

# TYPE 2N238/310 P-N-P ALLOY JUNCTION GERMANIUM TRANSISTOR

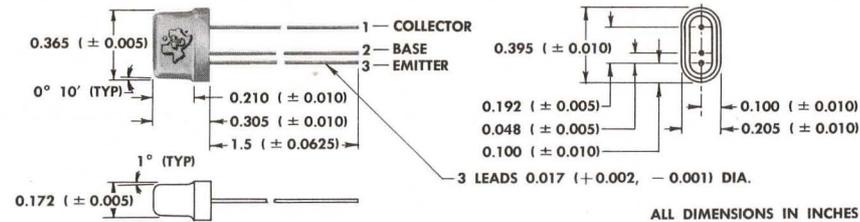


Texas Instruments Type 2N238/310 germanium P-N-P alloy junction transistor is designed for low power level Class A audio applications. Although this unit is designed for a driver application, it is also suitable as a low level Class A output device.

To guarantee maximum reliability, stability, and long life, all units are cycled from  $-55^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$  at 95% relative humidity for four complete cycles over an eight-hour period. In addition, the hermetic seal is checked by vacuum testing.

## mechanical data

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



## absolute maximum ratings at 25°C ambient

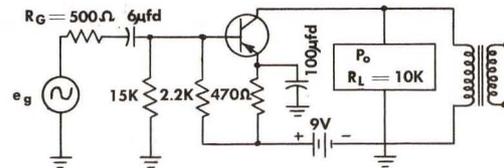
Collector Voltage	-20 v
DC Supply Voltage (For Inductive Load)	-10 v
Device Dissipation (Free Air)	50 mw
Operating Temperature	60 °C
Storage Temperature	-55°C to +75 °C

## design characteristics

				min.	design center	max.	units
$I_{C0}$	Collector Cutoff Current	$V_{CB} = -20\text{ V}$	$I_E = 0$	—	-8	-20	$\mu\text{A}$
$PG_e$	Power Gain*	$V_{CC} = -9\text{ V}$	$P_O = 2\text{ mW}$	37	—	42	db

## \*test circuit

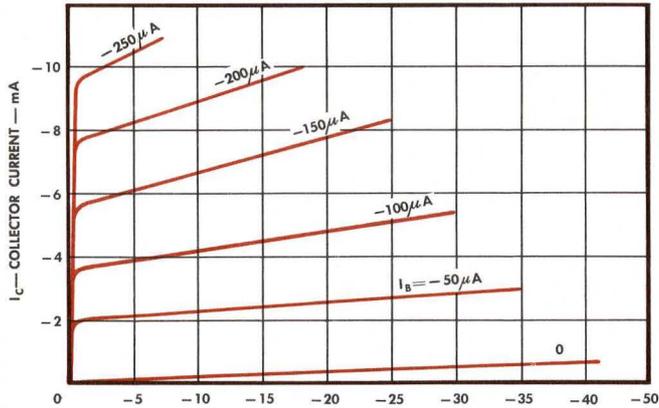
Collector Supply	-9 V
Emitter Current	2 mA
Power Output	2 mW
Frequency	1,000 cps
$R_L$ , Collector Load	10,000 Ohms
Driving Impedance	500 Ohms



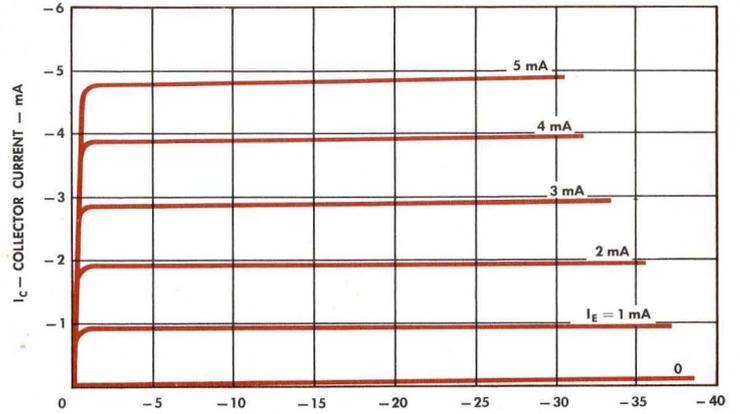
LICENSED UNDER BELL SYSTEM PATENTS

# 2N238/310

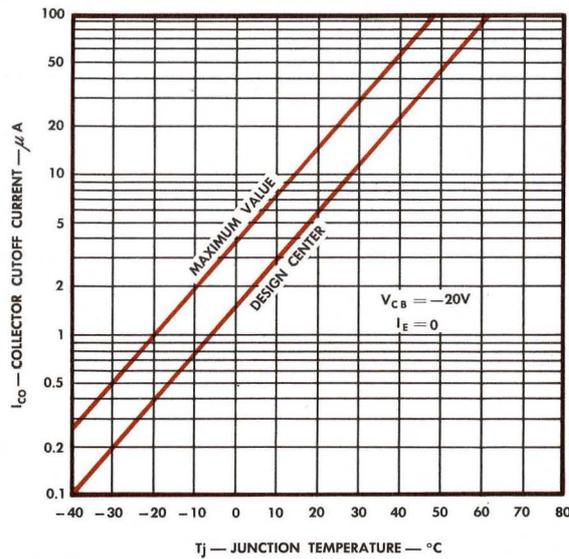
## TYPICAL CHARACTERISTICS



COMMON EMITTER COLLECTOR CHARACTERISTICS



COMMON BASE OUTPUT CHARACTERISTICS



COLLECTOR CUTOFF CURRENT VS. JUNCTION TEMPERATURE

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

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INCORPORATED  
6000 LEMMON AVENUE DALLAS 9, TEXAS