

## BEAM-POWER PENTODE TYPE 8417

The 8417 is a glass octal, beam-power pentode designed for service as an output amplifier in high-fidelity, high-power sound systems. It has a 35 watt plate dissipation allowing design of push-pull amplifiers of 100 watts output. The 8417 features high power sensitivity and requires low drive for full power output. The 8417 is also suitable for use as a series tube in electronically regulated power supplies.

### ELECTRICAL

Cathode.....	Coated Unipotential
Heater:	
Voltage (ac or dc) .....	6.3 Volts
Current .....	1.6 Amperes
Direct Interelectrode Capacitances:	
Grid 1 - to - Plate .....	0.90 pf
Input .....	22 pf
Output .....	9.0 pf

### MECHANICAL

Bulb .....	T-12
Base .....	Plaskon, Short Shell Octal, 6-P In
Basing .....	7S
Mounting Position .....	Any

### CHARACTERISTICS

Plate Voltage .....	300	Volts
Screen Voltage .....	300	Volts
Grid No. 1 Voltage .....	-12	Volts
Plate Current .....	100	Ma.
Screen Current .....	5.5	Ma.
Transconductance .....	23000	Micromhos
Plate Resistance .....	16000	Ohms
Triode Amplification Factor .....	16.5	-
Grid 1 Cutoff Voltage (Note 1) .....	-37	Volts

### RATINGS

Design-Maximum Values:		
Plate Voltage .....	660 max.	Volts
Screen Voltage .....	500 max.	Volts
Plate Dissipation (Note 2) .....	35 max.	Watts
Screen Dissipation (Note 3) .....	5 max.	Watts
Cathode Current .....	200 max.	Ma.
Grid No. 1 Circuit Resistance:		
With Fixed Bias .....	0.1 max.	Megohm
With Cathode Bias .....	0.25 max.	Megohm
Heater-Cathode Voltage:		
Heater Negative with respect to Cathode		
Total DC + Peak .....	200 max.	Volts
Heater Positive with respect to Cathode		
DC Component .....	100 max.	Volts
Total DC + Peak .....	200 max.	Volts

### Push-Pull Class AB1 - Ultra-Linear (Note 4) Operation (Values for Two Tubes)

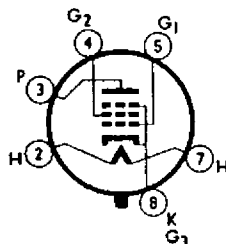
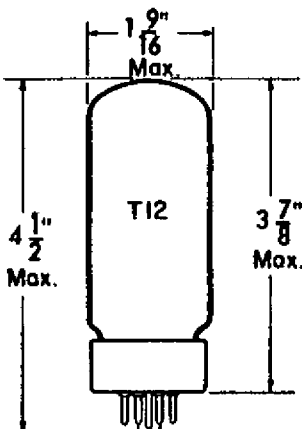
Plate Supply Voltage .....	455	Volts
Grid 1 Voltage .....	-25	Volts
Peak A.F. Grid-to-Grid Voltage .....	45	Volts
Zero Signal Plate Current .....	146	Ma.
Maximum Signal Plate Current .....	314	Ma.
Effective Load, Plate-to-Plate .....	3500	Ohms
Total Harmonic Distortion .....	2.5	Percent
Maximum Signal Power Output .....	70	Watts

### Push-Pull Class AB1 - Pentode Connection (Values for Two Tubes)

Plate Supply Voltage .....	400	560	Volts
Screen Supply Voltage .....	275	300	Volts
Grid 1 Voltage .....	-13	-15	Volts
Peak AF Grid-to-Grid Voltage .....	24	29	Volts
Zero Signal Plate Current .....	150	132	124 Ma.
Max. Signal Plate Current .....	294	290	Ma.
Zero Signal Screen Current .....	4.4	3.6	Ma.
Max. Signal Screen Current .....	34	36	Ma.
Effective Load, Plate-to-Plate .....	2800	4200	Ohms
Total Harmonic Distortion .....	2.5	2.5	Percent
Maximum Signal Power Output .....	65	100	Watts

### NOTES

1. For plate current of 1 milliampere.
2. The bulb becomes hot during operation. To ensure adequate cooling, it is essential that free circulation of air be provided around the bulb.
3. Screen dissipation may be permitted to reach 8 watts during the periods of maximum input of speech and music signals.
4. Screen tapped at 40% of primary turns. Stated plate current includes screen current.



Note: Pin-out changed to conform with 7S (actual production).

from JEDEC release #4321, July 1, 1963



Westinghouse Electric Corporation

05764  
4321B  
6/7/65

Electronic Tube Division      Box 284, Elmira, New York

May 25, 1965

Mr. G. F. Hohn, Manager  
EIA Engineering Laboratories  
32 Green Street  
Newark 2, New Jersey

Dear Mr. Hohn:

Please reregister type 8417 (registered on July 1, 1963 in Release Number 4321) as follows.

Item	As Registered	As Proposed	Units
Push-Pull Class AB1 Pentode Operation			
Grid 1 Voltage	-15	-15.5	Volts
Peak A-F Grid to Grid Voltage	29	31	Volts
Zero-Signal Plate Current	124	100	mA
Max-Signal Plate Current	290	270	mA
Zero-Signal Screen Current	3.6	3.4	mA
Max-Signal Screen Current	36	31	mA
Total Harmonic Distortion	2.5	2.0	Percent

Thank you.

Very truly yours

*J. A. Scott*

J. A. Scott  
Commercial Engineering

JAS/cb

