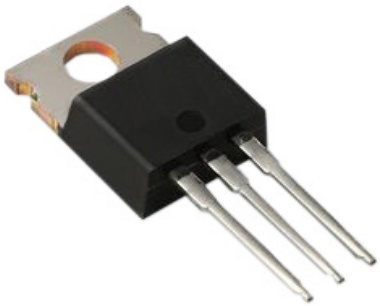
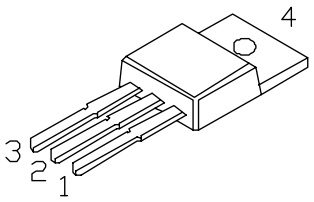
Bipolar Transistor

RoHS Compliant





Pin Configuration:
1. Base
2. Collector
3. Emitter
4. Collector

Features:

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

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°C Derate above 25°C	P_{tot}	75W 0.6W/°C
Total Power Dissipation upto T = 25°C Derate above 25°C		2.2W 0.0175W/°C
Operating Junction Temperature Range	T_j	-65° to +150°C
Storage Temperature Range	T_{stg}	-65° to +150°C
Thermal Resistance, Junction-to-Case	$R_{th\ (j-c)}$	1.67°C/W
Thermal Resistance, Junction-to-Ambient	$R_{th\ (j-a)}$	57°C/W

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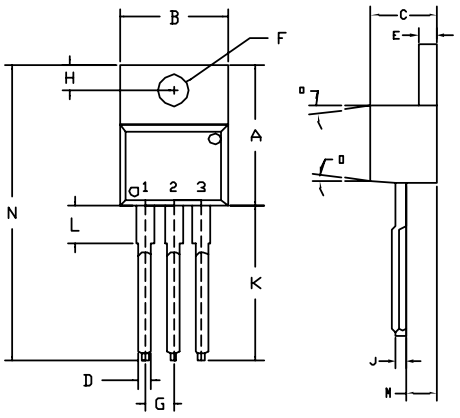
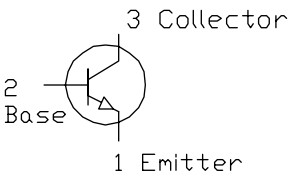
Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
OFF Characteristics						
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	I_C = 100mA, I_B = 0	100	-	-	V
Collector Cutoff Current	I_{CEO}	I_C = 0; V_{EB} = 100V	-	-	20	uA
	I_{CEX}	V_{CE} = 100V, $V_{BE(OFF)}$ = 1.5V	-	-	20	µA
		V_{CB} = 100V, $V_{BE(OFF)}$ = 1.5V T_C = 150°C	-	-	0.2	mA
Emitter Cutoff Current	I_{EBO}	V_{BE} = 5V, I_C = 0	-	-	2	mA
ON Characteristics						
DC Current Gain	h_{FE}	I_C = 3A, V_{CE} = 4V	1,000	-	20,000	-
		I_C = 8A, V_{CE} = 4V	100	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C = 3A, I_B = 12mA	-	-	2	V
		I_C = 8A, I_B = 80mA	-	-	4	V
Base-Emitter ON Voltage	$V_{BE(ON)}$	I_C = 4A, V_{CE} = 4V	-	-	2.8	V
Dynamic Characteristics						
Small-Signal Current Gain	$\|h_{EF}\|$	I_C = 3A, V_{CE} = 4V, f =1MHz	4	-	-	-
Output Capacitance	C_{OB}	V_{CB} = 10V, I_E = 0, f = 0.1MHz	-	-	300	pF





NPN

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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