

**Silicon NPN Power Transistors**

**MJE12007**

**DESCRIPTION**

- With TO-220 package
- High voltage
- Low saturation voltage

**APPLICATIONS**

Suited for line-operated switchmode applications such as:

- Fluorescent lamp ballasts
- Inverters
- Solenoid and relay drivers
- Motor controls
- Deflection circuits

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

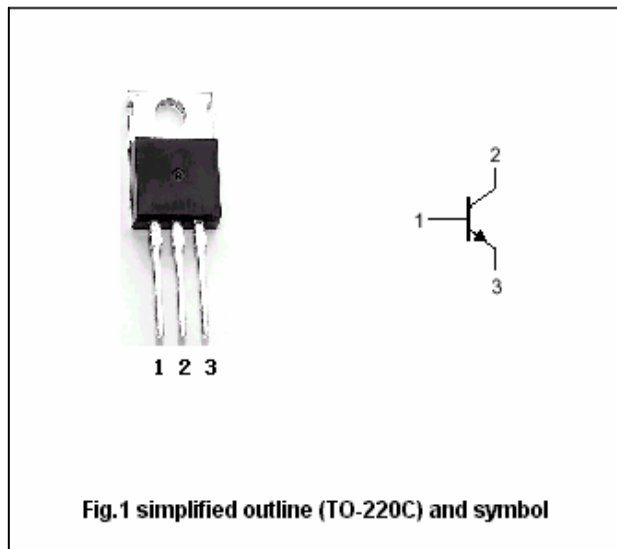


Fig.1 simplified outline (TO-220C) and symbol

**ABSOLUTE MAXIMUM RATINGS(T<sub>C</sub>=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	750	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	9	V
I <sub>C</sub>	Collector current (DC)		2.5	A
I <sub>CM</sub>	Collector current-Peak		5	A
P <sub>D</sub>	Total power dissipation	T <sub>C</sub> =25°C	80	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-65~150	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	1.56	°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> =50mA; I <sub>B</sub> =0	750			V
V <sub>CE(sat)-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =1A; I <sub>B</sub> =0.5A			1.0	V
V <sub>CE(sat)-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =1A			2.5	V
V <sub>BE(sat)-1</sub>	Base-emitter saturation voltage	I <sub>C</sub> =1A; I <sub>B</sub> =0.5A			1.5	V
V <sub>BE(sat)-2</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2A; I <sub>B</sub> =1A			2.8	V
I <sub>CEV</sub>	Collector cut-off current	V <sub>CEV</sub> =RatedValue; V <sub>BE(off)</sub> =-1.5V T <sub>C</sub> =100°C			0.25 2.5	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =9V; I <sub>C</sub> =0			0.25	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =1A; V <sub>CE</sub> =5V	3			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =2A; V <sub>CE</sub> =5V	2.5			

PACKAGE OUTLINE

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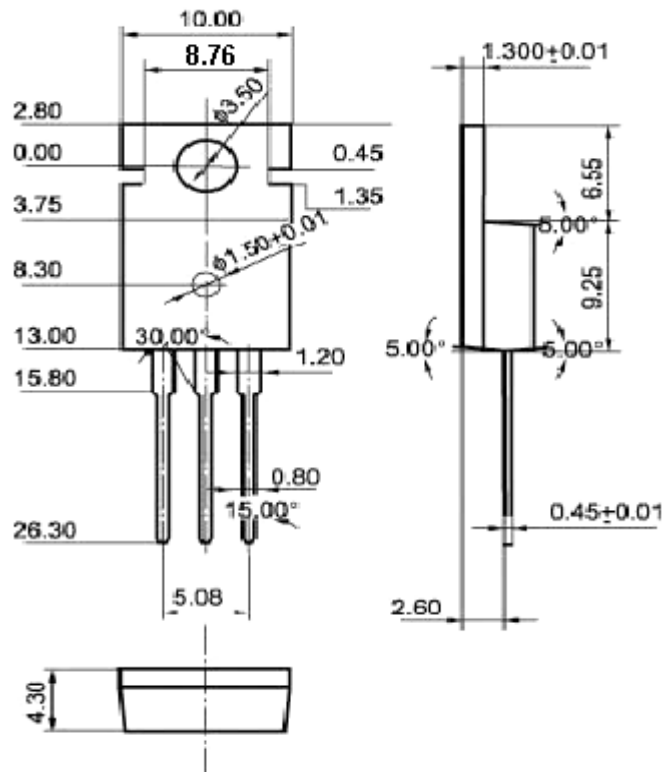


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.10$ mm)