

**Silicon NPN Power Transistors**

**2N6477 2N6478**

**DESCRIPTION**

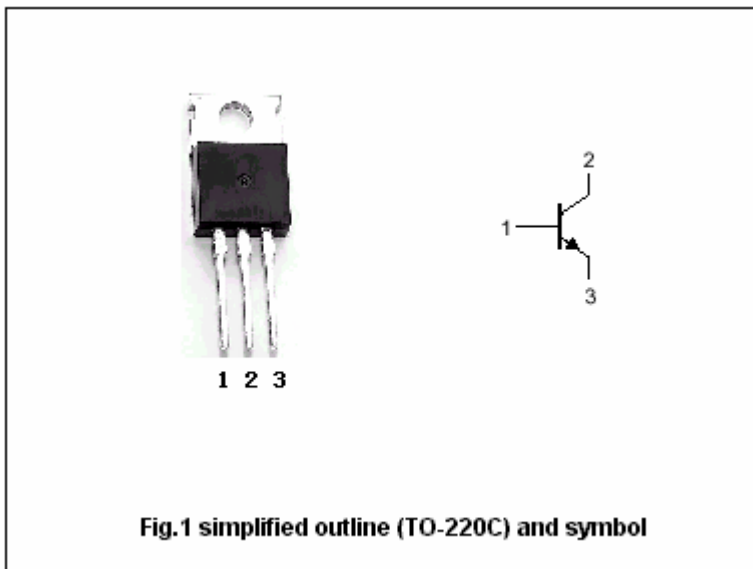
- With TO-220 package
- Low collector saturation voltage
- High voltage ratings
- Excellent safe operating area

**APPLICATIONS**

- Series and shunt regulators
- High-fidelity amplifiers
- Power switching circuits
- Solenoid drivers

**PINNING**

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



**Absolute maximum ratings(Ta=25 )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2N6477	140	V
		2N6478	160	
V <sub>CEO</sub>	Collector-emitter voltage	2N6477	120	V
		2N6478	140	
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		1	A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25	50	W
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-65~150	

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal resistance from junction to case	2.5	/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	2N6477	I <sub>C</sub> =0.1A ; I <sub>B</sub> =0			V
		2N6478				
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =1.0A; I <sub>B</sub> =0.1A			1.0	V
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2.5A; I <sub>B</sub> =0.5A			2.0	V
V <sub>BE-1</sub>	Base-emitter on voltage	I <sub>C</sub> =1.0A ; V <sub>CE</sub> =4V			1.8	V
V <sub>BE-2</sub>	Base-emitter on voltage	I <sub>C</sub> =2.5A ; V <sub>CE</sub> =4V			3.0	V
I <sub>CEx</sub>	Collector cut-off current V <sub>BE</sub> =-1.5V	2N6477	V <sub>CE</sub> =130V V <sub>CE</sub> =120V; T <sub>C</sub> =150		2.0 10	mA
		2N6478				
I <sub>CEO</sub>	Collector cut-off current	2N6477	V <sub>CE</sub> =80V; I <sub>B</sub> =0		2.0	mA
		2N6478				
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			2.0	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =1.0A ; V <sub>CE</sub> =4V	25		150	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =2.5A ; V <sub>CE</sub> =4V	5			
C <sub>OB</sub>	Output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V; f=1MHz			250	pF
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =4V		0.2		MHz

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PACKAGE OUTLINE

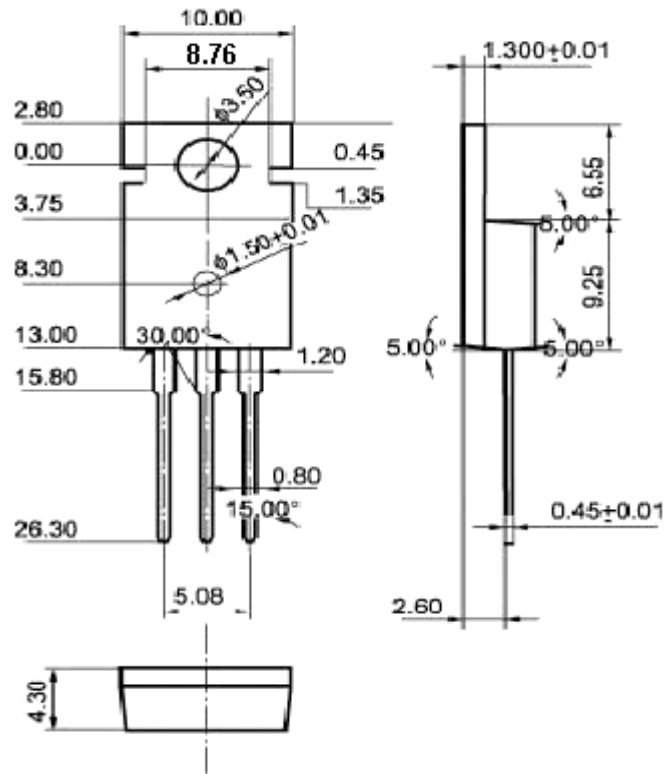


Fig.2 Outline dimensions(unindicated tolerance:  $\pm 0.10$  mm)