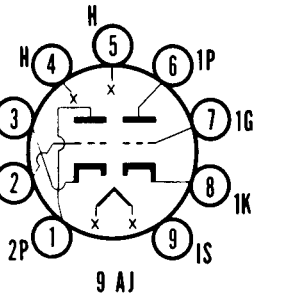
SYLVANIA TYPES 6ES8 4ES8

VHF DUO TRIODE



MECHANICAL DATA

Bulb	T-6½
Base	E9-1, Miniature Button 9-Pin
Outline	6-2
Basing	9AJ
Cathode	Coated Unipotential
Mounting Position	Any

ELECTRICAL DATA

HEATER CHARACTERISTICS

	4ES8	6ES8
Heater Voltage	4.0	6.3 Volts
Heater Current	600	365 Ma
Heater Cathode Voltage (Design Center Values)		
RMS, Voltage Between Cathode and Heater (Grounded Cathode Section)		50 Volts Max.
RMS, Voltage Between Cathode and Heater (Grounded Grid Section)		50 Volts Max.
Cathode Positive with Respect to Heater (Grounded Grid Section)		130 Volts Max.

DIRECT INTERELECTRODE CAPACITANCES (Each Section)[1]

	Unshielded	Shielded
Grid to Plate	1.85	1.85 μμf
Plate to Cathode	0.18	0.17 μμf
Heater to Cathode	2.7	2.7 μμf
Plate Section No. 1 to Plate Section No. 2	.040	.015 μμf Max.
Plate Section No. 2 to Grid Section No. 1	.003	.003 μμf Max.
Grid Section No. 1 to Cathode Section No. 2	.002	.002 μμf Max.

RATINGS (Design Center Values—Each Section)

Plate Supply Voltage (Ib = 0 Ma)	550 Volts Max.
Plate Voltage	130 Volts Max.
Plate Dissipation	1.8 Watts Max.
Cathode Current	22 Ma Max.
Negative Grid Voltage	50 Volts Max.
Grid Circuit Resistance	1.0 Megohm Max.

CHARACTERISTICS

Class A1 Amplifier (Each Section)

Plate Voltage	90 Volts
Grid Voltage	−1.2 Volts
Plate Current	15 Ma
Transconductance	12,500 μmhos

CASCODE OPERATING CHARACTERISTICS[2]

Supply Voltage	180 Volts
Plate Current	15 Ma
Transconductance	12,500 μmhos
Noise Figure[3]	6.5 db
Ec for gm = 125 μa (approx.)	−9.0 Volts
Input Voltage for Cross Modulation Factor of 1% at gm = 125 μmhos	500 MV

NOTES:

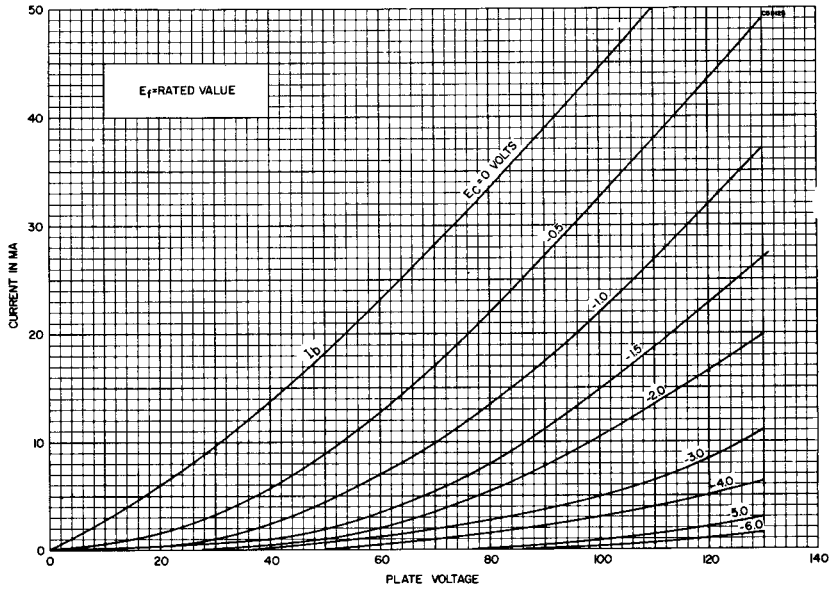
1. Section No. 1 (grounded cathode input section) connects to Pins 6, 7, and 8. Section No. 2 (grounded grid output section) connects to Pins 1, 2, and 3.
2. The grid of the output section, Section No. 2, is connected to a potentiometer.
3. Noise figure measurements taken with tube operating in a TV tuner.

APPLICATION

Sylvania Types 4ES8 and 6ES8 are semi-remote cutoff double triodes designed for use as cascode VHF amplifiers. Types 4ES8 and 6ES8 feature extremely high gm, low capacitances, and low noise.
Type 4ES8 is designed for series heater string applications.

SYLVANIA TYPES 6ES8 (Cont'd)
4ES8

AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS