TYPE 2N250 P-N-P
ALLOY JUNCTION GERMANIUM POWER TRANSISTOR

Texas Instruments Type 2N250 P-N-P alloy junction germanium power transistor is especially designed for high power mobile applications where low distortion and optimum frequency response are of prime importance. Type 2N250, featuring a collector voltage of 30-volts, is ideal for use in 12 volt commercial audio applications.

To assure maximum reliability, stability, and long life, all units are heat cycled from −55°C and room humidity to +75°C and 95% relative humidity for four complete cycles over an eight-hour period. All transistors are thoroughly tested for rigid adherence to specified design characteristics.

mechanical data

Metal case with glass-to-metal hermetic seal between case and leads. Approximate weight is 20 grams.
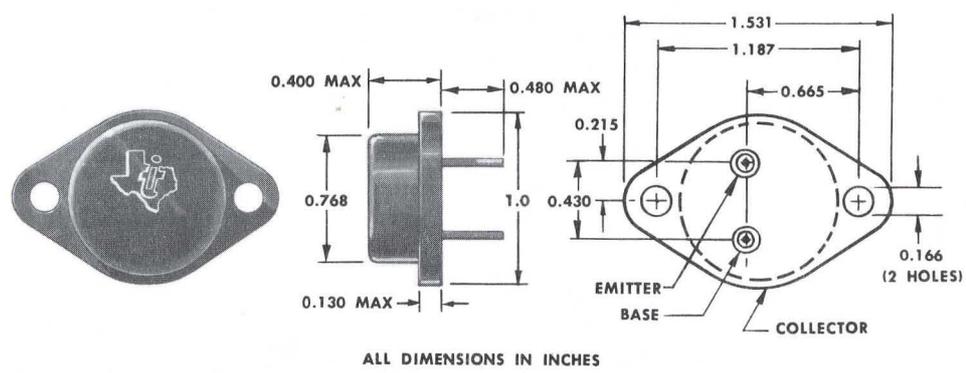
ALL DIMENSIONS IN INCHES

absolute maximum ratings at 25°C* [except where other temperatures are indicated]

Collector Voltage Referred to Base	−30 V
Collector Current	− 3 A
Total Device Dissipation	25 W
Junction Temperature Limit	85 °C
Thermal Resistance from Junction to Mounting Base	1.1 °C/W

typical design characteristics at 25°C*

			min.	design center	max.	unit
I_{CO}	Collector Cutoff Current	$V_{CB} = -30V$ $I_E = 0$	—	−0.3	−1	mA
h_{FE}	Current Gain	$I_C = -0.5A$	30	90	—	—
R_{CS}	Collector Saturation Resistance		—	0.75	2	Ohm

* All temperatures are measured on mounting base.

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TYPE 2N250 P-N-P

TYPICAL OPERATION

class A bias conditions *

V_{CC}	— Supply Voltage	-14	V
I_C	— Collector Current	-0.55	A
R_G	— Generator Resistance	20	Ohms
R_L	— Apparent Load Resistance	20	Ohms
Z_{ac}	— Choke Impedance, A.C.	≥ 260	Ohms
Z_{dc}	— Choke Impedance, D.C.	≤ 1.5	Ohms

performance characteristics at 1.5 watts output *

		min.	design center	max.	unit
P_{Ge}	Power Gain (Matched Input)	31	34	40	db
P_{Ge}	Power Gain (20 Ohm Source)	30	33	40	db
$f_{\alpha e}$	Frequency Cutoff	8	12	—	Kc
Dist	Total Harmonic Distortion	—	3	5	%
Z_{IE}	Input Impedance, $I_C = -0.55A$	—	20	—	Ohm

typical circuit
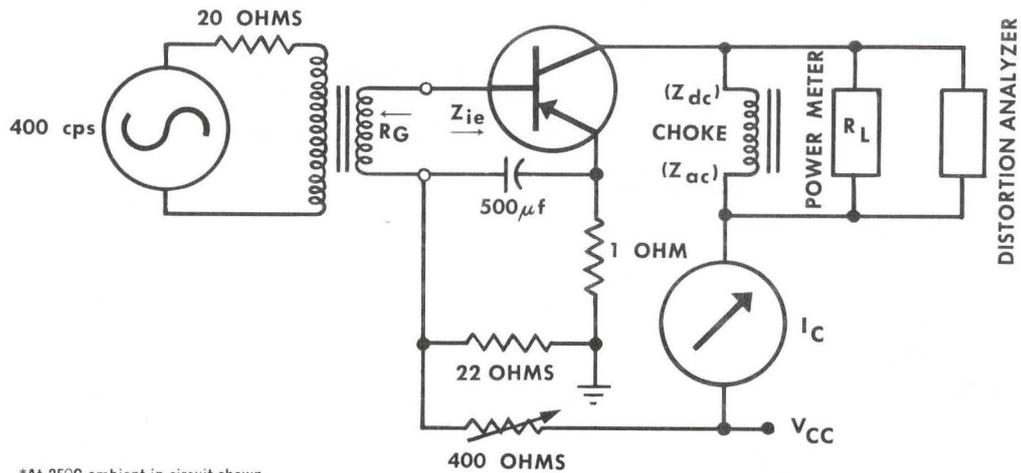
*At 25°C ambient in circuit shown.