# **Power Transistor**





## **Description:**

Plastic PNP TO-220 silicon power transistor is designed for various specific and general purpose applications such as output and driver stages of amplifiers operating at frequencies from DC to greater than 1MHz series shunt and switching regulators low and high frequency inverters/converters and many others.

#### Features:

- · Very low collector saturation voltage
- Excellent linearity
- Fast switching

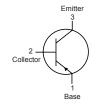
# **Absolute Maximum Ratings**

Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	45	
Collector-Base Voltage	V <sub>CES</sub>	45	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	
Continuous Collector Current	I <sub>C</sub>	10	Α
Base Current	I <sub>B</sub>	2	Α
Total Device Dissipation at T <sub>c</sub> = 25°C Derate above 25°C	P <sub>D</sub>	50 0.4	W W/°C
Operating and Storage Junction Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	-55 to +150	°C

# RoHS Compliant

**PNP** 





#### **Pin Configuration:**

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

### **Electrical Characteristics** (T<sub>a</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
OFF Characteristics					
Collector - Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =30mA, I <sub>B</sub> =0	45	-	V
Collector Cut-Off Current	I <sub>CES</sub>	V <sub>CE</sub> =45V, V <sub>BE</sub> =0	V <sub>BE</sub> =0 - 10		
Emitter Cut-Off Current	I <sub>EBO</sub>	$V_{EB}$ =5V, $I_{C}$ =0	-	100	μA
ON Characteristics			,		
DC Current Gain	2	V <sub>CE</sub> =1V, I <sub>C</sub> =2A	60	-	-
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =4A	40	-	-
Collector - Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =8A, I <sub>B</sub> =400mA	-	1	V
					. v

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Base - Emitter Saturation Voltage



1.5

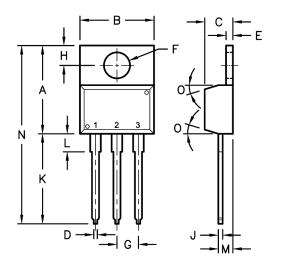
 $I_{C}$ =8A,  $I_{B}$ =800mA

# **Power Transistor**



## Electrical Characteristics (T<sub>a</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Small-Signal Characteristics		•		•	
Current Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =500mA, f=0.5MHz	12	-	MHz
Output Capacitance	C <sub>obo</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz	400	-	pF
Switching Characteristics					
Rise Time	t <sub>r</sub>		-	0.6	
Storage Time	t <sub>s</sub>	I <sub>C</sub> =5A, I <sub>B1</sub> =I <sub>B2</sub> =500mA	-	1.2	μΑ
Fall Time	t,		_	0.5	



#### Pin Configuration:

- 1. Base
- 2. Collector
- 3. Emitter

Dimensions	Α	В	С	D	E	F	G	Н	J	K	L	М	N	0
Min.	14.42	9.63	3.56	-	1.15	3.75	2.29	2.54	-	12.7	2.8	2.03	-	70
Max.	16.51	10.67	4.83	0.9	1.4	3.88	2.79	3.43	0.56	14.73	4.07	2.92	31.24	<i>'</i>

Dimensions: Millimetres

#### **Part Number Table**

Description	Part Number			
Transistor, PNP, 20A, 45V, TO-220	D45H5			

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