



NPN BD433 – BD435 – BD437

SILICON NPN POWER TRANSISTORS.

The BD433-BD435-BD437 are NPN Transistors mounted in Jedec TO-126 plastic package. They are recommended for use in medium power linear and switching applications. PNP complements are BD434-BD436-BD438. Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	BD433	22	V
		BD435	32	
		BD437	45	
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	BD433	22	V
		BD435	32	
		BD437	45	
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)		5	V
I_C	Collector Current		4	A
I_{CM}	Collector Current Peak		7	
I_B	Base Current		1	A
P_C	Total power Dissipation	$T_C = 25^\circ\text{C}$	36	W
T_J	Junction Temperature		150	$^\circ\text{C}$
T_{Stg}	Storage Temperature		-65 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-c}	Thermal Resistance, Junction-Case	3.5	$^\circ\text{C/W}$
R_{thJ-a}	Thermal Resistance, Junction-ambient in free air	100	$^\circ\text{C/W}$

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit	
I_{CBO}	Collector cut-off current	$I_E = 0, V_{CB} = 22\text{ V}$	BD433	-	-	100	μA	
		$I_E = 0, V_{CB} = 32\text{ V}$	BD435					
		$I_E = 0, V_{CB} = 45\text{ V}$	BD437					
I_{CES}	Collector cut-off current	$V_{BE} = 0, V_{CE} = 22\text{ V}$	BD433	-	-	100		
		$V_{BE} = 0, V_{CE} = 32\text{ V}$	BD435					
		$V_{BE} = 0, V_{CE} = 45\text{ V}$	BD437					
I_{EBO}	Emitter cut-offcurrent	$I_C = 0$ $V_{EB} = 5\text{ V}$	BD433	-	-	1	mA	
			BD435					
			BD437					
$V_{CEO(SUS)}$	Collector-Emitter sustaning Voltage (*)	$I_B = 0$ $I_C = 100\text{ mA}$	BD433	22	-	-	V	
			BD435	32	-	-		
			BD437	45	-	-		
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = 2\text{ A}$ $I_B = 200\text{ mA}$	BD433	-	-	0.5	V	
			BD435			0.6		
			BD437					
V_{BE}	Base-Emitter Voltage(*)	$I_C = 2\text{ A}$ $V_{CE} = 1\text{ V}$	BD433	-	-	1.1	V	
			BD435			1.2		
			BD437					
h_{FE}	DC Current Gain (*)	$I_C = 10\text{ mA}$ $V_{CE} = 5\text{ V}$	BD433	40	-	130	-	
			BD435					
			BD437	30	-	130		
		$I_C = 500\text{ mA}$ $V_{CE} = 1\text{ V}$	BD433	85	-	140		
			BD435					
			BD437					
		$I_C = 2\text{ A}$ $V_{CE} = 1\text{ V}$	BD433	50	-	-		
			BD435					
			BD437	40	-	-		
f_T	Transition frequency	$I_C = 250\text{ mA}$ $V_{CE} = 1\text{ V}$	BD433	3	-	-	MHz	
			BD435					
			BD437					

1. Measured under pulse conditions : $t_P < 300 \mu\text{s}$, $\delta < 1.5$

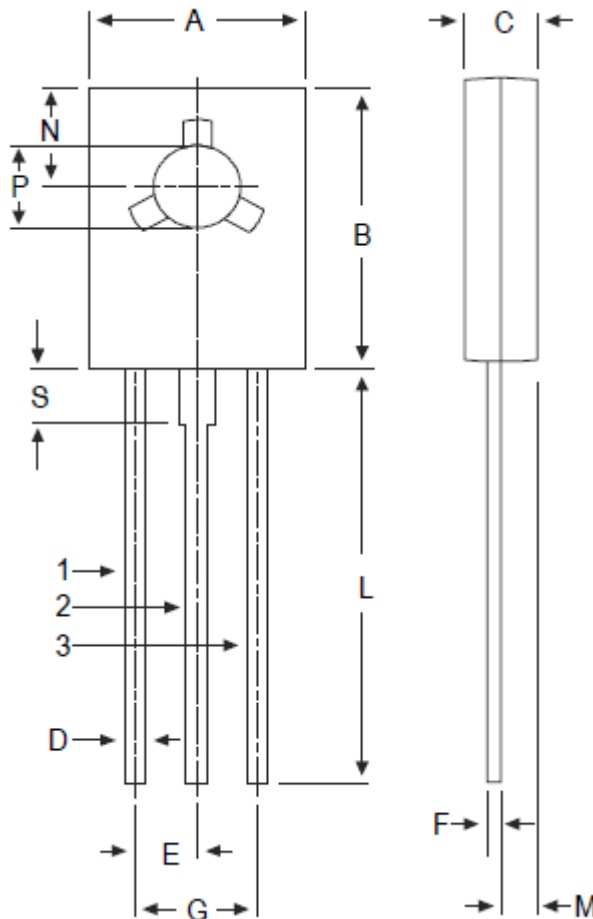


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MECHANICAL DATA CASE TO-126

	DIMENSIONS	
	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	4.4 typ.	
L	15.7 typ.	
M	1.27 typ.	
N	3.75 typ.	
P	3.0	3.2
S	2.54 typ.	

Pin 1 :	Emitter
Pin 2 :	Collector
Pin 3 :	Base



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