

2N5416

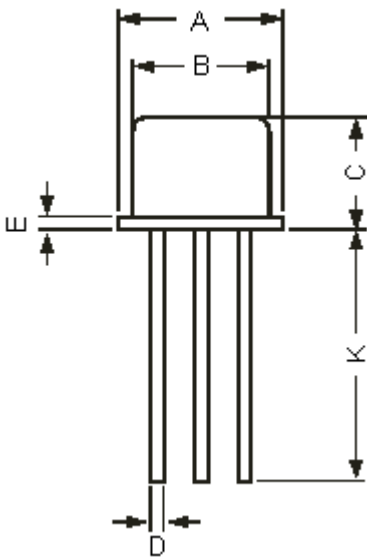
PNP High Voltage Transistors



Features:

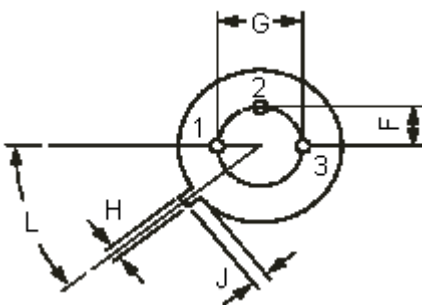
- PNP Silicon High Voltage Transistor.
- High speed switching and linear amplifier appliances in Military, Industrial and Commercial Equipment.

TO-39 Metal Can Package



Dimensions	Minimum	Maximum
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	-
L	42°	48°

Dimensions : Millimetres



Pin Configuration

1. Emitter
2. Base
3. Collector



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Absolute Maximum Rating ($T_a = 25^\circ\text{C}$ unless specified otherwise)

Description	Symbol	2N5416	Units
Collector Emitter Voltage	V_{CEO}	300	V
Collector Base Voltage	V_{CBO}	350	
Emitter Base Voltage	V_{EBO}	6	
Collector Current Continuous	I_C	1	A
Base Current Continuous	I_B	0.5	
Power Dissipation at $T_a = 50^\circ\text{C}$ Derate above 25°C	P_D	1	W mW/ $^\circ\text{C}$
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above 25°C		10	W
Junction Temperature	T_j	200	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_{stg}	-65 to +200	$^\circ\text{C}$
Thermal Resistance			
Junction to Ambient	$R_{th(j-a)}$	150	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	17.5	

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

Description	Symbol	Test Condition	2N5416	Units
Collector Emitter Breakdown Voltage	$BV_{CEO(sus)}^*$	$I_C = 50\text{mA}, I_B = 0$	>300	V
Collector Cut off Current	I_{CBO}	$V_{CB} = 280\text{V}, I_E = 0$	<50	μA
Collector Cut off Current	I_{CEO}	$V_{CE} = 250\text{V}, I_B = 0$		
Emitter Cut off Current	I_{EBO}	$V_{EB} = 6\text{V}, I_C = 0$		
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$	<2	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$	<1.5	
DC Current Gain	h_{FE}^*	$I_C = 50\text{mA}, V_{CE} = 10\text{V}$	30 - 120	-

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

Description	Symbol	Test Condition	2N5416	Units
Dynamic Characteristics				
Small Signal Current Gain	$ h_{fe} $	$I_C = 5\text{mA}$, $V_{CE} = 10\text{V}$, $f = 1\text{kHz}$	>25	-
Transition Frequency	f_T	$I_C = 10\text{mA}$, $V_{CE} = 10\text{V}$, $f = 5\text{MHz}$	>15	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$	<15	pF
Input Capacitance	C_{ib}	$V_{EB} = V_{EBO}$ maximum, $I_C = 0$, $f = 1\text{MHz}$	<75	

*Pulse Test : Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Specifications

I_C maximum (A)	V_{CEO} maximum (V)	V_{CBO} maximum (V)	P_{tot} at 25°C (W)	f_T (minimum) (MHz)	h_{FE} minimum at $I_C = 50\text{mA}$	Package and Pin Out	Part Number
1	300	350	10	15	30	TO-39	2N5416

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Notes:

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