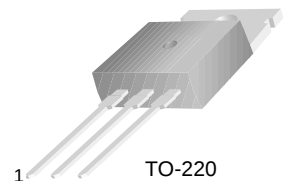


BD533/535/537

Medium Power Linear and Switching Applications

- Low Saturation Voltage
- Complement to BD534, BD536 and BD538 respectively



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_{CBO}	Collector-Base Voltage : BD533	45	V
	: BD535	60	V
	: BD537	80	V
V_{CES}	Collector-Emitter Voltage : BD533	45	V
	: BD535	60	V
	: BD537	80	V
V_{CEO}	Collector-Emitter Voltage : BD533	45	V
	: BD535	60	V
	: BD537	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	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 : BD533	$V_{CB} = 45\text{V}, I_E = 0$			100	μA
	: BD535	$V_{CB} = 60\text{V}, I_E = 0$			100	μA
	: BD537	$V_{CB} = 80\text{V}, I_E = 0$			100	μA
I_{CES}	Collector Cut-off Current : BD533	$V_{CE} = 45\text{V}, V_{BE} = 0$			100	μA
	: BD535	$V_{CE} = 60\text{V}, V_{BE} = 0$			100	μA
	: BD537	$V_{CE} = 80\text{V}, V_{BE} = 0$			100	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5\text{V}, I_C = 0$			1	mA
h_{FE}	* DC Current Gain : BD533/535	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	20			
	: BD537		15			
	: ALL DEVICE	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	40			
	: BD533/535	$V_{CE} = 2\text{V}, I_C = 2\text{A}$	25			
	: BD537		15			
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

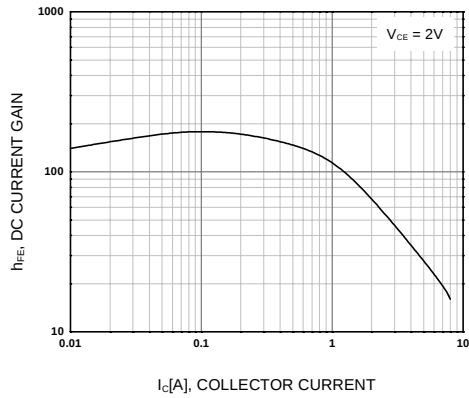


Figure 1. DC current Gain

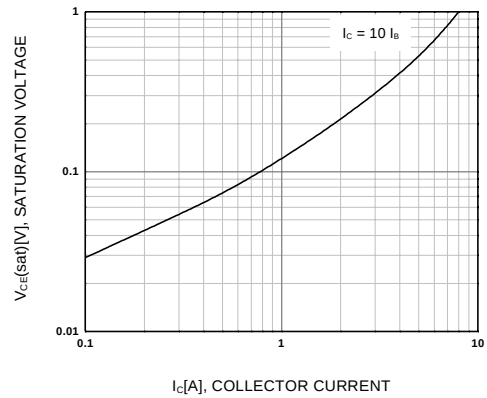


Figure 2. Collector-Emitter Saturation Voltage

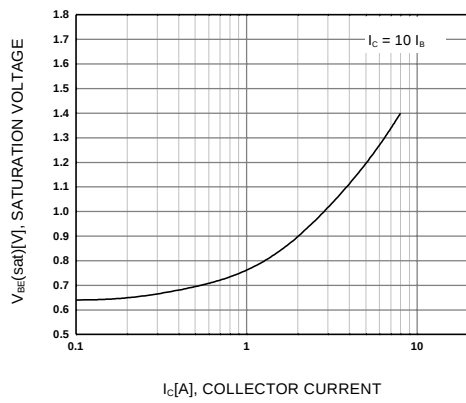


Figure 3. Base-Emitter Saturation Voltage

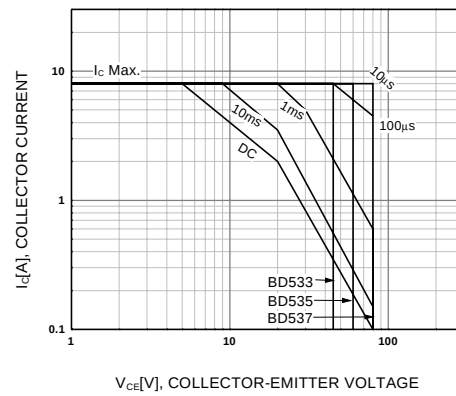


Figure 4. Safe Operating Area

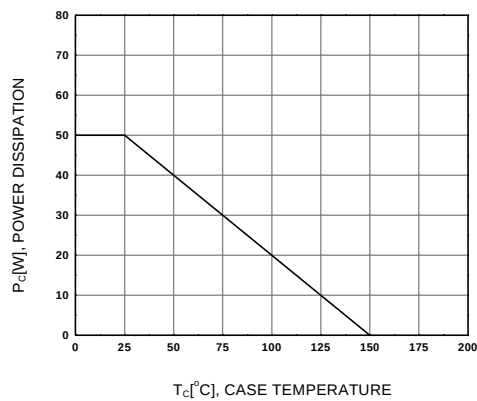


Figure 5. Power Derating

BD533/535/537

[illegible]

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