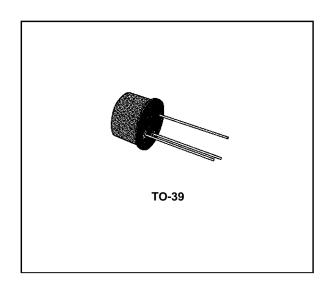
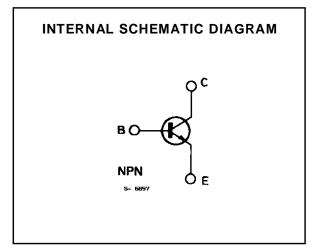


GENERAL PURPOSE AMPLIFIER AND SWITCH

DESCRIPTION

The 2N2102 is a silicon planar epitaxial NPN transistor in Jedec TO-39 metal case. It is intended for a wide variety of small-signal and medium power applications in military and industrial equipments.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage (I _E = 0)	120	V
V_{CEO}	Collector-emitter Voltage (I _B = 0)	65	V
V _{CER}	Collector-emitter Voltage ($R_{BE} \le 10 \Omega$)	80	V
V _{EBO}	Emitter-base Voltage (I _C = 0)	7	V
I _C	Collector Current	1	Α
P _{tot}	Total Power Dissipation at $T_{amb} \le 25$ °C at $T_{case} \le 25$ °C	1 5	W W
T _{stg} , T _j	Storage and Junction Temperature	- 65 to 200	°C

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THERMAL DATA

R _{th j-case}	Thermal Resistance Junction-case	Max	35	°C/W
R _{th j-amb}	Thermal Resistance Junction-ambient	Max	175	°C/W

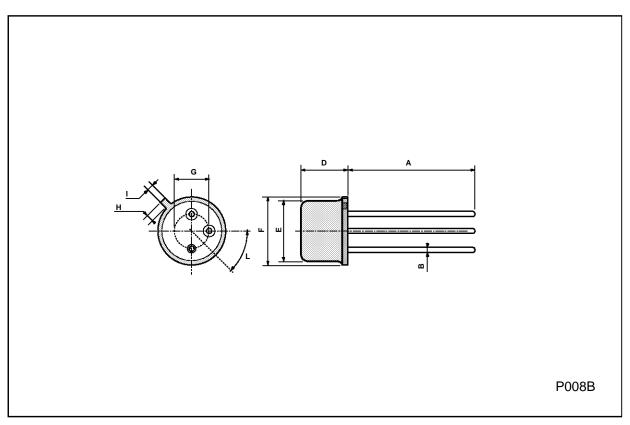
ELECTRICAL CHARACTERISTICS ($T_{amb} = 25 \, ^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Co	Min.	Тур.	Max.	Unit	
I _{CBO}	Collector Cutoff Current (I _E = 0)	V _{CB} = 60 V V _{CB} = 60 V	T _{amb} = 150 °C			2 2	nΑ μΑ
I _{EBO}	Emitter Cutoff Current $(I_C = 0)$	V _{EB} = 5 V				5	nA
V _(BR) CBO	Collector-base Breakdown Voltage (I _E = 0)	I _C = 100 μA		120			V
V _{CEO (sus)} *	Collector-emitter Sustaining Voltage (I _B = 0)	I _C = 30 mA		65			V
V _{CE (sat)} *	Collector-emitter Saturation Voltage	I _C = 150 mA	I _B = 15 mA			0.5	٧
V _{BE (sat)} *	Base-emitter Saturation Voltage	I _C = 150 mA	I _B = 15 mA			1.1	V
hfe*	DC Current Gain	$I_{C} = 10 \mu A$ $I_{C} = 100 \mu A$ $I_{C} = 10 mA$ $I_{C} = 150 mA$ $I_{C} = 500 mA$ $I_{C} = 1 A$	VCE = 10 V VCE = 10 V	10 20 35 40 25 10		120	
h _{fe}	High Frequency Current Gain	I _C = 50 mA f = 20 MHz	V _{CE} = 10 V		6		
NF	Noise Figure	I _C = 300 μA BW = 1 Hz	V_{CE} = 10 V f = 1 KHz R_G = 510 Ω			8	dB
ССВО	Collector-base Capacitance	I _E = 0 f = 1 MHz	V _{CB} = 10 V			15	pF
СЕВО	Emitter-base Capacitance	I _C = 0 f = 1 MHz	V _{EB} = 0.5 V			80	pF

^{*} Pulsed : pulse duration = 300 μs, duty cycle = 1 %.

TO39 MECHANICAL DATA

DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А	12.7			0.500			
В			0.49			0.019	
D			6.6			0.260	
E			8.5			0.334	
F			9.4			0.370	
G	5.08			0.200			
Н			1.2			0.047	
I			0.9			0.035	
L	45° (typ.)						



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