

**Silicon NPN Power Transistors**

**TIP29/29A/29B/29C**

**DESCRIPTION**

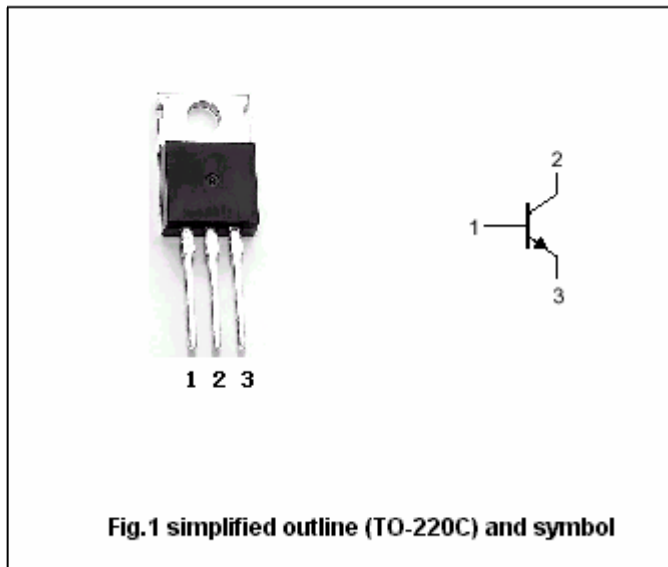
- With TO-220C package
- Complement to type TIP30/30A/30B/30C

**APPLICATIONS**

- For use in general purpose power amplifier and switching applications

**PINNING**

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



**ABSOLUTE MAXIMUM RATINGS(T<sub>c</sub>=25 °C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	TIP29	40	V
		TIP29A	60	
		TIP29B	80	
		TIP29C	100	
V <sub>CEO</sub>	Collector-emitter voltage	TIP29	40	V
		TIP29A	60	
		TIP29B	80	
		TIP29C	100	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current (DC)		1	A
I <sub>CM</sub>	Collector current-Pulse		3	A
I <sub>B</sub>	Base current		0.4	A
P <sub>C</sub>	Collector power dissipation	T <sub>c</sub> =25 °C	30	w
T <sub>j</sub>	Junction temperature		-65~150	°C
T <sub>stg</sub>	Storage temperature		-65~150	°C

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## TIP29/29A/29B/29C

## CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE(SUS)</sub>	Collector-emitter sustaining voltage	TIP29	I <sub>C</sub> =30mA; I <sub>B</sub> =0	40			V
		TIP29A		60			
		TIP29B		80			
		TIP29C		100			
V <sub>CE(sat)</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =1A; I <sub>B</sub> =0.125A			0.7	V
V <sub>BE</sub>	Base-emitter on voltage		I <sub>C</sub> =1A; V <sub>CE</sub> =4V			1.3	V
I <sub>CES</sub>	Collector cut-off current	TIP29	V <sub>CE</sub> =40V; V <sub>EB</sub> =0			0.2	mA
		TIP29A	V <sub>CE</sub> =60V; V <sub>EB</sub> =0				
		TIP29B	V <sub>CE</sub> =80V; V <sub>EB</sub> =0				
		TIP29C	V <sub>CE</sub> =100V; V <sub>EB</sub> =0				
I <sub>CEO</sub>	Collector cut-off current	TIP29/29A	V <sub>CE</sub> =30V; I <sub>B</sub> =0			0.3	mA
		TIP29B/29C	V <sub>CE</sub> =60V; I <sub>B</sub> =0				
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =5V; I <sub>C</sub> =0			1.0	mA
h <sub>FE-1</sub>	DC current gain		I <sub>C</sub> =0.2A; V <sub>CE</sub> =4V	40			
h <sub>FE-2</sub>	DC current gain		I <sub>C</sub> =1A; V <sub>CE</sub> =4V	15		75	
f <sub>T</sub>	Transition frequency		I <sub>C</sub> =0.2A; V <sub>CE</sub> =10V; f=1MHz	3			MHz

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
R <sub>th j-c</sub>	Thermal resistance junction to case	4.167	°C/W

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PACKAGE OUTLINE

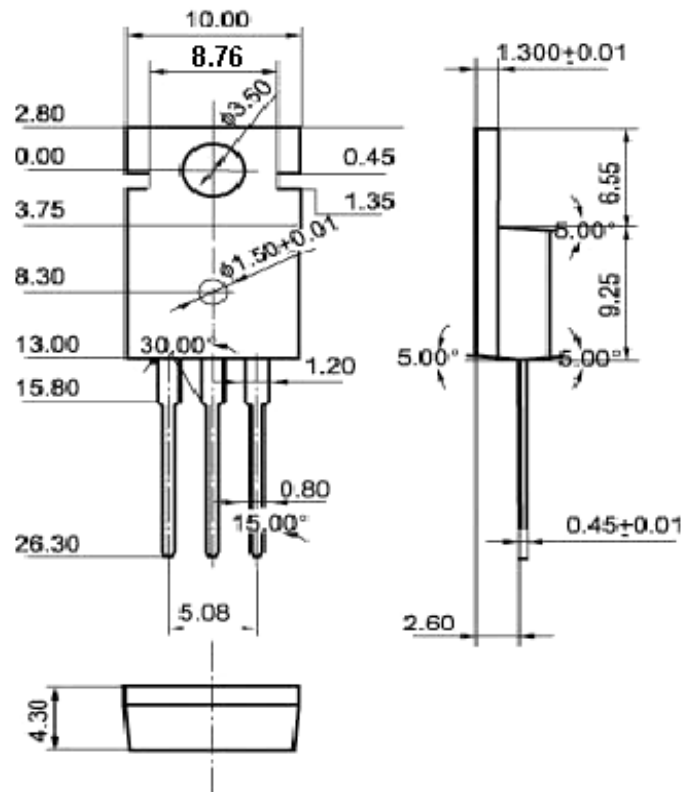


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.10$  mm)