

NPN High Voltage Silicon Transistor

350V_{CEO}, 1A I_c

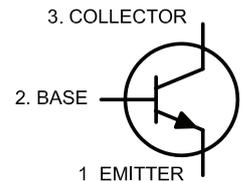
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TO-39

**RoHS
Compliant**

NPN



Absolute Maximum Ratings

Description	Symbol	Value	Unit
Collector Emitter Voltage	V _{CEO}	350	V
Collector Base Voltage	V _{CB0}	450	V
Emitter Base Voltage	V _{EBO}	7	V
Collector Current Continuous	I _c	1	A
Base Current	I _B	0.5	A
Power Dissipation at T _A = 25°C	P _D	1	W
Derate above 25°C		5.7	mW/°C
Power Dissipation at T _c = 25°C	P _D	5	W
Derate above 25°C		28.6	mW/°C
Operating and Storage Junction Temperature Range	T _j , T _{stg}	-65 to +200	°C
Thermal Resistance			
Junction to Ambient	R _{th(j-a)}	175	°C/W
Junction to Case	R _{th(j-c)}	35	°C/W

Electrical Characteristics: (T_A = +25°C Unless otherwise specified)

Description	Symbol	Test Conditions	Value	Unit
Collector Emitter Voltage	V _{CEO(SUS)} *	I _c = 50mA, I _B = 0	>350	V
Collector Cut off Current	I _{CB0}	V _{CB} = 360V, I _E = 0 V _{CB} = 250V, I _E = 0	<20 -	μA μA
	I _{CEO}	V _{CE} = 300V, I _B = 0 V _{CE} = 200V, I _B = 0	<20 -	μA μA
	I _{CEX}	V _{CE} = 450V, V _{BE} = 1.5V V _{CE} = 300V, V _{BE} = 1.5V	<500 -	μA μA
Emitter-Cut off Current	I _{EBO}	V _{EB} = 6V, I _c = 0	<20	μA
DC Current Gain	*h _{FE}	I _c = 2mA, V _{CE} = 10V I _c = 20mA, V _{CE} = 10V	>30 40-160	
Collector Emitter Saturation Voltage	*V _{CE(Sat)}	I _c = 50mA, I _B = 4mA	<0.5	V
Base Emitter Saturation Voltage	*V _{BE(Sat)}	I _c = 50mA, I _B = 4mA	<1.3	V

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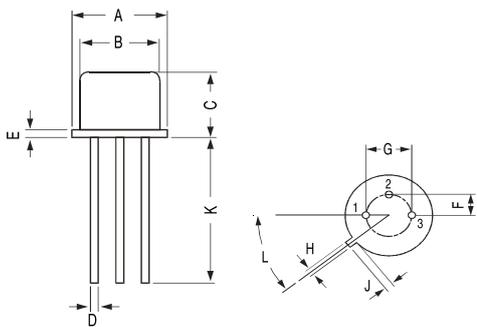
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Small Signal Characteristics

Description	Symbol	Test Conditions	Value	Unit
Small Signal Current Gain	h _{FE}	I _C = 5mA, V _{CE} = 10V, f = 1kHz	>25	
Output Capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz	<10	pF
Input Capacitance	C _{ib}	V _{EB} = 5V, I _C = 0, f = 1MHz	<75	pF
Current Gain-Bandwidth Product	f _t	I _C = 10mA, V _{CE} = 10V, f = 5MHz	>15	MHz
Real Part of Input Impedance	Re(h _{ie})	V _{CE} = 10V, I _C = 5mA, f = 1MHz	<300	Ω

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

TO-39 Metal Can Package



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

Dim.	Min.	Max.
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.7	-
L	42 Deg.	48 Deg.

Dimensions : Millimetres

Part Number Table

Description	Part Number
NPN High Voltage Silicon Transistor, 350V, 1A, TO-39	MP001170

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