

High Voltage Transistor



Pin Configuration

1. Emitter
2. Base
3. Collector

Features:

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

Absolute Maximum Ratings:

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

Characteristic	Symbol	Value	Unit	
Collector Base Voltage	V_{CBO}	300	V	
Collector-Emitter Voltage	V_{CES}	250		
Emitter-Base Voltage	V_{EBO}	7		
Collector Current Continuous	I_C	1	A	
Base Current	I_B	0.5		
Power Dissipation at $T_a = 25^\circ\text{C}$ 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		5.7		
Operating Temperature	T_J	200		$^\circ\text{C}$
		Storage Temperature Range		

Thermal Resistance

Junction to Ambient	$R_{th(j-a)}$	175	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	35	

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Electrical Characteristics:

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

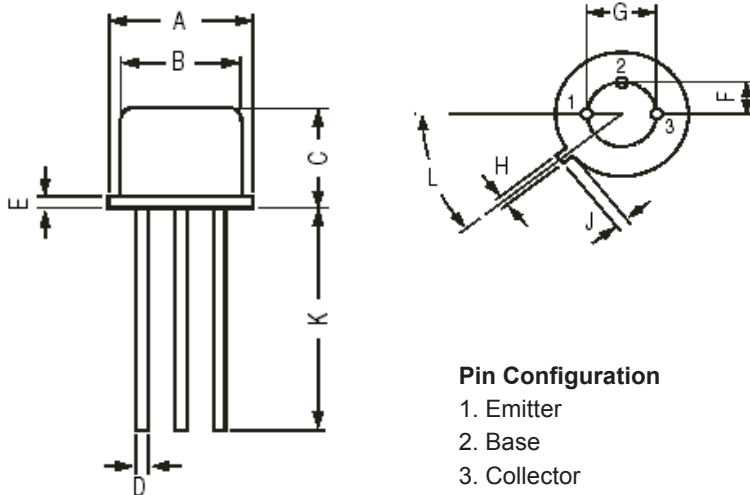
Parameter	Symbol	Test Condition		Unit
Collector-Emitter Voltage	$V_{\text{CEO(sus)}}^*$	$I_C = 50\text{mA}, I_B = 0$	250	V
Collector-Cut off Current	I_{CBO}	$V_{\text{CB}} = 250\text{V}, I_E = 0$	<20	μA
	I_{CEO}	$V_{\text{CE}} = 200\text{V}, I_B = 0$	<50	
	I_{CEX}	$V_{\text{CE}} = 300\text{V}, V_{\text{BE}}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

Small Signal Characteristics

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

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

TO-39 Metal Can Package



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Dim.	Min.	Max.
A	8.5	9.39
B	7.74	8.5
C	6.09	6.6
D	0.4	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	12.7	-
L	42°	48°

Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, NPN, TO-39	2N3440

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