



BD440 – BD442

SILICON PNP POWER TRANSISTORS.

The BD440-BD442 are PNP Transistors mounted in Jedec TO-126 plastic package. They are recommended for use in medium power linear and switching applications. NPN complements are BD439-BD441. Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	BD440	-60
		BD442	-80
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	BD440	-60
		BD442	-80
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	$I_E = 0, V_{CB} = -60\text{ V}$	BD440	-	-	-100	μA
		$I_E = 0, V_{CB} = -80\text{ V}$	BD442				
I_{CES}	Collector cut-off current	$V_{BE} = 0, V_{CE} = -60\text{ V}$	BD440	-	-	-100	
		$V_{BE} = 0, V_{CE} = -80\text{ V}$	BD442				
I_{EBO}	Emitter cut-off current	$I_C = 0$	BD440	-	-	-1	mA
		$V_{EB} = -5\text{ V}$	BD442				
$V_{CEO(SUS)}$	Collector-Emitter sustaining Voltage (*)	$I_B = 0$	BD440	-60	-	-	V
		$I_C = -100\text{ mA}$	BD442	-80	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = -2\text{ A}$	BD440	-	-	-0.8	V
		$I_B = -200\text{ mA}$	BD442				
V_{BE}	Base-Emitter Voltage(*)	$I_C = -10\text{ mA}$	BD440	-	-0.58	-	V
		$V_{CE} = -5\text{ V}$	BD442				
		$I_C = -2\text{ A}$	BD440	-	-	-1.5	V
		$V_{CE} = -1\text{ V}$	BD442				
h_{FE}	DC Current Gain (*)	$I_C = -10\text{ mA}$	BD440	20	-	130	-
		$V_{CE} = -5\text{ V}$	BD442	15	-	130	
		$I_C = -500\text{ mA}$	BD440	40	-	140	
		$V_{CE} = -1\text{ V}$	BD442				
		$I_C = -2\text{ A}$	BD440	25	-	-	
		$V_{CE} = -1\text{ V}$	BD442	15	-	-	
f_T	Transition frequency	$I_C = -250\text{ mA}$	BD440	3	-	-	MHz
		$V_{CE} = -1\text{ V}$	BD442				

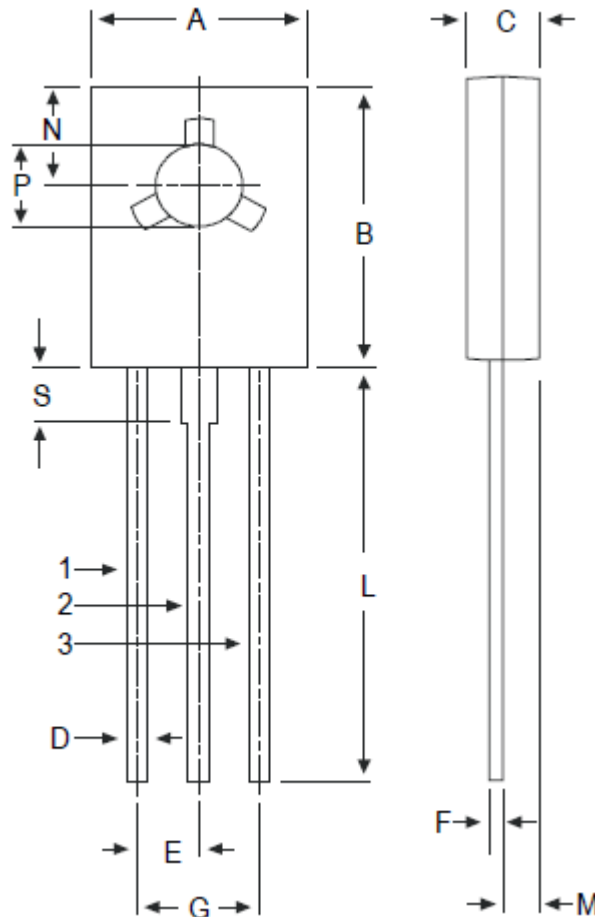
(*) Measured under pulse conditions : $t_p < 300\mu\text{s}$, $\delta < 1.5\%$

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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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