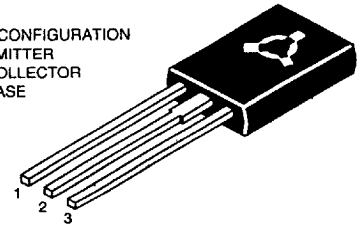
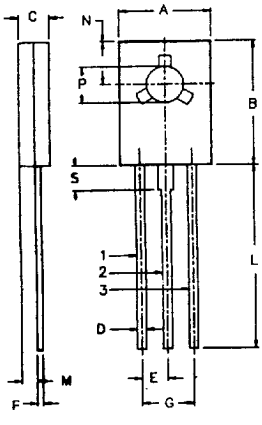
BD433, 435, 437 NPN PLASTIC POWER TRANSISTORS
BD434, 436, 438 PNP PLASTIC POWER TRANSISTORS

Medium power linear 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

ABSOLUTE MAXIMUM RATINGS

			433 434	435 436	437 438	
Collector-base voltage (open emitter)	V_{CBO}	max.	22	32	45	V
Collector-emitter voltage (open base)	V_{CEO}	max.	22	32	45	V
Collector current	I_C	max.		4.0		A
Total power dissipation up to T_C = 25°C	P_{tot}	max.		36		W
Junction temperature	T_j	max.		150		°C
Collector-emitter saturation voltage						
I_C = 2 A; I_B = 0.2 A	V_{CEsat}	max.	0.5	0.5	0.6	V
D.C. current gain						
I_C = 10 mA; V_{CE} = 5 V	h_{FE}	min.	40	40	30	

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

Limiting values

			433 434	435 436	437 438	
Collector-base voltage (open emitter)	V_{CBO}	max.	22	32	45	V
Collector-emitter voltage (open base)	V_{CEO}	max.	22	32	45	V
Collector Emitter voltage (V_{BE} = 0)	V_{CES}	max.	22	32*	45	V
Emitter-base voltage (open collector)	V_{EBO}	max.		5.0		V
Collector current	I_C	max.		4.0		A
Collector Current (Peak value t ≤ 10 ms)	I_{CM}	max.		7.0		A
Base current	I_B	max.		1.0		A
Total power dissipation up to T_C = 25°C	P_{tot}	max.		36		W
Junction temperature	T_j	max.		150		°C
Storage temperature	T_{stg}			−65 to +150		°C

THERMAL RESISTANCE

From junction to case	$R_{th\ j-c}$	3.5	°C/W
From junction to ambient	$R_{th\ j-a}$	100	°C/W

CHARACTERISTICS

T_{amb} = 25°C unless otherwise specified

			433 434	435 436	437 438	
Collector cutoff current						
I_E = 0; V_{CB} = 22 V	I_{CBO}	max.	100	–	–	μA
I_E = 0; V_{CB} = 32 V	I_{CBO}	max.	–	100	–	μA
I_E = 0; V_{CB} = 45 V	I_{CBO}	max.	–	–	100	μA
V_{BE} = 0; V_{CE} = 22 V	I_{CES}	max.	100	–	–	μA
V_{BE} = 0; V_{CE} = 32 V	I_{CES}	max.	–	100	–	μA
V_{BE} = 0; V_{CE} = 45 V	I_{CES}	max.	–	–	100	μA
Emitter cut-off current						
I_C = 0; V_{EB} = 5 V	I_{EBO}	max.		1.0		mA
Breakdown voltages						
I_C = 100 mA; I_B = 0	$V_{CEO(sus)}$*	min.	22	32	45	V
I_C = 1 mA; I_E = 0	V_{CBO}	min.	22	32	45	V
I_E = 1 mA; I_C = 0	V_{EBO}	min.		5.0		V
Saturation voltage						
I_C = 2 A; I_B = 0.2 A	V_{CEsat}*	max.	0.5	0.5	0.6	V
Base-emitter on voltage						
I_C = 10 mA; V_{CE} = 5 V	$V_{BE(on)}$*	typ.		0.58		V
I_C = 2 A; V_{CE} = 1 V	$V_{BE(on)}$*	max.	1.1	1.1	1.2	V
D.C. curent gain						
I_C = 10 mA; V_{CE} = 5 V	h_{FE}*	min.	40	40	30	
I_C = 500 mA; V_{CE} = 1 V	h_{FE}*	min.		85		
I_C = 2 A; V_{CE} = 1 V	h_{FE}*	min.	50	50	40	
Transition frequency						
I_C = 250 mA; V_{CE} = 1 V	f_T	min.		3.0		MHz

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