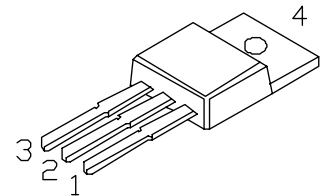


Bipolar Transistor



Features:

- High DC Current Gain
- Collector-Emitter Sustaining Voltage: $V = 100V$ Min
- Monolithic Construction with Built-in Base-Emitter Shunt Resistors

Pin Configuration:

1. Base
2. Collector
3. Emitter
4. Collector

Absolute Maximum Ratings:

Parameters	Symbol	Unit
Collector Emitter Voltage	V_{CEO}	100V
Collector-Base Voltage	V_{CBO}	
Emitter-Base Voltage	V_{EBO}	5V
Collector Current	I_C	8A
Collector Peak Current	I_{CM}	16A
Base Current	I_B	120mA
Total Power Dissipation upto $T_c = 25^\circ C$ Derate above $25^\circ C$	P_{tot}	75W 0.6W/ $^\circ C$
Total Power Dissipation upto $T = 25^\circ C$ Derate above $25^\circ C$		2.2W 0.0175W/ $^\circ C$
Operating Junction Temperature Range	T_j	-65° to $+150^\circ C$
Storage Temperature Range	T_{stg}	-65° to $+150^\circ C$
Thermal Resistance, Junction-to-Case	$R_{th(j-c)}$	1.67 $^\circ C/W$
Thermal Resistance, Junction-to-Ambient	$R_{th(j-a)}$	57 $^\circ C/W$

Bipolar Transistor



Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
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OFF Characteristics

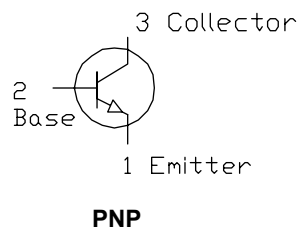
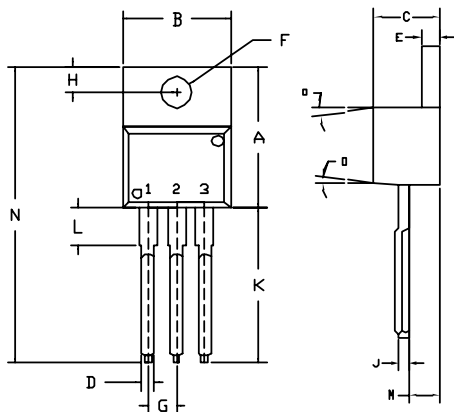
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100\text{mA}, I_B = 0$	100	-	-	V
Collector Cutoff Current	I_{CEO}	$I_C = 0; V_{EB} = 100\text{V}$	-	-	20	μA
	I_{CEX}	$V_{CE} = 100\text{V}, V_{BE(OFF)} = 1.5\text{V}$	-	-	20	μA
		$V_{CB} = 100\text{V}, V_{BE(OFF)} = 1.5\text{V}$ $T_C = 150^\circ\text{C}$	-	-	0.2	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 5\text{V}, I_C = 0$	-	-	2	mA

ON Characteristics

DC Current Gain	h_{FE}	$I_C = 3\text{A}, V_{CE} = 4\text{V}$	1,000	-	20,000	-
		$I_C = 8\text{A}, V_{CE} = 4\text{V}$	100	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 3\text{A}, I_B = 12\text{mA}$	-	-	2	V
		$I_C = 8\text{A}, I_B = 80\text{mA}$	-	-	4	V
Base-Emitter ON Voltage	$V_{BE(ON)}$	$I_C = 4\text{A}, V_{CE} = 4\text{V}$	-	-	2.8	V

Dynamic Characteristics

Small-Signal Current Gain	$ h_{FEf} $	$I_C = 3\text{A}, V_{CE} = 4\text{V}, f = 1\text{MHz}$	4	-	-	-
Output Capacitance	C_{OB}	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$	-	-	300	pF



Pin Configuration:

1. Base
2. Collector
3. Emitter
4. Collector

Dimensions	Min.	Max.
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D	-	0.9
E	1.15	1.4
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J	-	0.56
K	12.7	14.73
L	2.8	4.07
M	2.03	2.92
N	-	31.24
O	7°	

Dimensions : Millimetres

Part Number Table

Description	Part Number
Bipolar Transistor, PNP, TO-220	2N6042

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