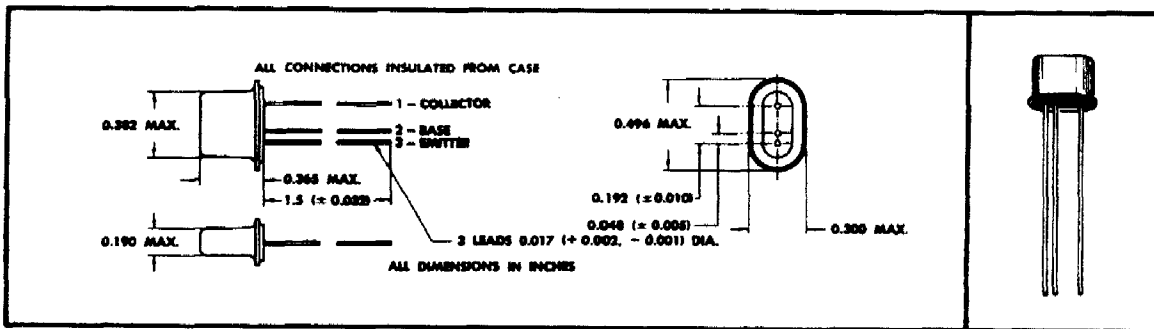


**TYPE 2N119**  
**N-P-N GROWN-JUNCTION SILICON TRANSISTOR**

**36 to 86 beta spread**  
**Specifically designed for high gain at high temperatures**

**mechanical data**

Welded case with glass-to-metal hermetic seal between case and leads. Approximate weight is 1.7 grams.



**absolute maximum ratings at 25°C ambient (except where advanced temperatures are indicated)**

Collector Voltage Referred to Base	45 V
Emitter Voltage Referred to Base	1 V
Collector Current	25 mA
Emitter Current	-25 mA
Collector Dissipation	150 mW
at 100°C	100 mW
at 150°C	50 mW

**junction temperature**

Maximum Range . . . . . -65°C to +175°C

**common base design characteristics at T<sub>j</sub> = 25°C (except where advanced temperatures are indicated)**

		test conditions	min.	design center	max.	unit
BV <sub>CB0</sub>	Collector Breakdown Voltage	I <sub>C</sub> = 50 $\mu$ A, I <sub>E</sub> = 0	45			Volt
I <sub>CB0</sub>	Collector Cutoff Current	V <sub>CB</sub> = 30V, I <sub>E</sub> = 0			2	$\mu$ A
	at 100°C	V <sub>CB</sub> = 5V, I <sub>E</sub> = 0			10	$\mu$ A
	at 150°C	V <sub>CB</sub> = 5V, I <sub>E</sub> = 0			50	$\mu$ A
h <sub>ib</sub>	Input Impedance	V <sub>CB</sub> = 5V, I <sub>E</sub> = -1mA	30	42	80	Ohm
h <sub>ob</sub>	Output Admittance	V <sub>CB</sub> = 5V, I <sub>E</sub> = -1mA	0	0.4	1.2	$\mu$ mho
h <sub>fb</sub>	Feedback Voltage Ratio	V <sub>CB</sub> = 5V, I <sub>E</sub> = -1mA	50	400	1000	X10 <sup>-6</sup>
h <sub>fb</sub>	Current Transfer Ratio	V <sub>CB</sub> = 5V, I <sub>E</sub> = -1mA	-0.9735	-0.98	-0.989	
PG <sub>0</sub>	Power Gain*†	V <sub>CE</sub> = 20V, I <sub>E</sub> = -2mA		42		db
NF	Noise Figure*‡	V <sub>CE</sub> = 5V, I <sub>E</sub> = -1mA		20		db
f <sub>cb</sub>	Frequency Cutoff	V <sub>CB</sub> = 5V, I <sub>E</sub> = -1mA		6		mc
C <sub>cb</sub>	Output Capacitance (1mc)	V <sub>CB</sub> = 5V, I <sub>E</sub> = -1mA		7		$\mu$ l
R <sub>cs</sub>	Saturation Resistance*	I <sub>B</sub> = 2.2mA, I <sub>C</sub> = 5mA		100	200	Ohm

\*Common Emitter      †R<sub>g</sub> = 1k; R<sub>L</sub> = 20k      ‡Conventional Noise—Compared to 1000 ohm resistor, 1000 cps and 1 cycle band width



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