

May 15, 1958

HIGH FREQUENCY TWIN TRIODE TYPES 4BS8, 5BS8 and 6BS8

The 4BS8, 5BS8 and 6BS8 are 9-pin miniature twin triodes designed for use as low-noise VHF amplifiers in cascode operation. These types have high gain and high cascode transconductance. They are designed for operation with section 2 (pins 1, 2, and 3) as input section of the cascode circuit.

The 4BS8 and 5BS8 have been designed for use in receivers which employ series connected heaters, especially in television receivers where the picture-tube heater is in series with other heaters. When each is employed in this type of circuit with other tubes similarly designed having the same heater current rating, heater voltage surges across individual tubes are minimized inasmuch as heater warm-up characteristic is controlled.

ELECTRICAL:

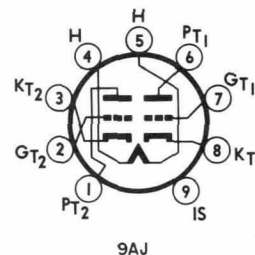
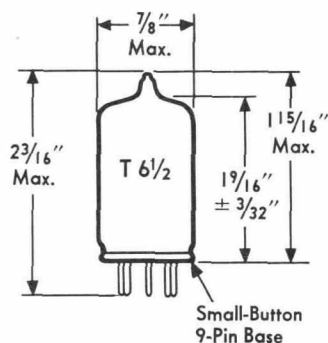
Cathode	Coated Unipotential		
Heater:	4BS8	5BS8	6BS8
Voltage (ac or dc)	4.5	5.6	6.3 Volts
Current	0.6	0.45	0.4 Ampere
Warm-Up Time (Approx.)▲	11	11	.. Seconds
Direct Interelectrode Capacitances: (Shielded)*			
	Unit 1	Unit 2	
Grid to Plate	1.15	1.15	uuf
Plate to Cathode	0.15	0.15	max. uuf
Heater to Cathode	2.60	2.6	uuf
Input	2.60		uuf
Output	1.2		uuf
Plate of Unit 1 to Plate of Unit 2		0.010	uuf
Plate of Unit 2 to Plate and Grid of Unit 1		0.024	uuf
Grounded Grid Operation:			
Input		5.0	uuf
Output		2.2	uuf

MECHANICAL:

Bulb	T-6-1/2
Base	Miniature 9-Pin (JETEC E9-1)
Outline	6-2
Basing	9AJ
Mounting Position	Any

MAXIMUM RATINGS:

Design-Center Values	
Plate Voltage	150 max. Volts
Cathode Current	20 max. Ma.
Plate Dissipation	2.0 max. Watts
Peak Heater-Cathode Voltage:	
Heater Positive with Respect to Cathode	200 max. Volts
Heater Negative with Respect to Cathode	200 max. Volts



CLASS A AMPLIFIER

Characteristics: (per unit)

Plate Voltage	150	Volts
Cathode Bias Resistor	220	Ohms
Amplification Factor	36	
Plate Resistance	5000	Ohms
Transconductance	7200	umhos
Plate Current	10	Ma.
Unit 2 Grid Cutoff Voltage □	-7	Volts

CASCADE OPERATION

Characteristics:

Plate Supply Voltage	250	Volts
Grid Voltage	-1	Volts
Plate Current	16	Ma.
Transconductance	10000	umhos
Grid Cutoff Voltage ■	-6	Volts

MAXIMUM CIRCUIT VALUE: (Each Unit)

Grid Circuit Resistance	0.5 max. Megohm
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● ± 6%

