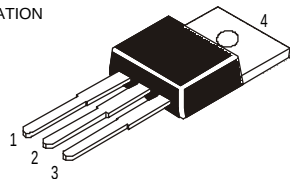
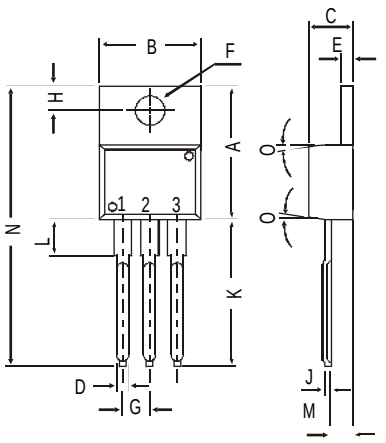
TO-220 Plastic Package

BD949, BD951, BD953, BD955
BD950, BD952, BD954, BD956

BD949, 951, 953, 955 NPN PLASTIC POWER TRANSISTORS
BD950, 952, 954, 956 PNP PLASTIC POWER TRANSISTORS
Power Amplifier and Switching Applications

PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR





All diminsions in mm.

DIM	MIN.	MAX.
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D		0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J		0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N		31.24
O	DEG 7	

ABSOLUTE MAXIMUM RATINGS

			949	***951***	***953***	***955***	
			950	***952***	***954***	***956***	
Collector-base voltage (open emitter)	V_{CBO}	*max.*	*60*	*80*	*100*	*120*	*V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*60*	*80*	*100*	*120*	*V*
Collector current	I_C	*max.*		*5.0*			*A*
Total power dissipation up to T_{mb} = 25°C	P_{tot}	*max.*		*40*			*W*
Junction temperature	T_j	*max.*		*150*			*°C*
Collector-emitter saturation voltage							
I_C = 2 A; I_B = 0.2 A	V_{CEsat}	*max.*		*1.0*			*V*
D.C. current gain							
I_C = 2 A; V_{CE} = 4 V	h_{FE}	*min.*		*20*			

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

Limiting values			***949***	***951***	***953***	***955***	
			950	***952***	***954***	***956***	
Collector-base voltage (open emitter)	V_{CBO}	*max.*	*60*	*80*	*100*	*120*	*V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*60*	*80*	*100*	*120*	*V*
Emitter-base voltage (open collector)	V_{EBO}	*max.*		*5.0*			*V*
Collector current	I_C	*max.*		*5.0*			*A*

Collector current (Peak value)	I_{CM}	*max.*	*8.0*	*A*
Total power dissipation upto T_{mb}=25°C	P_{tot}	*max.*	*40*	*W*
Junction temperature	T_j	*max.*	*150*	*°C*
Storage temperature	T_{stg}		*–65 to +150*	*°C*

THERMAL RESISTANCE

From junction to ambient	$R_{th\ j-a}$		*70*	*K /W*
From junction to mounting base	$R_{th\ j-mb}$		*3.12*	*K /W*

CHARACTERISTICS

T_{amb} = 25°C unless otherwise specified

			949 951 953 955	
			950 952 954 956	
Collector cutoff current				
I_E = 0; V_{CB} = V_{CBO}	I_{CBO}	*max.*	*50*	*µA*
I_E = 0; V_{CB} = ½ V_{CBO}; Tj = 150°C	I_{CBO}	*max.*	*1.0*	*mA*
I_B = 0; V_{CE} = ½ V_{CEO}	I_{CEO}	*max.*	*0.1*	*mA*
Emitter cut-off current				
I_C = 0; V_{EB} = 5 V	I_{EBO}	*max.*	*0.2*	*mA*
Breakdown voltages				
I_C = 1 mA; I_B = 0	V_{CEO}	*min.*	*60 80 100 120*	*V*
I_C = 1 mA; I_E = 0	V_{CBO}	*min.*	*60 80 100 120*	*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.*	*1.0*	*V*
Base emitter on voltage				
I_C = 2 A; V_{CE} = 4 V	$V_{BE(on)}$*	*max.*	*1.4*	*V*
D.C. current gain				
I_C = 0.5 A; V_{CE} = 4 V	h_{FE}*	*min.*	*40*	
I_C = 2 A; V_{CE} = 4 V	h_{FE}*	*min.*	*20*	
Transition frequency				
I_C = 0.5 A; V_{CE} = 4 V; f = 1 MHz	f_T	*min.*	*3*	*MHz*

Switching time

V_{CC} = 20 V; I_C = 1 A
I_{con} = 1A; I_{Bon} = –I_{Boff} = 0.1A
R_L = 20Ω

Turn on time	***NPN***	t_{on}	*typ.*	*0.3*	*µs*
Turn off time	***NPN***	t_{off}	*typ.*	*1.5*	*µs*
	PNP	t_{on}	*typ.*	*0.1*	*µs*
	PNP	t_{off}	*typ.*	*0.4*	*µs*

** Measured under pulse conditions: $t_p \leq 300\mu s$; duty cycle ≤ 2%*

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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CDIL is a registered Trademark of
Continental Device India Limited
C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290
e-mail sales@cdil.com www.cdil.com