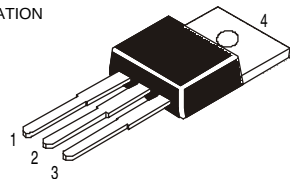
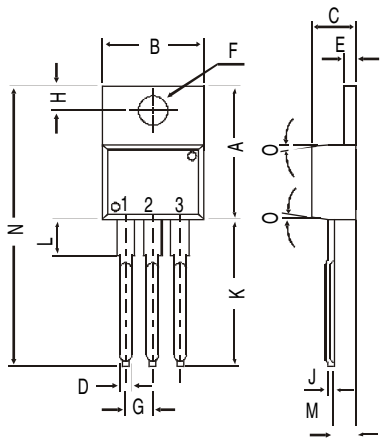
TO-220 Plastic Package

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:* $t_p \leq 300μs$*; duty cycle* $\leq 2\%$

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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