TENTATIVE SPECIFICATIONS

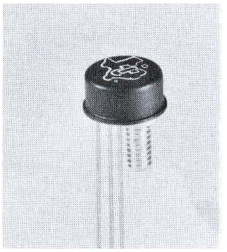
TYPES 2N1047, 2N1048, 2N1049, 2N1050
N-P-N DIFFUSED JUNCTION SILICON TRANSISTORS

40 watts at 25°C with infinite heat sink

Stud mounted for maximum thermal efficiency

— 65°C to + 200°C operating and storage range

80 and 120 volt breakdown voltage



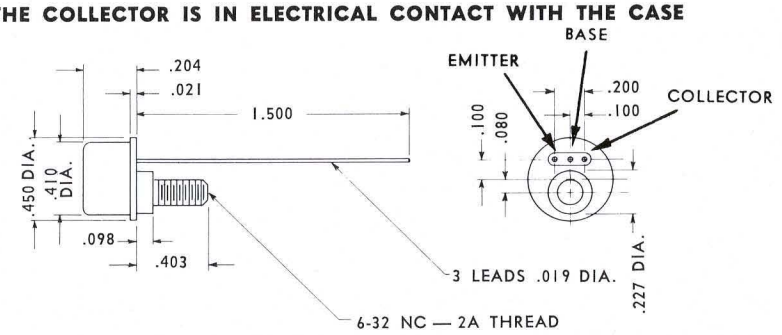
qualification testing

Each unit is heat cycled from — 65°C to + 175°C for ten cycles, and then humidity cycled at temperature from — 65°C to + 75°C in air at 95% relative humidity for four cycles. The hermetic seal is tested by subjecting immersed units to hydraulic pressure. Each unit is thoroughly tested to determine the electrical design characteristics. Production samples are life tested periodically to determine the effects of storage and dissipation and ensure maximum attainable reliability.

mechanical data

The transistor is contained in a stud mounted welded package with glass-to-metal hermetic seal between case and leads. Approximate weight is 2.0 grams.

THE COLLECTOR IS IN ELECTRICAL CONTACT WITH THE CASE



DIMENSIONS ARE MAXIMUM IN INCHES UNLESS OTHERWISE SPECIFIED

maximum ratings

Collector Voltage referred to base or emitter at 25°C (Breakdown voltages are indicated below)

Collector Dissipation at 25°C. (case temperature) * . . . . . 40 W

Junction Temperature (maximum range) . . . . . —65°C to +200°C

*Derate 228 mW/°C increase in case temperature within range of 25°C to 200°C

maximum and minimum design characteristics at T_c = 25°C

PARAMETER	TEST CONDITIONS	2N1047		2N1048		2N1049		2N1050		unit
		min.	max.	min.	max.	min.	max.	min.	max.	
BV_{CEX} Breakdown Voltage	I_C = 250 μA V_{BE} = — 1.5 V	80		120		80		120		V
BV_{EBO} Breakdown Voltage	I_E = 250 μA I_C = 0	10		10		10		10		V
I_{CBO} Collector Cutoff Current	V_{CB} = 30V I_E = 0		15		15		15		15	μA
h_{FE} Current Transfer Ratio†	V_{CE} = 10V I_C = 200mA	12	36	12	36	30	90	30	90	—
h_{IE} Input Impedance†	V_{CE} = 10V I_B = 8mA		500		500		500		500	ohm
R_{CS} Saturation Resistance†	I_C = 200 mA I_B = 40mA		15		15		15		15	ohm
V_{BE} Base Voltage †	V_{CE} = 15V I_C = 500mA		10		10		10		10	V

† Semiautomatic testing is facilitated by using pulse techniques to measure these parameters. A 300-microsecond pulse (approximately 2% duty cycle) is utilized. Thus, the unit can be tested under maximum current conditions without a significant increase in junction temperature, even though no heat sink is used. The parameter values obtained in this manner are particularly pertinent for switching circuit design and, in general, indicate the true capabilities of the device.

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