

### **BD239/A/B/C**

# **Medium Power Linear and Switching Applications**

• Complement to BD240/A/B/C respectively



## **NPN Epitaxial Silicon Transistor**

1.Base 2.Collector 3.Emitter

Rev. A, February 2000

### Absolute Maximum Ratings $T_C=25^{\circ}C$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CEO}$	Collector-Emitter Voltage		
	: BD239	45	V
	: BD239A	60	V
	: BD239B	80	V
	: BD239C	100	V
V <sub>CER</sub>	Collector-Emitter Voltage		
	: BD239	55	V
	: BD239A	70	V
	: BD239B	90	V
	: BD239C	115	V
$V_{EBO}$	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current (DC)	2	Α
I <sub>CP</sub>	*Collector Current (Pulse)	4	Α
I <sub>B</sub>	Base Current	0.6	Α
P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> =25°C)	30	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	- 65 ~ 150	°C

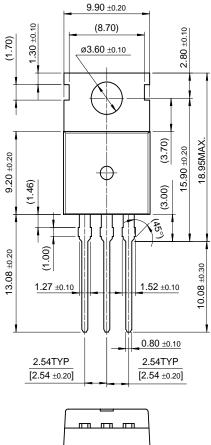
### Electrical Characteristics T<sub>C</sub>=25°C unless otherwise noted

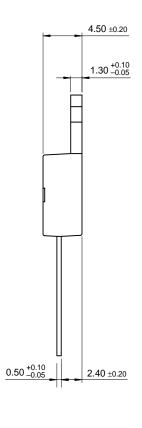
Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
V <sub>CEO</sub> (sus)	*Collector-Emitter Sustaining Voltage					
	: BD239	$I_C = 30 \text{mA}, I_B = 0$	45			V
	: BD239A		60			V
	: BD239B		80			V
	: BD239C		100			V
I <sub>CEO</sub>	Collector Cut-off Current					
	: BD239/A	$V_{CE} = 30V, I_{B} = 0$			0.3	mA
	: BD239B/C	$V_{CE} = 60V, I_{B} = 0$			0.3	mA
I <sub>CES</sub>	Collector Cut-off Current					
	: BD239	$V_{CE} = 45V, V_{BE} = 0$			0.2	mA
	: BD239A	$V_{CE} = 60V, V_{BE} = 0$			0.2	mA
	: BD239B	$V_{CE} = 80V, V_{BE} = 0$			0.2	mA
	: BD239C	$V_{CE} = 100V, V_{BE} = 0$			0.2	mA
I <sub>EBO</sub>	Emitter Cut-off Current	$V_{EB} = 5V, I_{C} = 0$			1	mA
h <sub>FE</sub>	*DC Current Gain	$V_{CE} = 4V, I_{C} = 0.2A$	40			
		$V_{CE} = 4V, I_{C} = 1A$	15			
V <sub>CE</sub> (sat)	*Collector-Emitter Saturation Voltage	$I_C = 1A, I_B = 0.2A$			0.7	V
V <sub>RF</sub> (on)	*Base-Emitter ON Voltage	$V_{CF} = 4V, I_{C} = 1A$			1.3	V

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# **Package Demensions**

# TO-220





10.00 ±0.20

Dimensions in Millimeters

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