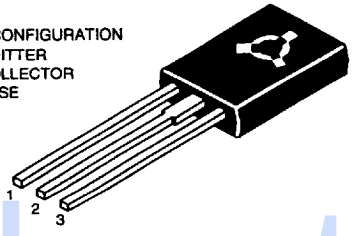
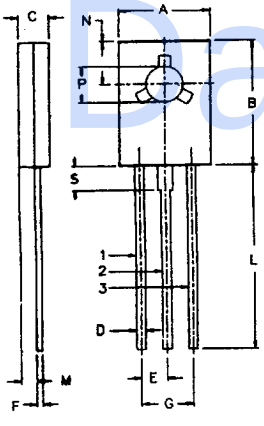
BD233, 235, 237 NPN PLASTIC POWER TRANSISTORS
BD234, 236, 238 PNP PLASTIC POWER TRANSISTORS

Medium Power Liner and Switching Applications





DIM	MIN.	MAX.
A	7.4	7.8
B	10.5	10.8
C	2.4	2.7
D	0.7	0.9
E	2.25 TYP.	
F	0.49	0.75
G	4.5 TYP.	
L	15.7 TYP.	
M	1.27 TYP.	
N	3.75 TYP.	
P	3.0	3.2
S	2.5 TYP.	

ALL DIMENSIONS IN MM

Datasheet.I

ABSOLUTE MAXIMUM RATINGS

			233 234	235 236	237 238	
Collector-base voltage (open emitter)	V_{CBO}	max.	45	60	100	V
Collector-emitter voltage (open base)	V_{CEO}	max.	45	60	80	V
Collector current	I_C	max.		2.0		A
Total power dissipation up to T_C = 25°C	P_{tot}	max.		25		W
Junction temperature	T_j	max.		150		°C
Collector-emitter saturation voltage						
I_C = 1 A; I_B = 0.1 A	V_{CEsat}	max.		0.6		V
D.C. current gain						
I_C = 150 mA; V_{CE} = 2 V	h_{FE}	min.		40		

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RATINGS (at T_A=25°C unless otherwise specified)

Limiting values			233 234	235 236	237 238	
Collector-base voltage (open emitter)	V_{CBO}	max.	45	60	100	V
Collector-emitter voltage (open base)	V_{CEO}	max.	45	60	80	V
Collector-emitter voltage (R_{BE} = 1KΩ)	V_{CER}	max.	45	60	100	V
Emitter-base voltage (open collector)	V_{EBO}	max.		5.0		V
Collector current	I_C	max.		2.0		A
Collector current (peak value)	I_{CM}	max.		6.0		A
Total power dissipation up to T_C = 25°C	P_{tot}	max.		25		W
Junction temperature	T_j	max.		150		°C
Storage temperature	T_{stg}			–65 to +150		°C

THERMAL RESISTANCE

From junction to case	$R_{th\ j-c}$			5.0		°C/W

CHARACTERISTICS

T_{amb} = 25°C unless otherwise specified

			233 234	235 236	237 238	
Collector cutoff current						
I_E = 0; V_{CB} = 45 V	I_{CBO}	max.	100	–	–	μA
I_E = 0; V_{CB} = 60 V	I_{CBO}	max.	–	100	–	μA
I_E = 0; V_{CB} = 100 V	I_{CBO}	max.	–	–	100	μA
I_E = 0; V_{CB} = 45 V; T_C = 150°C	I_{CBO}	max.	2.0	–	–	mA
I_E = 0; V_{CB} = 60 V; T_C = 150°C	I_{CBO}	max.	–	2.0	–	mA
I_E = 0; V_{CB} = 100 V; T_C = 150°C	I_{CBO}	max.	–	–	2.0	mA
Emitter cut-off current						
I_C = 0; V_{EB} = 5 V	I_{EBO}	max.		1.0		mA
Breakdown voltages						
I_C = 0.1 A; I_B = 0	$V_{CEO(sus)}$*	min.	45	60	80	V
I_C = 1 mA; I_E = 0	V_{CBO}	min.	45	60	100	V
I_E = 1 mA; I_C = 0	V_{EBO}	min.		5.0		V
Saturation voltage						
I_C = 1 A; I_B = 0.1 A	V_{CEsat}*	max.		0.6		V
Base-emitter on voltage						
I_C = 1 A; V_{CE} = 2 V	$V_{BE(on)}$*	max.		1.3		V
D.C. curent gain						
I_C = 150 mA; V_{CE} = 2 V	h_{FE}*	min.		40		
I_C = 1 A; V_{CE} = 2 V	h_{FE}*	min.		25		
Transition frequency						
I_C = 250 mA; V_{CE} = 10V	f_T	min.		3.0		MHz

* Pulse test: pulse duration = 300 μs; duty cycle ≤ 1.5%.

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