

TO-220 Plastic Package

**BD533, BD535, BD537
BD534, BD536, BD538**

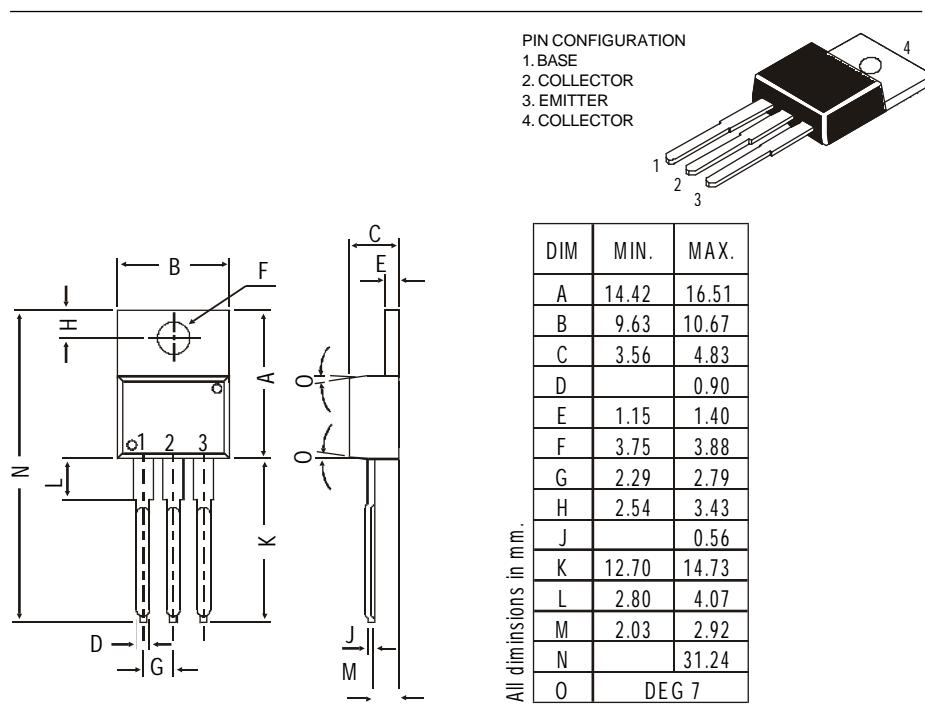
BD533, 535, 537

NPN PLASTIC POWER TRANSISTORS

BD534, 536, 538

PNP PLASTIC POWER TRANSISTORS

Medium Power Linear and Switching Applications



ABSOLUTE MAXIMUM RATINGS

		533	535	537		
		534	536	538		
Collector-base voltage (open emitter)	V_{CBO}	max.	45	60	80	V
Collector-emitter voltage (open base)	V_{CEO}	max.	45	60	80	V
Collector and emitter current	I_C, I_E	max.		8.0		A
Total power dissipation up to $T_C = 25^\circ C$	P_{tot}	max.		50		W
Junction temperature	T_j	max.		150		$^\circ C$
Collector-emitter saturation voltage $I_C = 2 A; I_B = 0.2 A$	V_{CESat}	max.		0.8		V
D.C. current gain $I_C = 10 mA; V_{CE} = 5 V$	h_{FE}	min.	20	20	15	

RATINGS (at $T_A=25^\circ C$ unless otherwise specified)

	533	535	537	
	534	536	538	

Collector-base voltage (open emitter)	V_{CBO}	max.	45	60	80	V
Collector-emitter voltage (open base)	V_{CEO}	max.	45	60	80	V
Collector-emitter voltage ($V_{BE} = 0$)	V_{CES}	max.	45	60	80	V
Emitter-base voltage (open collector)	V_{EBO}	max.		5.0		V
Collector and emitter current	I_C, I_E	max.		8.0		A

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<i>Base current</i>	I_B	<i>max.</i>	1.0	A
<i>Total power dissipation up to $T_C = 25^\circ C$</i>	P_{tot}	<i>max.</i>	50	W
<i>Junction temperature</i>	T_j	<i>max.</i>	150	$^\circ C$
<i>Storage temperature</i>	T_{stg}		-65 to +150	$^\circ C$

THERMAL RESISTANCE

<i>From junction to case</i>	R_{thj-c}		2.5	$^\circ C/W$
<i>From junction to ambient</i>	R_{thj-a}		70	$^\circ C/W$

CHARACTERISTICS

$T_{amb} = 25^\circ C$ unless otherwise specified		533	535	537
		534	536	538

Collector cutoff current

$I_E = 0; V_{CB} = 45 V$	I_{CBO}	<i>max.</i>	100	-	-	μA
$I_E = 0; V_{CB} = 60 V$	I_{CBO}	<i>max.</i>	-	100	-	μA
$I_E = 0; V_{CB} = 80 V$	I_{CBO}	<i>max.</i>	-	-	100	μA
$V_{BE} = 0; V_{CE} = 45V$	I_{CES}	<i>max.</i>	100	-	-	μA
$V_{BE} = 0; V_{CE} = 60V$	I_{CES}	<i>max.</i>	-	100	-	μA
$V_{BE} = 0; V_{CE} = 80V$	I_{CES}	<i>max.</i>	-	-	100	μA

Emitter cut-off current

$I_C = 0; V_{EB} = 5 V$	I_{EBO}	<i>max.</i>	1.0		mA
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Breakdown voltages

$I_C = 100 mA; I_B = 0$	$V_{CEO(sus)}^*$	<i>min.</i>	45	60	80	V
$I_C = 1 mA; I_E = 0$	V_{CBO}	<i>min.</i>	45	60	100	V
$I_E = 1 mA; I_C = 0$	V_{EBO}	<i>min.</i>		5.0		V

Saturation voltages

$I_C = 2.0 A; I_B = 0.2 A$	V_{CEsat}^*	<i>max.</i>	0.8		V
$I_C = 6.0 A; I_B = 0.6 A$	V_{CEsat}^*	<i>typ.</i>	0.8		V

Base-emitter on voltage

$I_C = 2A; V_{CE} = 2V$	$V_{BE(on)}^*$	<i>max.</i>	1.5		V
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D.C. current gain

$I_C = 10mA; V_{CE} = 5V$	h_{FE}^*	<i>min.</i>	20	20	15
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$I_C = 500mA; V_{CE} = 2V$	h_{FE}^*	<i>min.</i>	40		
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$I_C = 2A; V_{CE} = 2V$	h_{FE}^*	<i>min.</i>	25	25	15
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Transition frequency

$I_C = 500 mA; V_{CE} = 1V$	f_T	<i>min.</i>	3.0		MHz
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h_{FE} Groups:

$I_C = 2A; V_{CE} = 2V$	J	<i>min.</i>	30		
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<i>max.</i>	75			
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$I_C = 3A; V_{CE} = 2V$		<i>min.</i>	15		
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$I_C = 2A; V_{CE} = 2V$	K	<i>min.</i>	40		
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$I_C = 3A; V_{CE} = 2V$		<i>max.</i>	100		
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<i>min.</i>	20			
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* Pulsed: pulse duration = 300 μs ; duty cycle = 1.5%.

Notes

Disclaimer

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