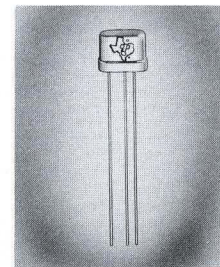




N-P-N GROWN JUNCTION SILICON TRANSISTOR

Beta From 9 to 20

Specifically designed for high gain at high temperatures



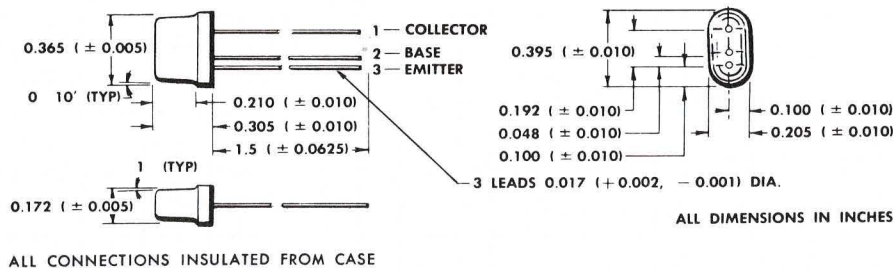
TYPE 2N1149/903
BULLETIN NO. DL-S-1072 MAY 1959
REPLACES BULLETIN NO DL-S-818 OCTOBER 1957

qualification testing

All units are heat cycled ten times from -65°C to +175°C. The units are hermetically sealed. All units are completely tested for design characteristics and undergo a rigorous tumble test to check for mechanical reliability.

mechanical data

Metal case with glass-to-metal hermetic seal between case and leads. Unit weight is approximately 1 gram.



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

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 _{CB0}	Collector Breakdown Voltage	I _C = 50μA	I _E = 0	45	—	—	Volt
I _{CB0}	Collector Cutoff Current	V _{CB} = 30V	I _E = 0	—	—	2	μA
	at 100°C	V _{CB} = 5V	I _E = 0	—	—	10	μA
	at 150°C	V _{CB} = 5V	I _E = 0	—	—	50	μA
h _{ib}	Input Impedance	V _{CB} = 5V	I _E = -1mA	30	42	80	Ohm
h _{ob}	Output Admittance	V _{CB} = 5V	I _E = -1mA	0.0	0.4	1.2	μmho
h _{rb}	Feedback Voltage Ratio	V _{CB} = 5V	I _E = -1mA	0.0	120	500	X10 ⁻⁶
h _{fb}	Current Transfer Ratio	V _{CB} = 5V	I _E = -1mA	-0.9	-0.925	-0.953	—
PG _e	Power Gain*†	V _{CE} = 20V	I _E = -2mA	—	35	—	db
NF	Noise Figure*‡	V _{CE} = 5V	I _E = -1mA	—	20	—	db
f _{cb}	Frequency Cutoff	V _{CB} = 5V	I _E = -1mA	—	4	—	mc
C _{ob}	Output Capacitance (1mc)	V _{CB} = 5V	I _E = 0	—	7	—	μμf
R _{cs}	Saturation Resistance*	I _B = 2.2mA	I _C = 5mA	—	100	200	Ohm

*Common Emitter †R_g = 1k; R_L = 20k ‡Conventional Noise—Compared to 1000 ohm resistor, 1000 cps and 1 cycle band width

LICENSED UNDER BELL SYSTEM PATENTS

SEMICONDUCTOR-COMPONENTS DIVISION

TEXAS INSTRUMENTS
INCORPORATED
SEMICONDUCTOR-COMPONENTS DIVISION
P. O. BOX 312 • 13500 N. CENTRAL EXPRESSWAY
DALLAS, TEXAS

TYPE 2N1149/903

TYPICAL CHARACTERISTICS

For Additional Electrical Information See Type 2N332 Data Sheet

