Bipolar Transistor

multicomp PRO

RoHS Compliant

NPN

Description:

Plastic NPN 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

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

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	80	
Collector-Base Voltage	V_{CES}	80	V
Emitter-Base Voltage	V_{EBO}	5	
Continuous Collector Current	I_C	10	A
Base Current	I_B	2	A
Total Device Dissipation at T_c = 25°C Derate above 25°C	P_D	50 0.4	W W/°C
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-65 to +150	°C
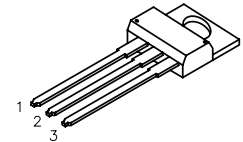
Electrical Characteristics (T_a = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
OFF Characteristics					
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=30mA, I_B=0	80	-	V
Collector Cut-Off Current	I_{CES}	V_{CE}=80V, V_{BE}=0	-	10	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=5V, I_C=0	-	100	
ON Characteristics					
DC Current Gain	h_{FE}	V_{CE}=1V, I_C=2A	35	-	-
		V_{CE}=1V, I_C=4A	20	-	-
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=8A, I_B=800mA	-	1	V
Base - Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=8A, I_B=800mA		1.5	

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Electrical Characteristics (T$_a$ = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Small-Signal Characteristics					
Current Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=500mA, f=0.5MHz	15	-	MHz
Output Capacitance	C_{obo}	V_{CB}=10V, I_E=0, f=1MHz	220	-	pF
Switching Characteristics					
Rise Time	t_r	I_C=5A, I_{B1}=I_{B2}=500mA	-	0.5	µA
Storage Time	t_s		-	1	
Fall Time	t_f		-	0.4	
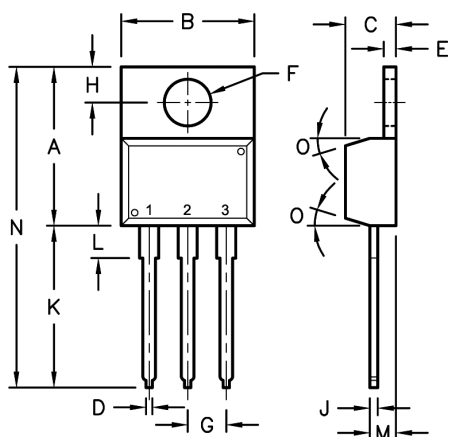
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Dimensions	A	B	C	D	E	F	G	H	J	K	L	M	N	O
Min.	14.42	9.63	3.65	-	1.15	3.75	2.29	2.54	-	12.7	2.8	2.03	-	7°
Max.	16.51	10.67	4.83	0.9	1.4	3.88	2.79	3.43	0.56	14.73	4.07	2.92	31.24	

Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, NPN, 10A, 80V, TO-220	D44H10

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
Element14.com/multicomp-pro

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