

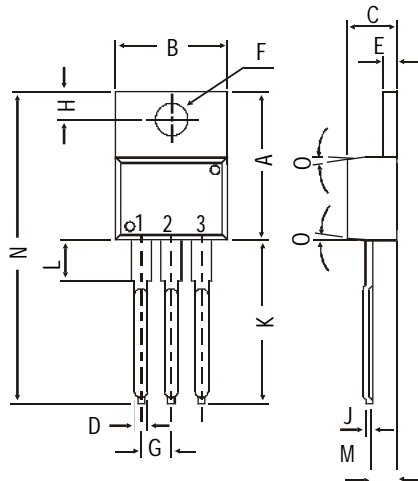
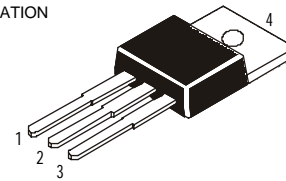
**TO-220 Plastic Package**

**CD909**

**CD909 NPN PLASTIC POWER TRANSISTOR**

*Power Linear 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**

Collector-base voltage (open emitter)  
 Collector-emitter voltage (open base)  
 Collector current  
 Total power dissipation up to  $T_C = 25^\circ C$   
 Junction temperature  
 Collector-emitter saturation voltage  
 $I_C = 4 A; I_B = 0.5 A$   
 D.C. current gain  
 $I_C = 1 A; V_{CE} = 4 V$

$V_{CBO}$	max.	100 V
$V_{CEO}$	max.	90 V
$I_C$	max.	12.0 A
$P_{tot}$	max.	75 W
$T_j$	max.	150 °C
$V_{CEsat}$	max.	1.0 V
$h_{FE}$	min	80
	max.	400

**RATINGS** (at  $T_A=25^\circ C$  unless otherwise specified)

Limiting values  
 Collector-base voltage (open emitter)  
 Collector-emitter voltage (open base)  
 Emitter-base voltage (open collector)  
 Collector current

$V_{CBO}$	max.	100 V
$V_{CEO}$	max.	90 V
$V_{EBO}$	max.	6.0 V
$I_C$	max.	12.0 A

Total power dissipation up to $T_C = 25^\circ\text{C}$	$P_{tot}$	max. 75 W
Junction temperature	$T_j$	max. 150 °C
Storage temperature	$T_{stg}$	-65 to +150 °C

**CHARACTERISTICS**

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

Collector cutoff current

$$I_E = 0; V_{CB} = 100\text{ V}$$

$$I_{CBO} \quad \text{max. } 100\ \mu\text{A}$$

Emitter cut-off current

$$I_C = 0; V_{EB} = 5\text{ V}$$

$$I_{EBO} \quad \text{max. } 1000\ \mu\text{A}$$

Breakdown voltages

$$I_C = 1\text{ mA}; I_B = 0$$

$$V_{CEO} \quad \text{min. } 90\text{ V}$$

$$I_C = 1\text{ mA}; I_E = 0$$

$$V_{CBO} \quad \text{min. } 100\text{ V}$$

$$I_E = 1\text{ mA}; I_C = 0$$

$$V_{EBO} \quad \text{min. } 6.0\text{ V}$$

Saturation voltages

$$I_C = 4\text{ A}; I_B = 0.5\text{ A}$$

$$V_{CEsat} \quad \text{max. } 1.0\text{ V}$$

$$V_{BEsat} \quad \text{max. } 1.5\text{ V}$$

Base emitter on voltage

$$I_C = 4\text{ A}; V_{CE} = 4\text{ V}$$

$$V_{BE(on)} \quad \text{max. } 1.5\text{ V}$$

D.C. current gain

$$I_C = 1\text{ A}; V_{CE} = 4\text{ V}$$

$$h_{FE} \quad \text{min. } 80$$

$$\quad \quad \quad \text{max. } 400$$

$$I_C = 10\text{ A}; V_{CE} = 4\text{ V}$$

$$h_{FE} \quad \text{min. } 5$$

Transition frequency

$$I_C = 0.3\text{ A}; V_{CE} = 3\text{ V}$$

$$f_T \quad \text{min. } 3\text{ MHz}$$

Output capacitance

$$I_E = 0; V_{CB} = 10\text{ V}$$

$$C_o \quad \text{typ. } 100\text{ pF}$$

Second breakdown collector current

with base forward biased (non-repetitive)

$$V_{CE} = 21.5\text{ V}; t = 50\text{ ms}$$

$$I_{S/b} \quad \text{typ. } 3.5\text{ A}$$

## 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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