2.4Ω; V <sub>clamp</sub> =400V		0.8		μs
t <sub>f</sub>	Fall time			0.05		μs

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PACKAGE OUTLINE

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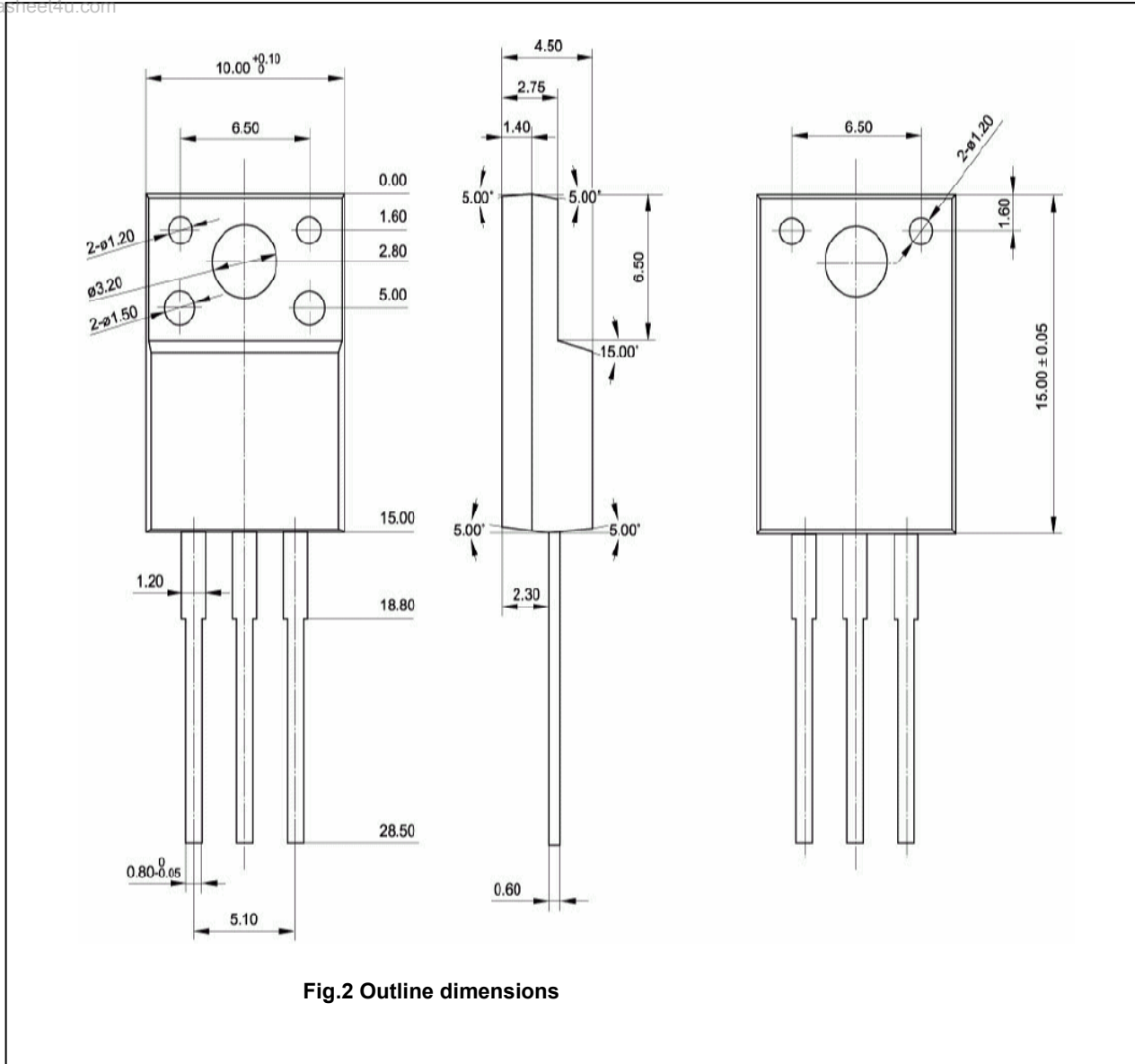


Fig.2 Outline dimensions