

NPN Silicon Planar Transistor

80V_{CEO}, 500mA I_C

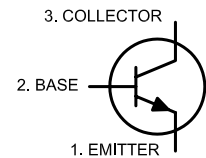
multicompPRO



TO-39

**RoHS
Compliant**

NPN



Absolute Maximum Ratings (T_A = 25°C unless specified otherwise)

Description	Symbol	Value	Units
Collector Emitter Voltage	V _{CEO}	80	V
Collector Emitter Voltage	V _{CER}	100	
Collector Base Voltage	V _{CBO}	120	
Emitter Base Voltage	V _{EBO}	7	
Collector Current Continuous	I _C	0.5	A
Total Device Dissipation @ T _A =25°C Derate Above 25°C	P _D	0.8 4.57	W mW/°C
Total Device Dissipation@ T _C =25°C Derate Above 25°C	P _D	3 17.2	W 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)}	219	°C/W
Junction to Case	R _{th(j-c)}	58.3	°C/W

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

Description	Symbol	Test Conditions	Min	Max	unit
Collector Emitter Breakdown Voltage	BV _{CER(sus)}	I _C = 100mA, R _{BE} = 10Ω	100		V
Collector Emitter Sustaining Voltage	BV _{CEO(sus)} *	I _C = 10mA, I _B = 0	80		V
Collector Base Breakdown Voltage	BV _{CBO}	I _C = 100μA, I _E = 0	120		V
Emitter Base Breakdown Voltage	BV _{EBO}	I _E = 100μA, I _C = 0	7		V
Collector Cutoff Current	I _{CBO}	V _{CB} = 90V, I _E = 0 V _{CB} = 90V, I _E = 0, T _A = 150°C		10 15	nA μA
Emitter Cutoff Current	I _{EBO}	V _{EB} = 5V, I _C = 0		10	nA
DC Current Gain	h _{FE} *	I _C = 1mA, V _{CE} = 10V I _C = 10mA, V _{CE} = 10V I _C = 10mA, V _{CE} = 10V T _C = -55°C I _C = 150mA, V _{CE} = 10V	20 35 20 40	120	
Collector Emitter (Sat) Voltage	V _{CE(Sat)}	I _C = 50mA, I _B = 5mA I _C = 150mA, I _B = 15mA		1.2 5	V
Base Emitter (Sat) Voltage	V _{BE(Sat)}	I _C = 50mA, I _B = 5mA I _C = 150mA, I _B = 15mA		0.9 1.3	V

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
Element14.com/multicomp-pro

multicompPRO

NPN Silicon Planar Transistor

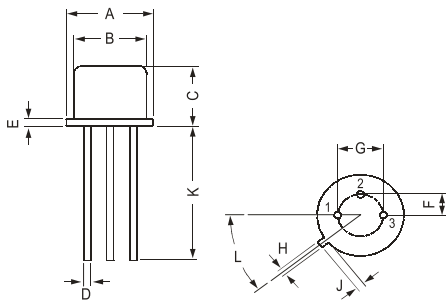
80V_{CE0}, 500mA I_c

multicompPRO

Small Signal Characteristics

Description	Symbol	Test Conditions	Min	Max	unit
Current Gain Bandwidth Product	f _T	I _C = 50mA, V _{CE} = 10V f = 20MHz	50		MHz
Output Capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz		15	pF
Input Capacitance	C _{ib}	V _{EB} = 0.5V, I _C = 0, f = 1MHz		85	pF
Input Impedance	h _{ib}	I _C = 1mA, V _{CB} = 5V, f = 1kHz	20	30	Ω
		I _C = 5mA, V _{CB} = 10V, f = 1kHz	4	8	
Voltage Feedback Ratio	h _{rb}	I _C = 1mA, V _{CB} = 5V, f = 1kHz		1.25	X10 ⁻⁴
		I _C = 5mA, V _{CB} = 10V, f = 1kHz		1.5	
Small Signal Current Gain	h _{fe}	I _C = 1mA, V _{CB} = 5V, f = 1kHz	30	100	
Output Admittance	h _{ob}	I _C = 1mA, V _{CB} = 5V, f = 1kHz		0.5	μmho
		I _C = 5mA, V _{CB} = 10V, f = 1kHz		0.5	

TO-39 Metal Can Package



Dim.	Min.	Max.	Dim.	Min.	Max.
A	8.5	9.39	G	4.82	5.33
B	7.74	8.5	H	0.71	0.86
C	6.09	6.6	J	0.73	1.02
D	0.4	0.53	K	12.7	-
E	-	0.88	L	42 Deg.	48 Deg.
F	2.41	2.66			

Dimensions : Millimetres

Part Number Table

Description	Part Number
NPN Silicon Planar Transistor, 80V, 500mA, TO-39	2N1893

Important Notice : This data sheet and its contents (the "Information") belong to the members of the AVNET group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp Pro is the registered trademark of Premier Farnell Limited 2019.

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
Element14.com/multicomp-pro

multicompPRO