816

HALF-WAVE MERCURY-VAPOR RECTIFIER

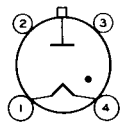
GENERAL DATA

Electrical:

	Min.	Av.	Max.	
Filament, Coated:				
Voltage	2.25	2.5	2.75	ac volts
Current at 2.5 volts	–	2	2.2	amp
Heating time at rated voltage	10	–	–	sec
Peak Tube Voltage Drop (Approx.)	–	15	–	volts

Mechanical:

Operating Position . . . . . .Vertical, base down
Maximum Overall Length . . . . . 4-11/16"
Seated Length. . . . . 3-15/16" ± 1/8"
Maximum Diameter . . . . . 1-9/16"
Weight (Approx.) . . . . . 1 oz
Bulb ST12
Cap. . . . . .Small (JETEC No.C1-1)
Socket . . . . . .Johnson No.122-224, or equivalent
Base . . . . . .Small-Shell Small 4-Pin (JETEC No.A4-5)
Basing Designation for BOTTOM VIEW 4P



Pin 1 – Filament
Pin 2 – No Connection
Pin 3 – No Connection
Pin 4 – Filament, Cathode Shield
Cap – Anode

Temperature Control:

Heating—When the ambient temperature is so low that the normal rise of condensed-mercury temperature above the ambient temperature will not bring the condensed-mercury temperature up to the minimum value of the operating ranges specified under ***Maximum Ratings***, some form of heat-conserving enclosure or auxiliary heater will be required.

Cooling—When the operating conditions are such that the maximum value of the operating condensed-mercury-temperature range is exceeded, provision should be made for forced-air cooling sufficient to prevent exceeding the maximum value.

Temperature Rise of Condensed Mercury to Equilibrium Above Ambient Temperature (Approx.):		
No load	22	°C
Full load	26	°C

←Indicates a change.

RCA

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Maximum Ratings, *Absolute Values: For supply frequency of 60 cps*

	Operating Condensed-Mercury-Temperature Range 20° to 60° C	
PEAK INVERSE ANODE VOLTAGE	7500 max.	volts
ANODE CURRENT:		
Peak	500 max.	ma
Average#	125 max.	ma
→ Fault, for duration of 0.1 second maximum	5 max.	amp

Averaged over any interval of 30 seconds maximum.

OPERATING CONSIDERATIONS

Shields and rf filter circuits should be provided for the 816 if it is subjected to extraneous high-frequency fields during operation. These fields tend to produce breakdown effects in mercury vapor and are detrimental to tube life and performance. When shields are used, special attention must be given to providing adequate ventilation and to maintaining normal condensed-mercury temperature. Rf filters are employed to prevent damage caused by rf currents which might otherwise be fed back into the rectifier tubes.

→ indicates a change.

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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For Circuit Figures, see Front of this Section

CIRCUIT	MAX. TRANS. SEC. VOLTS (RMS) E	APPROX. DC OUTPUT VOLTS TO FILTER E_{av}	MAX. DC OUTPUT AMPERES I_{av}	MAX. DC OUTPUT KW TO FILTER P_{dc}
Fig. 1 **Half-Wave** **Single-Phase** In-Phase Operation	5300□	2400	0.125	0.3
Fig. 2 **Full-Wave** **Single-Phase** In-Phase Operation	2600□	2400	0.25	0.6
Fig. 3 **Series** **Single-Phase** In-Phase Operation	5300□	4800	0.25	1.2
Fig. 4 **Half-Wave** **Three-Phase** In-Phase Operation	3000□	3600	0.75	2.7
Fig. 5 **Parallel** **Three-Phase** Quadrature Operation	3000□	3600	1.5	5.4
Fig. 6 **Series** **Three-Phase** Quadrature Operation	3000□	7200	0.75	5.4
Fig. 7 **Half-Wave** **Four-Phase** Quadrature Operation	2600□	3500	*Resistive Load* 0.45 *Inductive Load* 0.5	*Resistive Load* 1.55 *Inductive Load* 1.75
Fig. 8 **Half-Wave** **Six-Phase** Quadrature Operation	2600□	3600	*Resistive Load* 0.47 *Inductive Load* 0.5	*Resistive Load* 1.7 *Inductive Load* 1.8

□ For maximum peak inverse anode voltage of 7500 volts and condensed-mercury-temperature range of 20° to 60° C.

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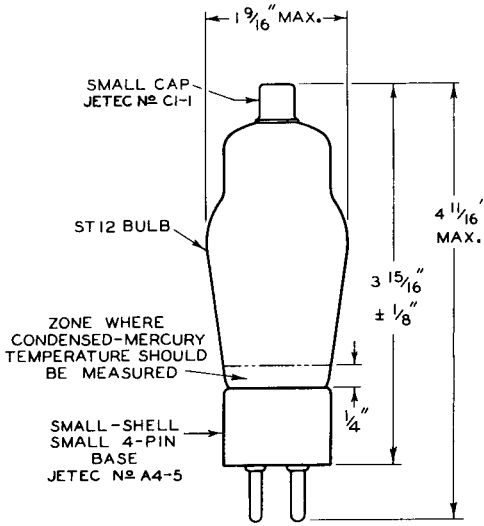

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