



Continental Device India Limited
An IS/ISO 9002 and IECQ Certified Manufacturer

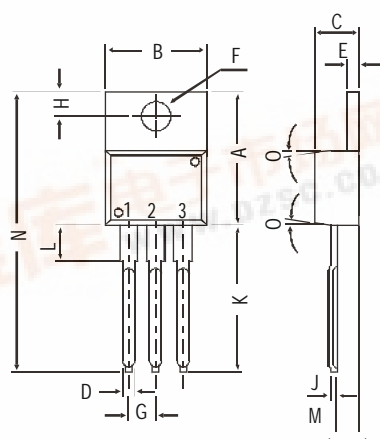
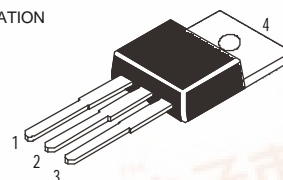


TO-220 Plastic Package

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



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	

All dimensions in mm.

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 $T_{mb} = 25^\circ\text{C}$	P_{tot}	max.		40		W
Junction temperature	T_j	max.		150		$^\circ\text{C}$
Collector-emitter saturation voltage						
$I_C = 2\text{ A}; I_B = 0.2\text{ A}$	V_{CEsat}	max.		1.0		V
D.C. current gain						
$I_C = 2\text{ A}; V_{CE} = 4\text{ V}$	h_{FE}	min.		20		

RATINGS (at $T_A=25^\circ\text{C}$ 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

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

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

$T_{amb} = 25^{\circ}C$ unless otherwise specified

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Collector cutoff current						
$I_E = 0; V_{CB} = V_{CBO}$	I_{CBO}	max.		50		μA
$I_E = 0; V_{CB} = \frac{1}{2} V_{CBO}; T_j = 150^{\circ}C$	I_{CBO}	max.		1.0		mA
$I_B = 0; V_{CE} = \frac{1}{2} V_{CEO}$	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

$V_{CC} = 20\ V; I_C = 1\ A$						
$I_{con} = 1A; I_{Bon} = -I_{Boff} = 0.1A$						
$R_L = 20\Omega$						
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 $\leq 2\%$

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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