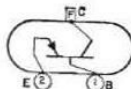


POWER TRANSISTOR

**2N2869/
2N301**

Germanium p-n-p type used in a wide variety of af power-amplifier and large-signal applications in commercial, industrial, and military equipment. It is used in class A and class B af-output-amplifier stages of



automobile radio receivers and mobile communications equipment. It provides excellent dc-to-dc and dc-to-ac power conversion. This type features high breakdown voltage, low saturation voltage, high large-signal beta, and a high dissipation capability. JEDEC No. TO-3 package; outline 5, Outlines Section.

MAXIMUM RATINGS

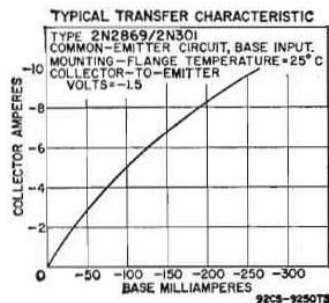
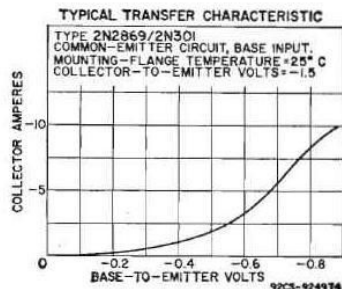
Collector-to-Base Voltage	-60 max	volts
Collector-to-Emitter Voltage	-50 max	volts
Emitter-to-Base Volts	-10 max	volts
Collector Current	-10 max	amperes
Emitter Current	10 max	amperes
Transistor Dissipation	-3 max	amperes
At mounting-flange temperatures up to 55°C	30 max	watts
At mounting-flange temperatures above 55°C	Derate 0.66 watt/°C	
Temperature Range:		
Operating (junction) and Storage	-65 to 100	°C
Lead Temperature (for 10 seconds maximum)	255 max	°C

CHARACTERISTICS

Collector-to-Base Breakdown Voltage (with collector ma = -5 and emitter current = 0)	-60 min	volts
Collector-to-Emitter Breakdown Voltage (with collector ma = -600 and base current = 0)	-50 min	volts
Emitter-to-Base Breakdown Voltage (with emitter ma = -2 and collector current = 0)	-10 min	volts
Collector-to-Emitter Saturation Voltage (with collector amperes = -10 and base amperes = -1)	-0.75 max	volt
Base-to-Emitter Voltage (with collector-to-base volts = -2 and collector amperes = -1)	-0.5 max	volt
Collector-Cutoff Current (with collector-to-base volts = -30 and emitter current = 0)	-0.5 max	ma
Collector-Cutoff Saturation Current (with collector-to-base volts = -0.5 and emitter current = 0)	-0.1 max	ma

In Common-Emitter Circuit

DC Forward Current-Transfer Ratio (with collector-to-emitter volts = -2 and collector amperes = -1)	50 to 165	
Gain-Bandwidth Product (with collector-to-emitter volts = -2 and collector amperes = -1)	450	Kc



TYPICAL OPERATION IN CLASS A AF POWER AMPLIFIER CIRCUIT

Mounting-flange temperature of 80°C

DC Supply Voltage	-14.4	volts
DC Collector-to-Emitter Voltage	-12.2	volts
DC Base-to-Emitter Voltage	-0.35	volt
Zero-Signal Collector Current	-0.9	ampere
Signal Frequency	400	cps
Signal-Source Impedance	10	ohms
Load Impedance	15	ohms
Power Gain	38	db
Maximum-Signal Power Output	5	watts
Circuit Efficiency (at power output of 5 watts)	45	per cent
Maximum Total Harmonic Distortion (at power output of watts)	5	per cent
Zero-Signal Collector Dissipation	11	watts

TYPICAL OPERATION IN CLASS B PUSH-PULL AUDIO POWER-AMPLIFIER CIRCUIT

Mounting-flange temperature of 80°C; values are for two transistors except as noted

DC Supply Voltage	-14.4	volts
Zero-Signal DC Base-to-Emitter Voltage	-0.13	volt
Zero-Signal DC Collector Current (per transistor)	-0.05	ampere
Peak Collector current (per transistor)	-2	ampere
Maximum-Signal DC Collector Current (per transistor)	-0.64	ampere
Signal Frequency	400	cps
Signal-Source Impedance per base	10	ohms
Load Impedance per collector	6	ohms
Power Gain	30	db
Maximum-Signal Power Output	12	watts
Maximum Total Harmonic Distortion (at power output of 12 watts)	5	per cent
Circuit Efficiency (at power output of 12 watts)	67	per cent
Collector Dissipation (per transistor at power output of 12 watts)	3	watts

