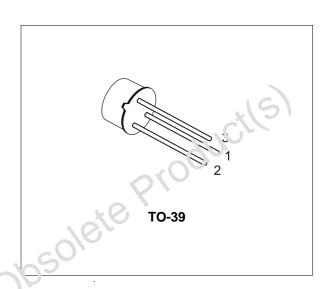


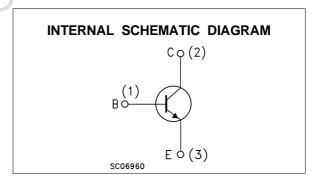
EPITAXIAL PLANAR NPN

 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-signall 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
Ic	Collector Current	1	А
P_{tot}	Total Dissipation at T _{amb} ≤ 25 °C	1	W
	at T _C ≤ 25 °C	5	W
T _{stg}	Storage Temperature	-65 to 175	°C
Tj	Max. Operating Junction Temperature	175	°C

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THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-Case	Max	30	°C/W
R _{thj-amb}	Thermal Resistance Junction-Ambient	Max	150	°C/W

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

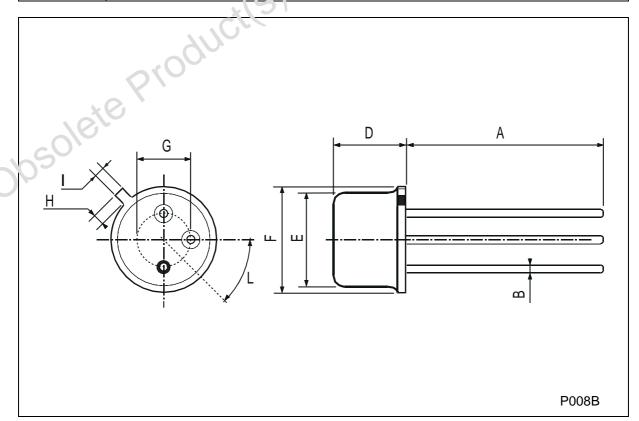
Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
I _{CBO}	Collector Cut-off Current (I _E = 0)	V _{CB} = 60 V V _{CB} = 60 V T _C = 150 °C			2 2	nΑ μΑ
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			5	nA
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _E = 0)	I _C = 100 μA	120			5
$V_{\text{CEO(sus)}^{*}}$	Collector-Emitter Sustaining Voltage (I _B = 0)	Ic = 30 mA	65	09/		V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 150 mA I _B = 15 mA			0.5	V
$V_{BE(sat)^*}$	Base-Emitter Saturation Voltage	I _C = 150 mA)		1.1	V
h _{FE} *	DC Current Gain	$\begin{array}{llllllllllllllllllllllllllllllllllll$	10 20 35 40 25 10		120	
h _{fe} *	High Frequency Current Gain	I _C = 50 mA V _{CE} = 10 V f = 20 MHz		6		
NF	Noise Figure	$I_{C} = 300 \mu\text{A}$ $V_{CE} = 10 \text{V}$ $f = 1 \text{KHz}$ $BW = 1 \text{Hz}$ $R_{g} = 510 \Omega$			8	dB
Ссво	Collector-base Capacitance	$I_E = 0$ $V_{CB} = 10 \text{ V}$ $f = 1 \text{MHz}$			15	pF
Сево	Emitter-Base Capacitance	I _C = 0 V _{EB} = 0.5 V f = 1MHz			80	pF

^{*} Pulse d: Pulse duration = 300 μs, duty cycle ≤ 1 %

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TO-39 MECHANICAL DATA

DIM.	mm		inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
А	12.7			0.500		
В			0.49			0.019
D			6.6			0.26)
Е			8.5		AU	0.334
F			9.4		0100	0.370
G	5.08			0.200		
Н			1.2	Ole		0.047
ı			0.9			0.035
L			45° ((typ.)		



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