

TO-220 Plastic Package

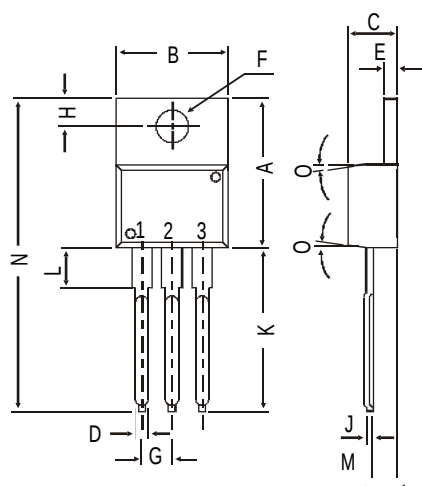
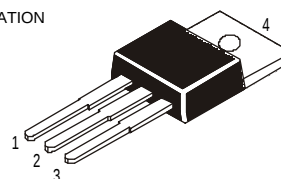
2N6109

2N6109 PNP PLASTIC POWER TRANSISTOR

General Purpose Amplifier and Switching Application

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)

V_{CBO} max. 60 V

Collector-emitter voltage (open base)

V_{CEO} max. 50 V

Collector current

I_C max. 7.0 A

Total power dissipation up to $T_C = 25^\circ\text{C}$

P_{tot} max. 40 W

Junction temperature

T_j max. 150 $^\circ\text{C}$

Collector-emitter saturation voltage

V_{CEsat} max. 1.0 V

$I_C = 2.5\text{A}; I_B = 0.25\text{A}$

D.C. current gain

h_{FE} min. 30
max. 150

$I_C = 2.5\text{A}; V_{CE} = 4\text{V}$

RATINGS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Limiting values

Collector-base voltage (open emitter)

V_{CBO} max. 60 V

Collector-emitter voltage (open base)

V_{CEO} max. 50 V

Emitter-base voltage (open collector)

V_{EBO} max. 5.0 V

Collector current

I_C max. 7.0 A

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Collector current (Peak value)	I_C	max.	10 A
Base current	I_B	max.	3.0 A
Total power dissipation up to $T_C = 25^\circ\text{C}$	P_{tot}	max.	40 W
Derate above 25°C		max.	0.32 W/ $^\circ\text{C}$
Junction temperature	T_j	max.	150 $^\circ\text{C}$
Storage temperature	T_{stg}		-65 to +150 $^\circ\text{C}$

THERMAL CHARACTERISTICS

From junction to case	$R_{th\ j-c}$		3.125 $^\circ\text{C/W}$
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CHARACTERISTICS

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

Collector cutoff current

$I_B = 0$; $V_{CE} = 40\text{V}$

$V_{EB(off)} = 1.5\text{V}$; $V_{CE} = 60\text{V}$

$V_{EB(off)} = 1.5\text{V}$; $V_{CE} = 50\text{V}$; $T_C = 150^\circ\text{C}$

Emitter cut-off current

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

Breakdown voltages

$I_C = 100\text{ mA}$; $I_B = 0$

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

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

Saturation voltages

$I_C = 2.5\text{ A}$; $I_B = 0.25\text{ A}$

$I_C = 7\text{ A}$; $I_B = 3\text{ A}$

Base emitter on voltages

$I_C = 2.5\text{ A}$; $V_{CE} = 4\text{V}$

$I_C = 7\text{ A}$; $V_{CE} = 4\text{V}$

D.C. current gain

$I_C = 2.5\text{ A}$; $V_{CE} = 4\text{V}$

$I_C = 7\text{ A}$; $V_{CE} = 4\text{V}$

Small-signal current gain $f = 50\text{ KHz}$

$I_C = 0.5\text{ A}$; $V_{CE} = 4\text{V}$

Output capacitance at $f = 1\text{ MHz}$

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

Transition frequency at $f = 1\text{ MHz}$

$I_C = 500\text{ mA}$; $V_{CE} = 4\text{V}$

I_{CEO}	max.	1.0 mA
I_{CEX}	max.	0.1 mA
I_{CEX}	max.	2.0 mA

I_{EBO}	max.	1.0 mA
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$V_{CEO(sus)}^*$	min.	50 V
V_{CBO}	min.	60 V
V_{EBO}	min.	5.0 V

V_{CEsat}^*	max.	1.0 V
V_{CEsat}^*	max.	3.5 V

$V_{BE(on)}^*$	max.	1.5 V
$V_{BE(on)}^*$	max.	3.0 V

h_{FE}^*	min.	30
	max.	150

h_{FE}^*	min.	2.3
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h_{fe}	min.	20
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C_o	max.	250 pF
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$f_T (1)$	min.	10 MHz
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* Pulse test: pulse width $\leq 300\text{ }\mu\text{s}$; duty cycle $\leq 2\%$.

(1) $f_T = |h_{fe}| \cdot f_{test}$

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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