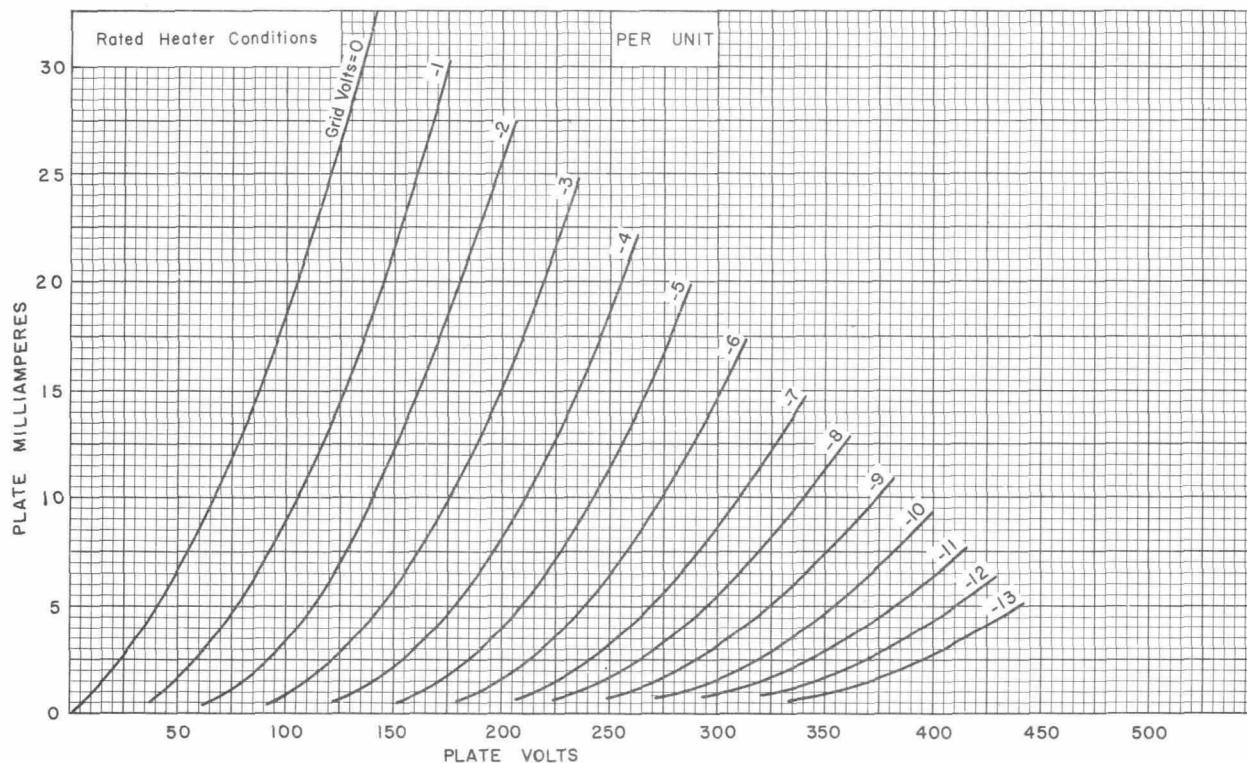
* With external shield JETEC No. 315 connected to ground.

▲ Heater Warm-up Time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three times rated heater voltage divided by rated heater current.

□ For plate current of 10 microamperes.

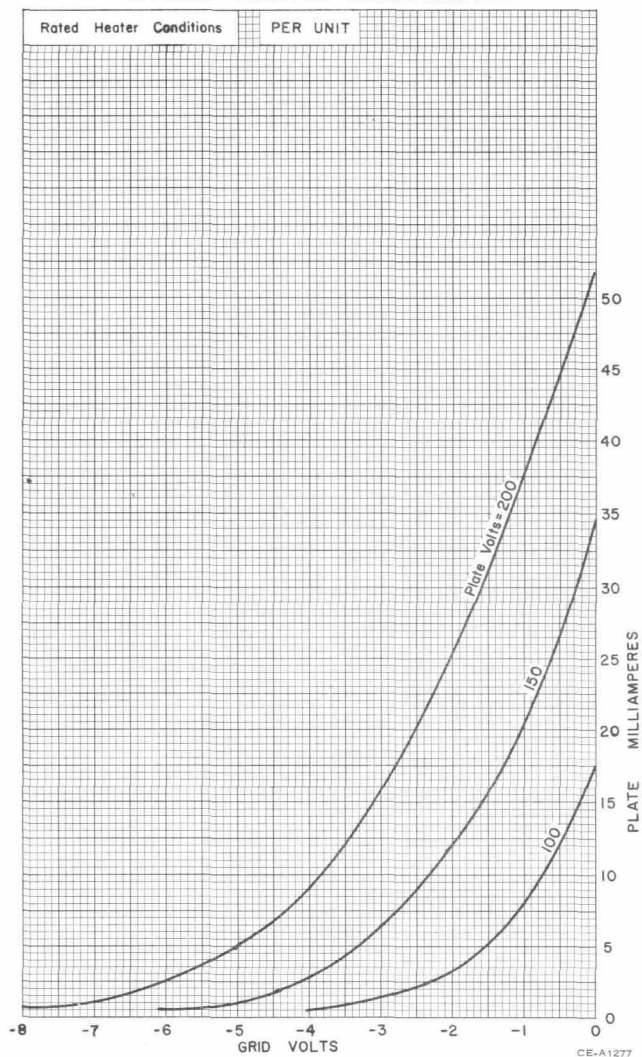
■ For transconductance of 50 umhos.

