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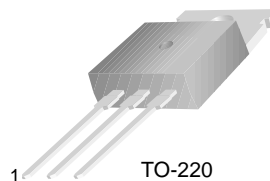
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BD239/A/B/C

Medium Power Linear and Switching Applications

- Complement to BD240/A/B/C respectively



TO-220
1.Base 2.Collector 3.Emitter

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ 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_{CER}	Collector-Emitter Voltage		
	: BD239	55	V
	: BD239A	70	V
	: BD239B	90	V
	: BD239C	115	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current (DC)	2	A
I_{CP}	*Collector Current (Pulse)	4	A
I_B	Base Current	0.6	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	30	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 65 ~ 150	$^\circ\text{C}$

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

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

* Pulse Test: $PW=350\mu\text{s}$, duty Cycles $\leq 2.0\%$ Pulsed

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