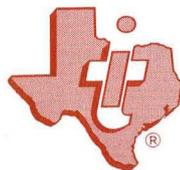


# TYPE 2N251 P-N-P

## ALLOY JUNCTION GERMANIUM POWER TRANSISTOR

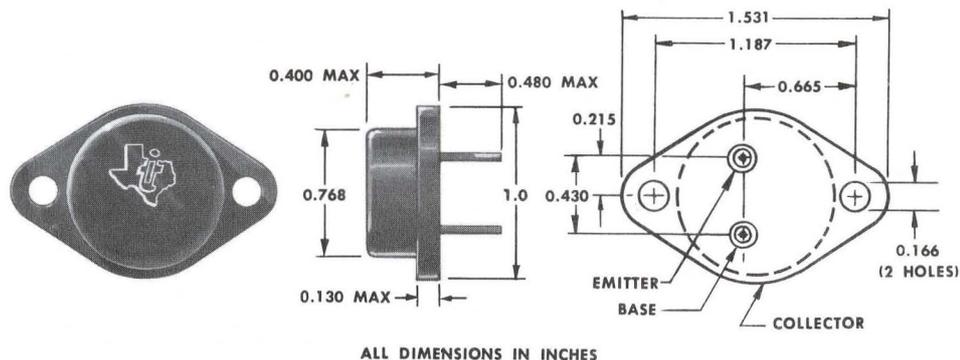


Texas Instruments Type 2N251 P-N-P alloy junction germanium power transistor is especially designed for high power mobile applications where low distortion and optimum frequency response are of prime importance. Type 2N251, featuring a voltage rating of 60-volts, is particularly well suited for use in power amplifier circuits requiring 28-volt power supplies.

To assure maximum reliability, stability, and long life, all units are heat cycled from  $-55^{\circ}\text{C}$  and room humidity to  $+75^{\circ}\text{C}$  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.



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

Collector Voltage Referred to Base . . . . .	-60 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	$V_{CB} = -60V, I_E = 0$ $I_C = -0.5A$	—	-0.5	-2	mA
$h_{FE}$	Current Gain		30	90	—	—
$R_{CS}$	Collector Saturation Resistance		—	0.75	2	Ohm

\* All temperatures are measured on mounting base.

# TYPE 2N251 P-N-P

## TYPICAL OPERATION

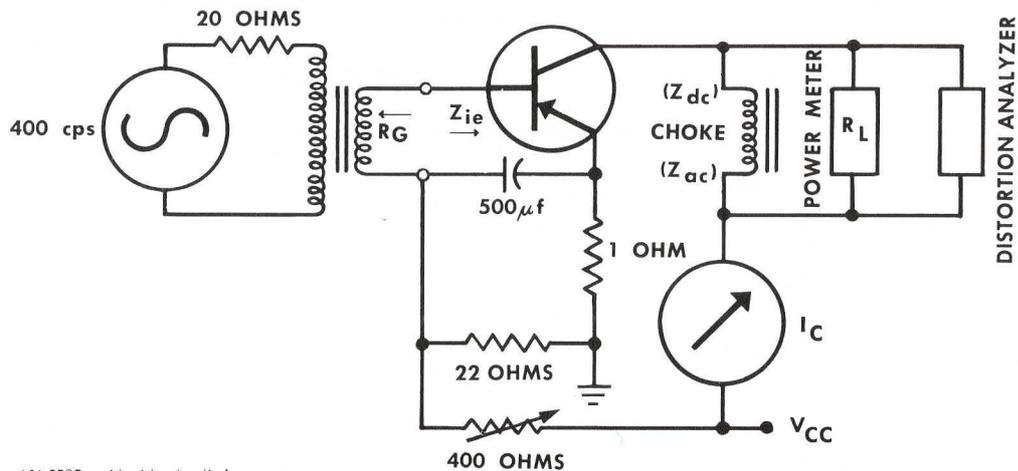
### class A bias conditions \*

$V_{CC}$ – 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. . . . .	$\geq 260$	Ohms
$Z_{dc}$ – Choke Impedance, D.C. . . . .	$\leq 1.5$	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.

TEXAS INSTRUMENTS RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME IN ORDER TO IMPROVE DESIGN

**TEXAS INSTRUMENTS**  
INCORPORATED

SEMICONDUCTOR COMPONENTS DIVISION  
POST OFFICE BOX 312 • 13500 N. CENTRAL EXPRESSWAY  
DALLAS, TEXAS