

Silicon NPN Power Transistors

BU505DF

DESCRIPTION

- With TO-220Fa package
- High voltage,high speed
- Built-in damper diode.

APPLICATIONS

- For horizontal deflection circuits of color TV receivers.

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

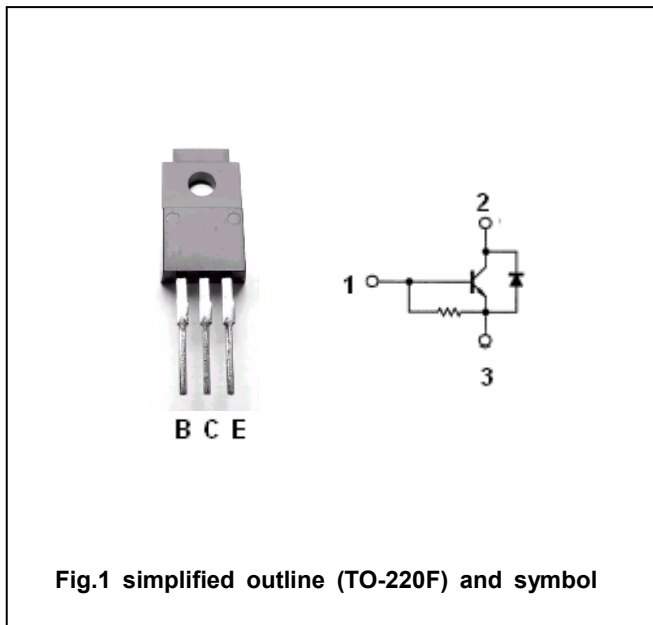


Fig.1 simplified outline (TO-220F) and symbol

Absolute maximum ratings (Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	1500	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	700	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current		2.5	A
I <sub>CM</sub>	Collector current (peak)		4	A
I <sub>B</sub>	Base current		2	A
I <sub>BM</sub>	Base current(peak)		4	A
P <sub>tot</sub>	Total power dissipation	T <sub>C</sub> =25°C	20	W
T <sub>j</sub>	Max.operating junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-a</sub>	Thermal resistance from junction to ambient	55	K/W

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.1 A ; I <sub>B</sub> =0; L=25mH	700			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =600mA ; I <sub>C</sub> =0	7.5	13.5		V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2A ; I <sub>B</sub> =0.9 A			1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2A ; I <sub>B</sub> =0.9 A			1.3	V
I <sub>CES</sub>	Collector cut-off current	V <sub>CE</sub> =1500V; V <sub>BE</sub> =0; T <sub>C</sub> =125°C			0.15 1.0	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =0.1A ; V <sub>CE</sub> =5V	6		30	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =2A ; V <sub>CE</sub> =5V	2.22			
V <sub>F</sub>	Diode forward voltage	I <sub>F</sub> =2A			1.8	V
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.1A ; V <sub>CE</sub> =5V		7		MHz
C <sub>C</sub>	Collector output capacitance	I <sub>E</sub> =0; f=1MHz; V <sub>CB</sub> =10V		65		pF

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PACKAGE OUTLINE

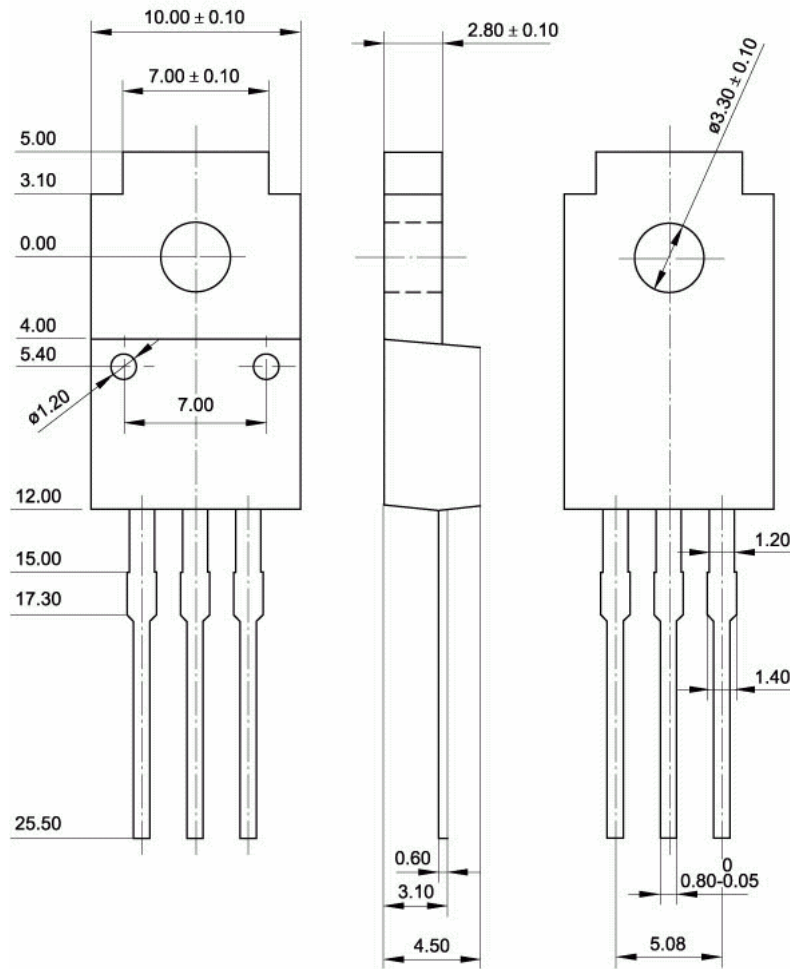


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.15$  mm)