



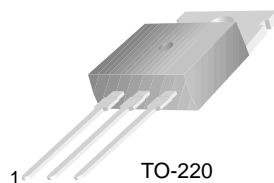
THE DATASHEET OF BD538J



BD534/536/538

Medium Power Linear and Switching Applications

- Low Saturation Voltage
- Complement to BD533, BD535 and BD537 respectively



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

PNP Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : BD534	- 45	V
	: BD536	- 60	V
	: BD538	- 80	V
V_{CEO}	Collector-Emitter Voltage : BD534	- 45	V
	: BD536	- 60	V
	: BD538	- 80	V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current (DC)	- 8	A
I_B	Base Current	- 1	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	50	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	
I_{CBO}	Collector Cut-off Current : BD534	$V_{CB} = - 45\text{V}, I_E = 0$			- 100	μA	
	: BD536	$V_{CB} = - 60\text{V}, I_E = 0$			- 100	μA	
	: BD538	$V_{CB} = - 80\text{V}, I_E = 0$			- 100	μA	
I_{CES}	Collector Cut-off Current : BD534	$V_{CE} = - 45\text{V}, V_{BE} = 0$			- 100	μA	
	: BD536	$V_{CE} = - 60\text{V}, V_{BE} = 0$			- 100	μA	
	: BD538	$V_{CE} = - 80\text{V}, V_{BE} = 0$			- 100	μA	
I_{EBO}	Emitter Cut-off Current	$V_{EB} = - 5\text{V}, I_C = 0$			- 1	mA	
h_{FE}	* DC Current Gain : ALL DEVICE	: BD534/536	$V_{CE} = - 2\text{V}, I_C = - 500\text{mA}$	40			
		: BD538	$V_{CE} = - 5\text{V}, I_C = - 10\text{mA}$	20			
		: BD534/536	$V_{CE} = - 2\text{V}, I_C = - 2\text{A}$	15			
		: BD538		25			
h_{FE}	h_{FE} Groups	J : ALL DEVICE	$V_{CE} = - 2\text{V}, I_C = - 2\text{A}$	30		75	
			$V_{CE} = - 2\text{V}, I_C = - 3\text{A}$	15			
		K : ALL DEVICE	$V_{CE} = - 2\text{V}, I_C = - 2\text{A}$	40		100	
			$V_{CE} = - 2\text{V}, I_C = - 3\text{A}$	20			
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = - 2\text{A}, I_B = - 0.2\text{A}$			- 0.8	V	
		$I_C = - 6\text{A}, I_B = - 0.6\text{A}$		- 0.8		V	
$V_{BE(on)}$	* Base-Emitter ON Voltage	$V_{CE} = - 2\text{V}, I_C = - 2\text{A}$			- 1.5	V	
f_T	Current Gain Bandwidth Product	$V_{CE} = - 1\text{V}, I_C = - 500\text{mA}$	3	12		MHz	

* Pulse Test: PW = 300 μs , duty Cycle = 1.5% Pulsed

Typical Characteristics

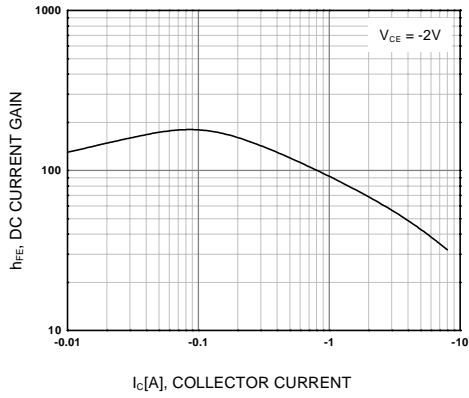


Figure 1. DC current Gain

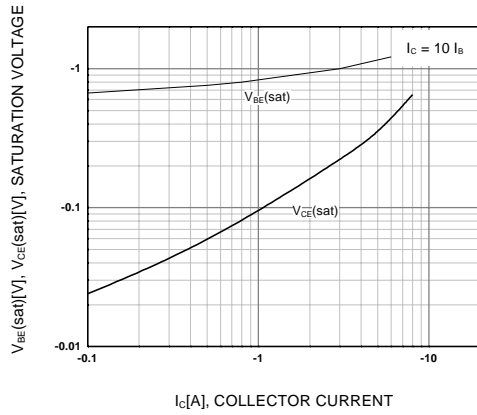


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

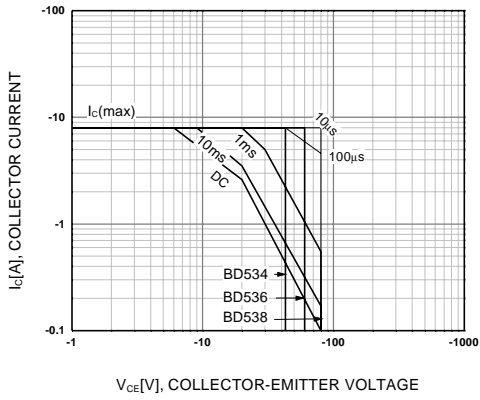


Figure 3. Safe Operating Area

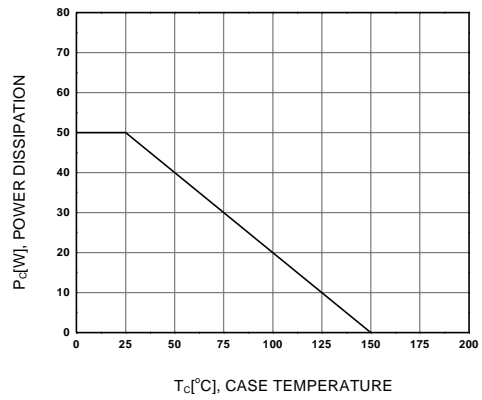


Figure 4. Power Derating

Package Dimensions

TO-220

BD534/536/538



Dimensions in Millimeters

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