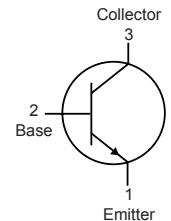


Bipolar Transistor



Description:

This TO-126 plastic silicon epitaxial base NPN power transistor intended for use in power linear and switching applications.



Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	80	V
Collector-Base Voltage	V_{CBO}	80	
Emitter-Base Voltage	V_{EBO}	5	
Continuous Collector Current	I_C	4	A
Total Device Dissipation at $T_c = 25^\circ\text{C}$	P_D	36	W
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-65 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
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OFF Characteristics

Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=100\text{mA}, I_B=0$	80	-	V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=80\text{V}, I_B=0$	-	100	μA
	I_{CES}	$V_{CE}=80\text{V}, V_{BE}=0$	-	100	
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$	-	1	mA

ON Characteristics

DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=10\text{mA}$	15	-	-
		$V_{CE}=1\text{V}, I_C=500\text{mA}$	40	-	-
		$V_{CE}=1\text{V}, I_C=2\text{A}$	15	-	-
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2\text{A}, I_B=0.2\text{A}$	-	0.8	V
Base - Emitter On Voltage	$V_{BE(on)}$	$I_C=2\text{A}, V_{CE}=1\text{V}$	-	1.5	

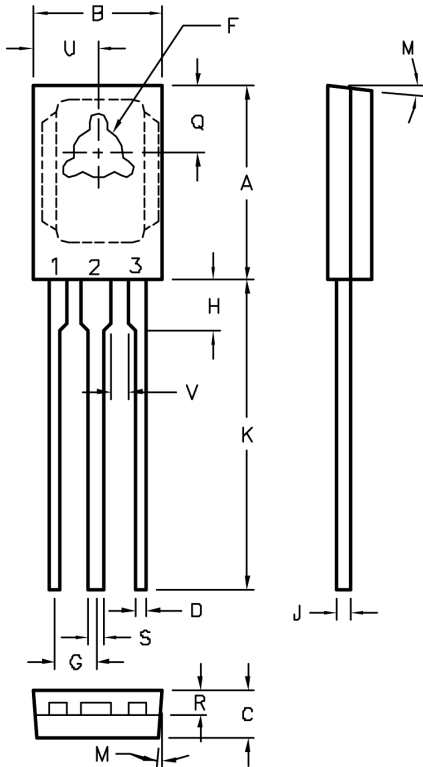
Small-Signal Characteristics

Current Gain-Bandwidth Product	f_T	$V_{CE}=1\text{V}, I_C=250\text{mA}$	3	-	MHz
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Note 1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

Note 2. f_T is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.

Bipolar Transistor



Dimensions	Min.	Max.
A	10.8	11.05
B	7.49	7.75
C	2.41	2.67
D	0.51	0.66
F	2.92	3.18
G	2.31	2.46
H	1.27	2.41
J	0.38	0.64
K	15.11	16.64
M	3° Typical	
Q	3.76	4.01
R	1.14	1.4
S	0.64	0.89
U	3.68	3.94
V	1.02	-

Dimensions : Millimetres

Pin Configuration:

1. Emitter
2. Base
3. Collector

Part Number Table

Description	Part Number
Transistor, NPN, 4A, 80V, TO-126	BD441

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