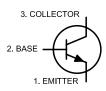
multicomp



NPN





Pin Configuration:

- 1. Emitter
- 2. Base
- 3. Collector

Description:

This is a silicon NPN transistor in a T0-39 type case designed primarily for amplifier and switching applications. This device features high breakdown voltage, low leakage current, low capacity, and beta useful over an extremely wide current range.

Absolute Maximum Ratings:

Collector-Base Voltage, V _{CBO}	: 120V
Collector-Emitter Voltage, V _{CEO}	: 80V
Emitter-Base Voltage, V _{EBO}	: 7V
Continuous Collector Current, I _C	: 0.5A
Total Device Dissipation (T _A = +25°C), P _D	: 800mW
Derate above 25°C	: 4.6mW/°C
Total Device Dissipation (T _C = +25°C), P_D	: 3W
Derate above 25°C	: 17.2mW/°C
Operating Junction Temperature Range, T_J	: -65°C to +200°C
Storage Temperature Range, T _{stg}	: -65°C to +200°C
Thermal Resistance, Junction-to-Case, R _{thJC}	: 16.5°C/W
Thermal Resistance, Junction-to-Ambient, RthJA	: 219°C/W
Lead Temperature (During Soldering, 1/16" from case, 60sec Max.), T_{L}	: 300°C

www.element14.com www.farnell.com www.newark.com



multicomp



Electrical Characteristics: ($T_A = +25^{\circ}C$ Unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Max	unit
OFF Characteristics					
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C = 30mA, I _B = 0	80	-	V
Collector-Base Breakdown Voltage	vn Voltage $V_{(BR)CBO}$ $I_C = 100\mu A, I_E = 0$		120	-	V
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	I _E = 100μA, I _C = 0	7	-	V
Collector Cut-Off Current		V _{CB} = 90V, I _E = 0	-	0.01	μA
	I _{СВО}	V _{CB} = 90V, I _E = 0, T _A = +150°C	-	15	μA
Emitter Cut-Off Current	I _{EBO} V _{BE} = 5V, I _C = 0		-	0.01	μA
ON Characteristics (Note 1)					
		V _{CE} = 10V, I _C = 0.1mA	20	-	-
DC Current gain	h _{FE}	V _{CE} = 10V, I _C = 10mA	35	-	-
		V _{CE} = 10V, I _C = 150mA	40	120	-
		I _C = 50mA, I _B = 5mA	-	1.2	V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C = 150mA, I _B = 15mA	-	5	V
		I _C = 150mA, I _B = 15mA	-	1.3	V
Small-Signal Characteristics					
Current gain-Bandwidth product	f _T	V _{CE} = 10V, I _C = 50mA, f = 50 - 50		-	MHz
Output Capacitance	C _{obo}	V _{CB} = 10V, I _E = 0, f = 1MHz	-	15	pF

Note:

1. Pulse Test: Pulse Width <+300µs, Duty Cycle <= 1%

www.element14.com www.farnell.com www.newark.com

Input Capacitance

Small-Signal Current gain



85

_

_

30

pF

_

 V_{BE} = 500mV, I_C = 0, f = 1MHz

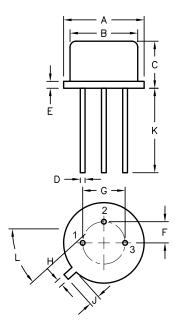
 V_{CE} = 5V, I_C = 1mA, f = 1kHz

C_{ibo}

h_{fe}

Bipolar Transistor

multicomp



Pin Configuration:

- 1. Emitter
- 2. Base
- 3. Collector

Dimensions	Α	В	С	D	E	F	G	Н	J	К	L
Min.	8.50	7.74	6.09	0.40	-	2.41	4.82	0.71	0.73	12.70	42°
Max.	9.39	8.50	6.60	0.53	0.88	2.66	5.33	0.86	1.02	-	48°

Dimensions : Millimetres

Part Number Table

Description	Part Number
Bipolar Transistor	2N1893

Important Notice : This data sheet and its contents (the "Information") belong to the members of the Premier Farnell 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 or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage resulting from any reliance on the Information or use of it (including liability resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell plc 2012.

www.element14.com www.farnell.com www.newark.com

