

2N3440

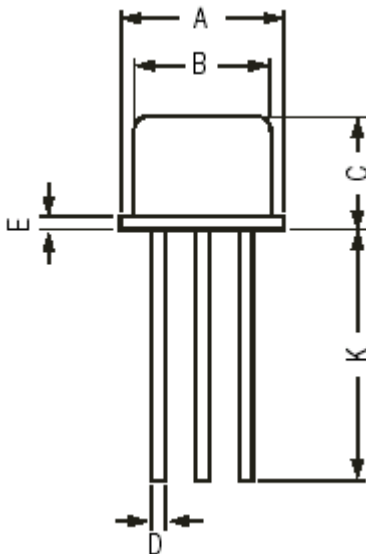
High Voltage Transistor



Features:

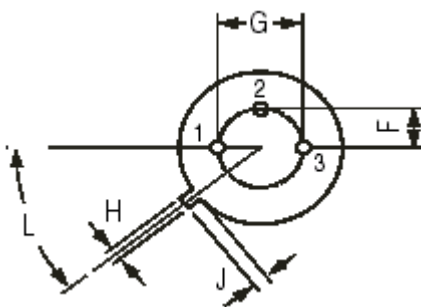
- NPN High Voltage Silicon Transistor.
- High Voltage Silicon Planar Transistors used in High Voltage and High Power Amplifier Applications.

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

Parameter	Symbol		Units
Collector-Emitter Voltage	V_{CEO}	250	V
Collector-Base Voltage	V_{CBO}	300	
Emitter-Base Voltage	V_{EBO}	7.0	
Collector Current Continuous	I_C	1.0	A
Base Current	I_B	0.5	
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0	W
Power Dissipation at $T_c = 25^\circ\text{C}$ Derate above 25°C		5.7	
		5.0	mW/ $^\circ\text{C}$
		28.6	
Operating and Storage Junction Temperature Range	T_j, T_{stg}	-65 to +200	$^\circ\text{C}$
Thermal Resistance			
Junction to Ambient	$R_{th(j-a)}$	175	$^\circ\text{C}/\text{W}$
Junction to Case	$R_{th(j-c)}$	35	

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

Parameter	Symbol	Test Condition		Units
Collector-Emitter Voltage	$V_{CEO(sus)*}$	$I_C = 50\text{mA}, I_B = 0$	250	V
Collector-Cut off Current	I_{CBO}	$V_{CB} = 250\text{V}, I_E = 0$	<20	μA
	I_{CEO}	$V_{CE} = 200\text{V}, I_B = 0$	<50	
	I_{CEX}	$V_{CE} = 300\text{V}, V_{BE} = 1.5\text{V}$	<500	
Emitter-Cut off Current	I_{EBO}	$V_{EB} = 6\text{V}, I_C = 0$	<20	
DC Current Gain	h_{FE*}	$I_C = 20\text{mA}, V_{CE} = 10\text{V}$	40 - 160	-
Collector Emitter Saturation Voltage	$V_{CE(Sat)*}$	$I_C = 0.05\text{A}, I_B = 4\text{mA}$	<0.5	V
Base Emitter Saturation Voltage	$V_{BE(Sat)*}$	$I_C = 50\text{mA}, I_B = 4\text{mA}$	<1.3	

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

Parameter	Symbol	Test Condition		Units
Small Signal Characteristics				
Small Signal Current Gain	h_{fe}	$I_C = 5\text{mA}, V_{CE} = 10\text{V}, f = 1\text{kHz}$	>25	-
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	<10	pF
Input Capacitance	C_{ib}	$V_{EB} = 5\text{V}, I_C = 0, f = 1\text{MHz}$	<75	
Current Gain-Bandwidth Product	f_t	$I_C = 10\text{mA}, V_{CE} = 10\text{V}, f = 5\text{MHz}$	>15	MHz
Real Part of Input impedance	$R_{e(hie)}$	$V_{CE} = 10\text{V}, I_C = 5\text{mA}, f = 1\text{MHz}$	<300	Ω

*Pulse Test: Pulse Width = 300 μs , Duty Cycle = 2%

Specifications

$I_{C(av)}$ maximum (A)	V_{CEO} maximum (V)	V_{CBO} maximum (V)	$V_{CE(sat)}$ (V) at $I_C = 0.05\text{A}$	P_{tot} at 25°C (W)	Package	Type	Part Number
1	250	300	0.5	1	TO-39	NPN	2N3440

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Notes:

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