AVERAGE PLATE CHARACTERISTICS

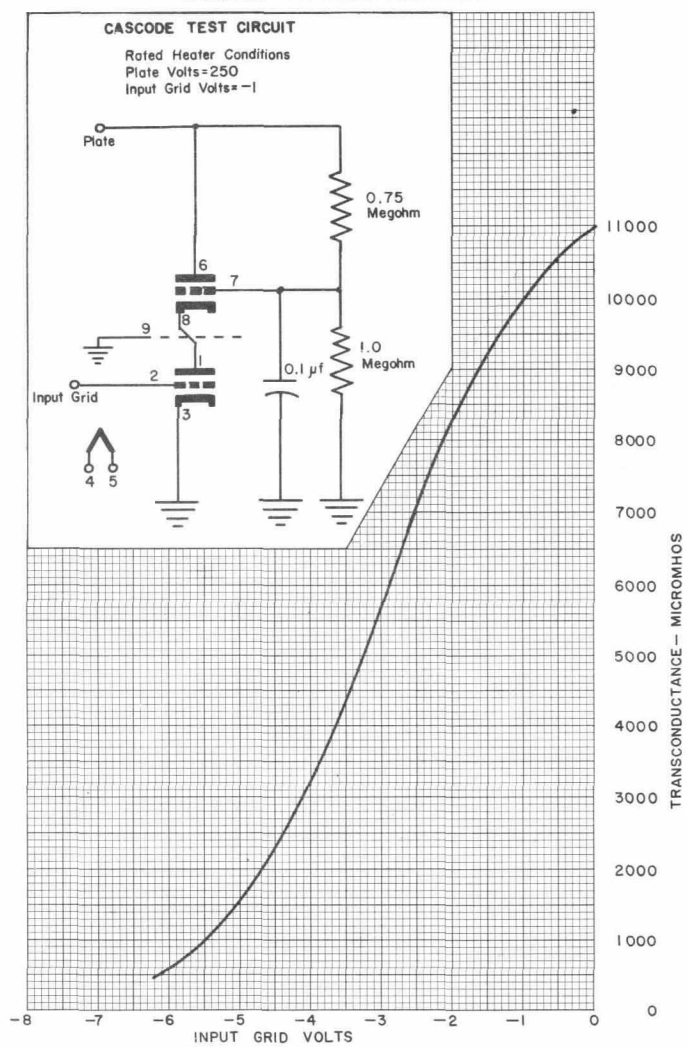


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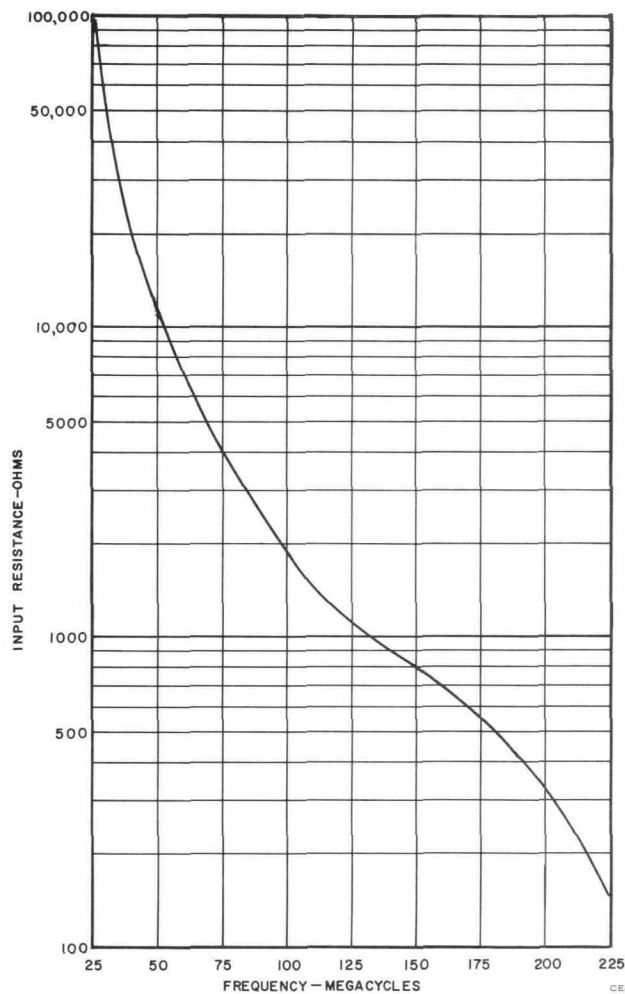
AVERAGE TRANSFER CHARACTERISTICS



CASCODE TRANSCONDUCTANCE

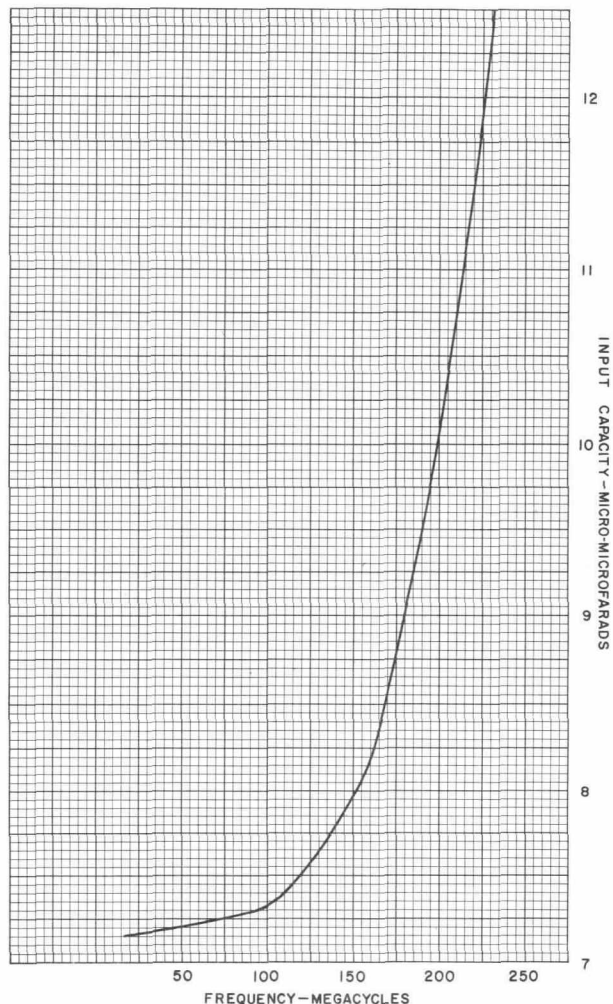


HOT INPUT RESISTANCE



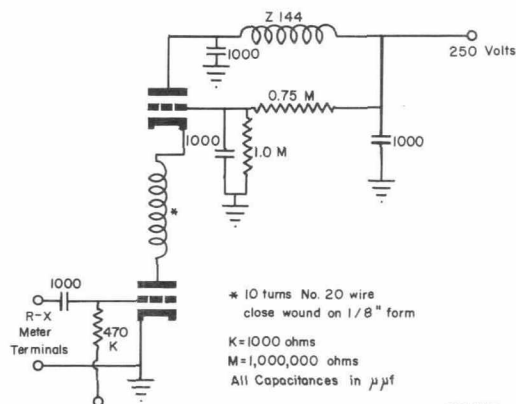
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HOT INPUT CAPACITY



CE-A1183

CASCADE TEST CIRCUIT
FOR
RESISTANCE AND CAPACITY



CE-A1184

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