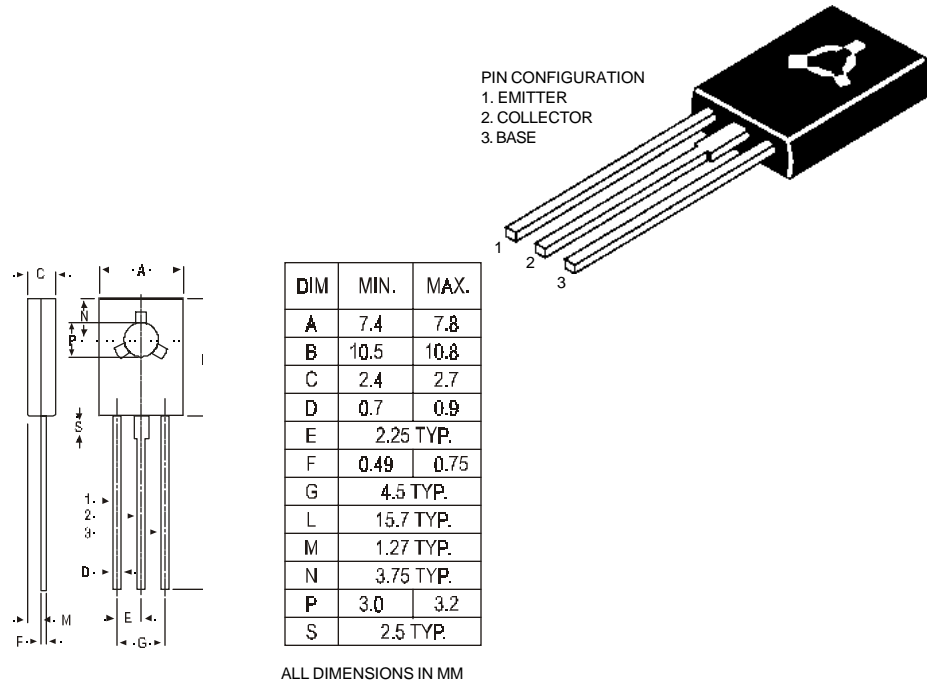


TO-126 (SOT-32) Plastic Package

BD433, BD435, BD437
BD434, BD436, BD438

BD433, 435, 437 NPN PLASTIC POWER TRANSISTORS
BD434, 436, 438 PNP PLASTIC POWER TRANSISTORS
Medium power linear and Switching Applications



ABSOLUTE MAXIMUM RATINGS

		433	435	437	
		434	436	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 $T_C = 25^\circ\text{C}$	P_{tot}	max.	36		W
Junction temperature	T_j	max.	150		$^\circ\text{C}$
Collector-emitter saturation voltage					
$I_C = 2\text{ A}; I_B = 0.2\text{ A}$	V_{CEsat}	max. 0.5	0.5	0.6	V
D.C. current gain					
$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	h_{FE}	min. 40	40	30	

**BD433, BD435, BD437
BD434, BD436, BD438**

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

Limiting values			433	435	437	
			434	436	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 $t \leq 10$ ms)	I_{CM}	max.		7.0		A
Base current	I_B	max.		1.0		A
Total power dissipation up to $T_C = 25^\circ\text{C}$	P_{tot}	max.		36		W
Junction temperature	T_j	max.		150		$^\circ\text{C}$
Storage temperature	T_{stg}			-65 to +150		$^\circ\text{C}$

THERMAL RESISTANCE

From junction to case	R_{thj-c}			3.5		$^\circ\text{C}/\text{W}$
From junction to ambient	R_{thj-a}			100		$^\circ\text{C}/\text{W}$

CHARACTERISTICS

$T_{amb} = 25^\circ\text{C}$ unless otherwise specified

			433	435	437	
			434	436	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. current 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%.

Disclaimer

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