

Silicon NPN Power Transistors

BD239/A/B/C

DESCRIPTION

- With TO-220C package
- Complement to type BD240/A/B/C

APPLICATIONS

- For medium power linear and switching applications

PINNING

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

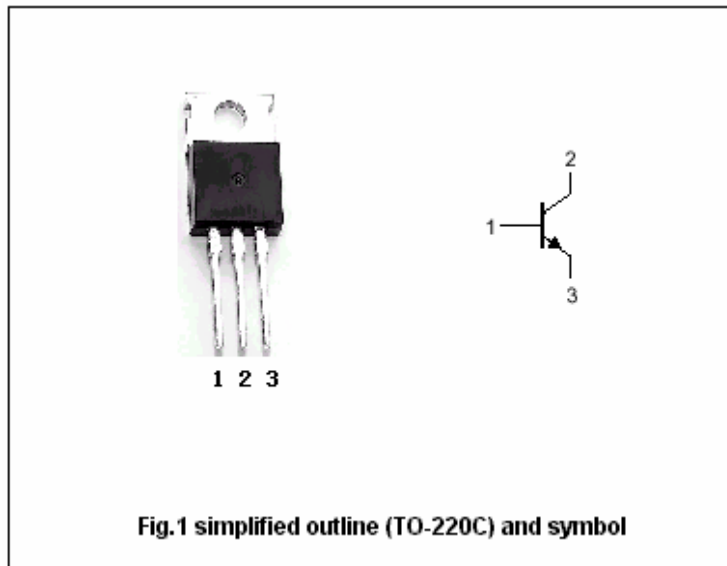


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings (Ta=25 )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	BD239	55	V
		BD239A	70	
		BD239B	90	
		BD239C	115	
V <sub>CEO</sub>	Collector-emitter voltage	BD239	45	V
		BD239A	60	
		BD239B	80	
		BD239C	100	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current		2	A
I <sub>CM</sub>	Collector current-peak		4	A
I <sub>B</sub>	Base current		0.6	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25	30	W
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	Storage temperature		-65~150	

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	BD239	45			V	
		BD239A	60				
		BD239B	80				
		BD239C	100				
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =1 A; I <sub>B</sub> =0.2 A			0.7	V	
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =1 A ; V <sub>CE</sub> =4V			1.3	V	
I <sub>CEO</sub>	Collector cut-off current	BD239/A	V <sub>CE</sub> =30V; I <sub>B</sub> =0			0.3	mA
		BD239B/C	V <sub>CE</sub> =60V; I <sub>B</sub> =0				
I <sub>CES</sub>	Collector cut-off current	BD239	V <sub>CE</sub> =45V; V <sub>BE</sub> =0			0.2	mA
		BD239A	V <sub>CE</sub> =60V; V <sub>BE</sub> =0				
		BD239B	V <sub>CE</sub> =80V; V <sub>BE</sub> =0				
		BD239C	V <sub>CE</sub> =100V; V <sub>BE</sub> =0				
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			1	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				

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PACKAGE OUTLINE

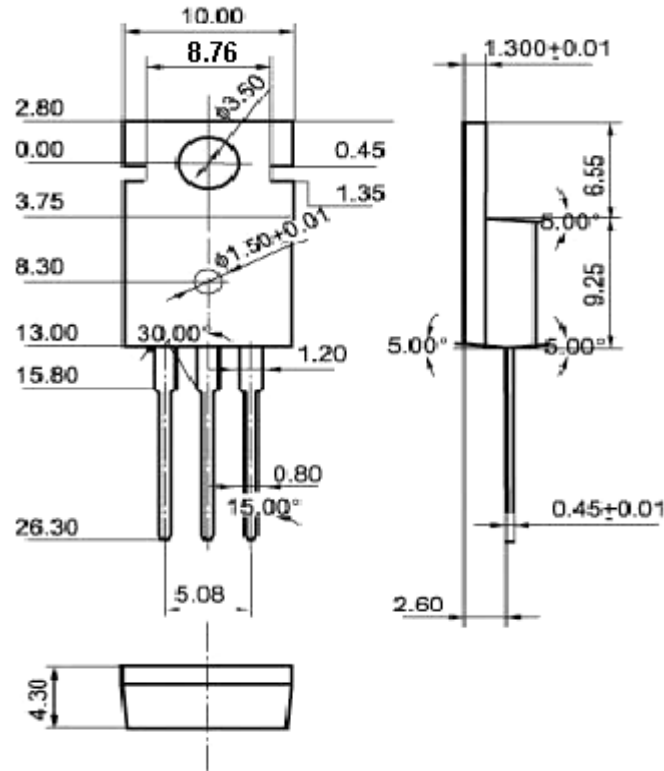


Fig.2 Outline dimensions (unindicated tolerance: ± 0.10 mm)