

**TYPE 2N119**

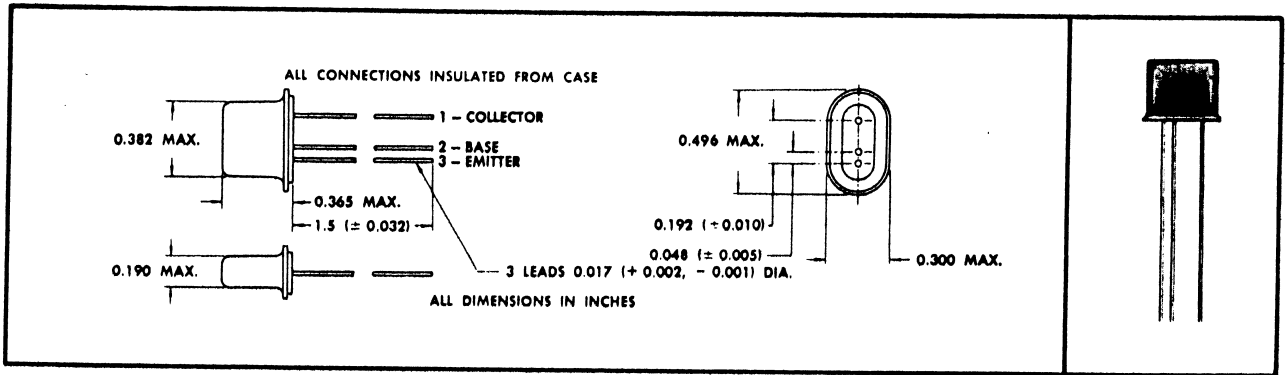
**N-P-N GROWN JUNCTION SILICON TRANSISTOR**

**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 Tj = 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> = 50μA	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	μA
		at 100°C	V <sub>CB</sub> = 5V	I <sub>E</sub> = 0	—	10	μA
		at 150°C	V <sub>CB</sub> = 5V	I <sub>E</sub> = 0	—	50	μA
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	0.4	1.2	μmho
h <sub>rb</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>e</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>αb</sub>	Frequency Cutoff	V <sub>CB</sub> = 5V	I <sub>E</sub> = -1mA	—	6	—	mc
C <sub>ob</sub>	Output Capacitance (1mc)	V <sub>CB</sub> = 5V	I <sub>E</sub> = -1mA	—	7	—	μμf
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

