

Variable-Mu Twin Triode

9-PIN MINIATURE TYPE

GENERAL DATA

Electrical:

Heater, for Unipotential Cathodes:

Voltage (AC or DC)	6.3	volts
Current	0.365	amp

Direct Interelectrode Capacitances:

	<i>Without External Shield</i>	<i>With External Shield^a</i>	
Grid to plate (Each unit) . .	1.9	1.9	$\mu\mu\text{f}$
Plate to cathode (Each unit). .	0.18	0.17	$\mu\mu\text{f}$
Heater to cathode (Each unit). .	3	3 ^b	$\mu\mu\text{f}$
Plate of unit No.2 to plate of unit No.1.	0.04 max.	0.015 max.	$\mu\mu\text{f}$
Plate of unit No.2 to grid of unit No.1.	0.003 max.	0.003 max.	$\mu\mu\text{f}$
Grid of unit No.1 to cathode of unit No.2.	0.002 max.	0.002 max.	$\mu\mu\text{f}$

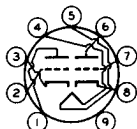
Characteristics, Class A₁ Amplifier (Each Unit):

Plate Voltage	90	90	90	volts
Grid Voltage.	-1.2	-5	-9	volts
Plate Resistance (Approx.).	2500	-	-	ohms
Transconductance.	12500	625	125	μmhos
Plate Current	15	-	-	ma

Mechanical:

Operating Position.	Any
Maximum Overall Length.	2-3/16"
Maximum Seated Length	1-15/16"
Length, Base Seat to Bulb Top (Excluding tip)	1-9/16" \pm 3/32"
Diameter.	0.750" to 0.875"
Dimensional Outline	See <i>General Section</i>
Bulb.	T6-1/2
Base.	Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW.	9AJ

- Pin 1 - Plate of Unit No.2
- Pin 2 - Grid of Unit No.2
- Pin 3 - Cathode of Unit No.2
- Pin 4 - Heater
- Pin 5 - Heater



- Pin 6 - Plate of Unit No.1
- Pin 7 - Grid of Unit No.1
- Pin 8 - Cathode of Unit No.1
- Pin 9 - Internal Shield



6ES8

AMPLIFIER — Cascode Type

Maximum Ratings, Design-Center Values:

PLATE SUPPLY VOLTAGE		
with plate current = 0.	550 max.	volts
PLATE VOLTAGE (Each Unit)	130 max.	volts
GRID VOLTAGE:		
Negative-bias value (Each Unit)	50 max.	volts
CATHODE CURRENT (Each Unit)	22 max.	ma
PLATE DISSIPATION (Each Unit)	1.8 max.	watts
HEATER-CATHODE VOLTAGE:		
<i>Unit No. 1:</i> ^c		
RMS voltage between cathode and heater.	50 max.	volts
<i>Unit No. 2:</i> ^d		
RMS voltage between cathode and heater ^e	50 max.	volts
DC voltage between cathode and heater ^e	130 max.	volts

Typical Operation:

In a cascode-type circuit with the grid of the output unit connected to a voltage divider^f

Supply Voltage.	180	volts
Plate Current	15	ma
Transconductance.	12500	μ mhos
Noise Figure ^g	6.5	db
Grid Voltage (Approx.) for transconductance (μ mhos) = 125.	-9	volts
Input Voltage for cross-modulation factor = 0.01 and transconductance (μ mhos) = 125	500	millivolts

Maximum Circuit Values:

Grid-Circuit Resistance (Each Unit)	1 max.	megohm
---	--------	--------

^a With external shield JEDEC No. 315 connected to cathode of unit under test except as noted.

^b With external shield JEDEC No. 315 connected to ground.

^c Grounded-cathode input unit—pins 6, 7, and 8.

^d Grounded-grid output unit—pins 1, 2, and 3.

^e Cathode positive with respect to heater.

^f In order not to exceed the maximum-rated plate voltage when the cascode-type amplifier is controlled, it is necessary to use a voltage divider for the grid of the grounded-grid output unit.

^g Measured with tube operating in a television tuner.

