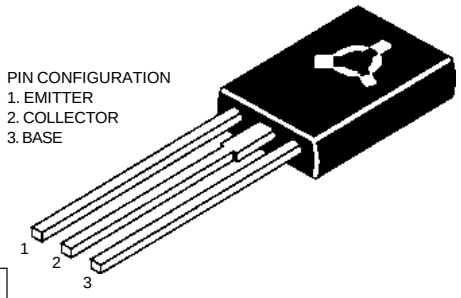
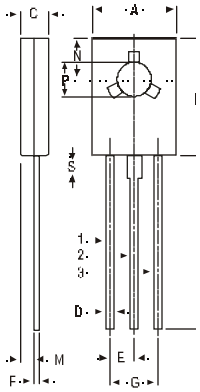
TO-126 (SOT-32) Plastic Package

BD175, BD177, BD179
BD176, BD178, BD180

BD175, 177, 179 NPN PLASTIC POWER TRANSISTORS
BD176, 178, 180 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

ABSOLUTE MAXIMUM RATINGS

			175 176	***177 178***	***179 180***	
Collector-base voltage (open emitter)	V_{CBO}	*max.*	*45*	*60*	*80*	*V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*45*	*60*	*80*	*V*
Collector current	I_C	*max.*		*3.0*		*A*
Total power dissipation up to T_C = 25°C	P_{tot}	*max.*		*30*		*W*
Junction temperature	T_j	*max.*		*150*		*°C*
Collector-emitter saturation voltage						
I_C = 1 A; I_B = 0.1 A	V_{CEsat}	*max.*		*0.8*		*V*
D.C. current gain						
I_C = 150 mA; V_{CE} = 2 V	h_{FE}	*min.*		*40*		

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

Limiting values			***175 177 179*** ***176 178 180***		
Collector-base voltage (open emitter)	V_{CBO}	*max.*	*45 60 80*		*V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*45 60 80*		*V*
Emitter-base voltage (open collector)	V_{EBO}	*max.*	*5.0*		*V*
Collector current	I_C	*max.*	*3.0*		*A*
Collector current (Peak value)	I_{CM}	*max.*	*7.0*		*A*
Total power dissipation up to T_C = 25°C	P_{tot}	*max.*	*30*		*W*
Junction temperature	T_j	*max.*	*150*		*°C*
Storage temperature	T_{stg}		*–65 to +150*		*°C*

THERMAL RESISTANCE

From junction to case	$R_{th\ j-c}$	*4.16*	*°C/W*

CHARACTERISTICS

T_{amb} = 25°C unless otherwise specified

			175 177 179 ***176 178 180***		
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} = 80 V	I_{CBO}	*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.*	*45*	*60*	*80*	*V*
I_C = 1 mA; I_E = 0	V_{CBO}	*min.*	*45*	*60*	*80*	*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.*	*0.8*		*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.*	*15*		
Transition frequency					
I_C = 250 mA; V_{CE} = 10V	f_T	*min.*	*3.0*		*MHz*
** ***h_{FE} classification**:*	***–6***	*min.*	*40*		
		max.	*100*		
	–10	*min.*	*63*		
		max.	*160*		
only BD175, 176	***–16***	*min.*	*100*		
		max.	*250*		

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

Notes

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/ CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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