

TO-220 Plastic Package

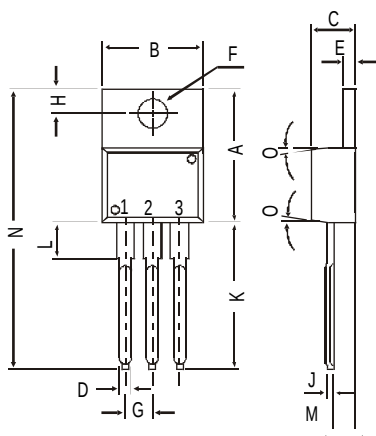
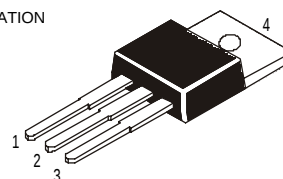
2N6101

2N6101 NPN PLASTIC POWER TRANSISTOR

Medium Power Linear and Switching Service in Consumer, Automotive, and Industrial Applications

PIN CONFIGURATION

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



All dimensions 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
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ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)

V_{CBO} max. 80 V

Collector-emitter voltage (open base)

V_{CEO} max. 70 V

Collector current

I_C max. 10 A

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

P_{tot} max. 75 W

Junction temperature

T_j max. 150 °C

Collector-emitter saturation voltage

$I_C = 10\text{ A}; I_B = 2\text{ A}$

V_{CEsat} max. 2.5 V

D.C. current gain

$I_C = 5\text{ A}; V_{CE} = 4\text{ V}$

h_{FE} min. 20
max. 80

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

Limiting values

Collector-base voltage (open emitter)

V_{CBO} max. 80 V

Collector-emitter voltage (open base)

V_{CEO} max. 70 V

Collector-emitter voltage ($R_{BE} = 100\Omega$)

V_{CER} max. 75 V

Emitter-base voltage (open collector)

V_{EBO} max. 8.0 V

Collector current

I_C max. 10 A

Base current

I_B max. 4 A

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Total power dissipation up to $T_C = 25^\circ\text{C}$	P_{tot}	max.	75 W
Derate above 25°C		max.	0.6 W/ $^\circ\text{C}$
Total power dissipation up to $T_A = 25^\circ\text{C}$	P_{tot}	max.	1.8 W
Derate above 25°C		max.	0.0144 W/ $^\circ\text{C}$
Junction temperature	T_j	max.	150 $^\circ\text{C}$
Storage temperature	T_{stg}		-65 to +150 $^\circ\text{C}$

THERMAL RESISTANCE

From junction to ambient	$R_{th\ j-a}$		70 $^\circ\text{C/W}$
From junction to case	$R_{th\ j-c}$		1.67 $^\circ\text{C/W}$

CHARACTERISTICS

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

Collector cutoff current

$V_{BE} = 1.5\text{ V}; V_{CE} = 75\text{ V}$	I_{CEX}	max.	2.0 mA
$V_{BE} = 1.5\text{ V}; V_{CE} = 75\text{ V}; T_C = 150^\circ\text{C}$	I_{CEX}	max.	10 mA
$I_B = 0; V_{CE} = 60\text{ V}$	I_{CEO}	max.	2.0 mA

Emitter cut-off current

$I_C = 0; V_{EB} = 8\text{ V}$	I_{EBO}	max.	1.0 mA
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Breakdown voltages

$I_C = 200\text{ mA}; I_B = 0$	$V_{CEO(sus)}^*$	min.	70 V
$I_C = 1\text{ mA}; I_E = 0$	V_{CBO}	min.	80 V
$I_E = 1\text{ mA}; I_C = 0$	V_{EBO}	min.	8.0 V

Saturation voltage

$I_C = 10\text{ A}; I_B = 2\text{ A}$	V_{CEsat}^*	max.	2.5 V
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Base emitter on voltage

$I_C = 5\text{ A}; V_{CE} = 4\text{ V}$	$V_{BE(on)}^*$	max.	1.7 V
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D.C. current gain

$I_C = 5\text{ A}; V_{CE} = 4\text{ V}$	h_{FE}^*	min.	20
		max.	80

$I_C = 10\text{ A}; V_{CE} = 4\text{ V}$	h_{FE}^*	min.	5.0
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Small signal current gain

$I_C = 0.5\text{ A}; V_{CE} = 4\text{ V}; f = 0.1\text{ MHz}$	$ h_{fe} $	min.	8.0
		max.	28

$I_C = 0.5\text{ A}; V_{CE} = 4\text{ V}; f = 1\text{ KHz}$	h_{fe}	min.	15
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* Pulsed: pulse duration = 300 μs ; Duty factor = 0.018.

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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