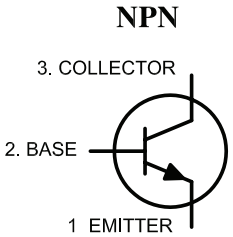
NPN Silicon Planar Transistor
80V_{CEO}, 1A I_C

multicomp PRO

TO-39

RoHS Compliant



Absolute Maximum Ratings

Description	Symbol	Value	Unit
Collector Emitter Voltage	V_{CEO}	80	V
Collector Base Voltage	V_{CBO}	140	V
Emitter Base Voltage	V_{EBO}	7	V
Collector Current Continuous	I_C	1	A
Power Dissipation at T_A = 25°C Derate above 25°C	P_D	0.8 4.6	W mW/°C
Power Dissipation at T_C = 25°C Derate Above 25°C	P_D	5 28.6	W mW/°C
Operating and Storage Junction Temperature Range	Tj, Tstg	- 65 to +200	°C
Thermal Resistance			
Junction to Case	Rth(j-c)	16.5	°C/W
Junction to Ambient in Free Air	Rth(j-a)	89.5	°C/W

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

Description	Symbol	Test Conditions	Min	Max	Unit
Collector Emitter Voltage	V_{CEO}	I_C = 1mA, I_B = 0	80	-	V
Collector -Base Voltage	V_{CBO}	I_C = 100µA, I_E = 0	140	-	V
Emitter Base Voltage	V_{EBO}	I_E = 100µA, I_C = 0	7	-	V
Collector Cut off Current	I_{CBO}	V_{CB} = 90V, I_E = 0 V_{CB} = 90V, I_E = 0, T_A = 150°C	- -	10 10	nA µA
Emitter Cut off Current	I_{EBO}	V_{EB} = 5V, I_C = 0	-	10	nA
DC Current Gain	*hFE	I_C = 0.1mA, V_{CE} = 10V I_C = 10mA, V_{CE} = 10V I_C = 150mA, V_{CE} = 10V I_C = 150mA, V_{CE} = 10V, T_A = 55°C I_C = 500mA, V_{CE} = 10V I_C = 1A, V_{CE} = 10V	>50 >15 >50 >90 100 - 300 >40	20	nA
Collector Emitter Saturation Voltage	*$V_{CE(Sat)}$	I_C = 150mA, I_B = 15mA I_C = 500mA, I_B = 50mA		0.2 0.5	V

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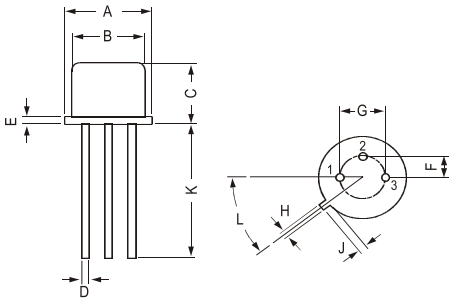
Description	Symbol	Test Conditions	Min	Max	Unit
Base Emitter Saturation Voltage	*$V_{BE(Sat)}$	I_C = 150mA, I_B = 15mA		1.1	V
Output Capacitance	Cob	V_{CB} = 10V, I_E = 0, f = 1MHz		12	pF
Input Capacitance	Cib	V_{EB} = 0.5V, I_C = 0, f = 1MHz		60	pF
Small Signal Current Gain	hfe	I_C = 1mA, V_{CE} = 5V, f = 1kHz	80	400	
Collector Rise Time Constant	rb'Cc	I_E = 10mA, V_{CB} = 10V, f = 79.8MHz		400	ps
Noise Figure	NF	I_C = 100mA, V_{CE} = 10V, R_S = 1kΩ, f = 1kHz		4	dB

*Pulse Test: Pulse Width < 300µs, Duty Cycle < 1%

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 Silicon Planar Transistor, 80V, 1A, TO-39	MP001168