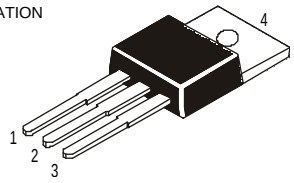
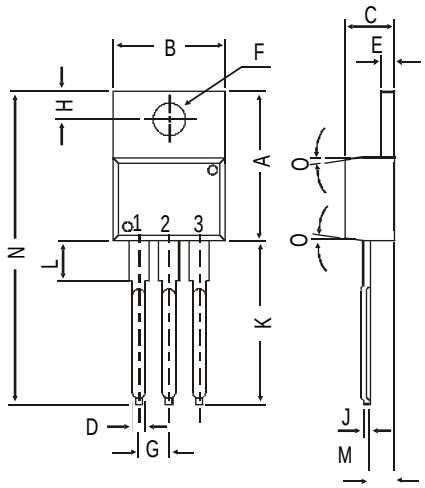
TO-220 Plastic Package **2N6109**

2N6109 PNP PLASTIC POWER TRANSISTOR

General Purpose Amplifier and Switching Application

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





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

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°C	P_{tot}	*max.*	*40 W*
Junction temperature	T_j	*max.*	*150 °C*
Collector-emitter saturation voltage			
I_C = 2.5A; I_B = 0.25A	V_{CEsat}	*max.*	*1.0 V*
D.C. current gain			
I_C = 2.5A; V_{CE} = 4V	h_{FE}	*min.*	*30*
		max.	*150*

RATINGS *(at T_A=25°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*

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°C	P_{tot}	*max.*	*40 W*
Derate above 25°C		*max.*	*0.32 W/°C*
Junction temperature	T_j	*max.*	*150 °C*
Storage temperature	T_{stg}		*–65 to +150 °C*

THERMAL CHARACTERISTICS

From junction to case	$R_{th\ j-c}$		*3.125 °C/W*

CHARACTERISTICS

T_{amb} = 25°C unless otherwise specified

Collector cutoff current			
I_B = 0; V_{CE} = 40V	I_{CEO}	*max.*	*1.0 mA*
$V_{EB(off)}$ = 1.5V; V_{CE} = 60V	I_{CEX}	*max.*	*0.1 mA*
$V_{EB(off)}$ = 1.5V; V_{CE} = 50V; T_C = 150°C	I_{CEX}	*max.*	*2.0 mA*
Emitter cut-off current			
I_C = 0; V_{EB} = 5V	I_{EBO}	*max.*	*1.0 mA*
Breakdown voltages			
I_C = 100 mA; I_B = 0	$V_{CEO(sus)}$*	*min.*	*50 V*
I_C = 1 mA; I_E = 0	V_{CBO}	*min.*	*60 V*
I_E = 1 mA; I_C = 0	V_{EBO}	*min.*	*5.0 V*
Saturation voltages			
I_C = 2.5 A; I_B = 0.25 A	V_{CEsat}*	*max.*	*1.0 V*
I_C = 7 A; I_B = 3 A	V_{CEsat}*	*max.*	*3.5 V*
Base emitter on voltages			
I_C = 2.5A; V_{CE} = 4V	$V_{BE(on)}$*	*max.*	*1.5 V*
I_C = 7A; V_{CE} = 4V	$V_{BE(on)}$*	*max.*	*3.0 V*
D.C. current gain			
I_C = 2.5A; V_{CE} = 4V	h_{FE}*	*min.*	*30*
		max.	*150*
I_C = 7A; V_{CE} = 4V	h_{FE}*	*min.*	*2.3*
Small-signal current gain f = 50 KHz			
I_C = 0.5A; V_{CE} = 4V	h_{fe}	*min.*	*20*
Output capacitance at f = 1 MHz			
I_E = 0; V_{CB} = 10V	C_o	*max.*	*250 pF*
Transition frequency at f = 1 MHz			
I_C = 500 mA; V_{CE} = 4V	f_T (1)	*min.*	*10 MHz*

** Pulse test: pulse width ≤ 300 µs; duty cycle ≤ 2%.*

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

Notes

Disclaimer

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