



816

816

HALF-WAVE MERCURY-VAPOR RECTIFIER

GENERAL DATA

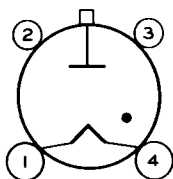
Electrical:

	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" $\pm$ 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 Connec-
tion
Pin 3—No Connec-
tion



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.



HALF-WAVE MERCURY-VAPOR RECTIFIER

HALF-WAVE RECTIFIER

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.



816

816

HALF-WAVE MERCURY-VAPOR RECTIFIER

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	Resis- tive Load 0.45	Induc- tive Load 0.5 Resis- tive Load 1.55 Induc- tive Load 1.75
Fig. 8 Half-Wave Six-Phase Quadrature Operation	2600 [□]	3600	Resis- tive Load 0.47	Induc- tive Load 0.5 Resis- tive Load 1.7 Induc- tive Load 1.8

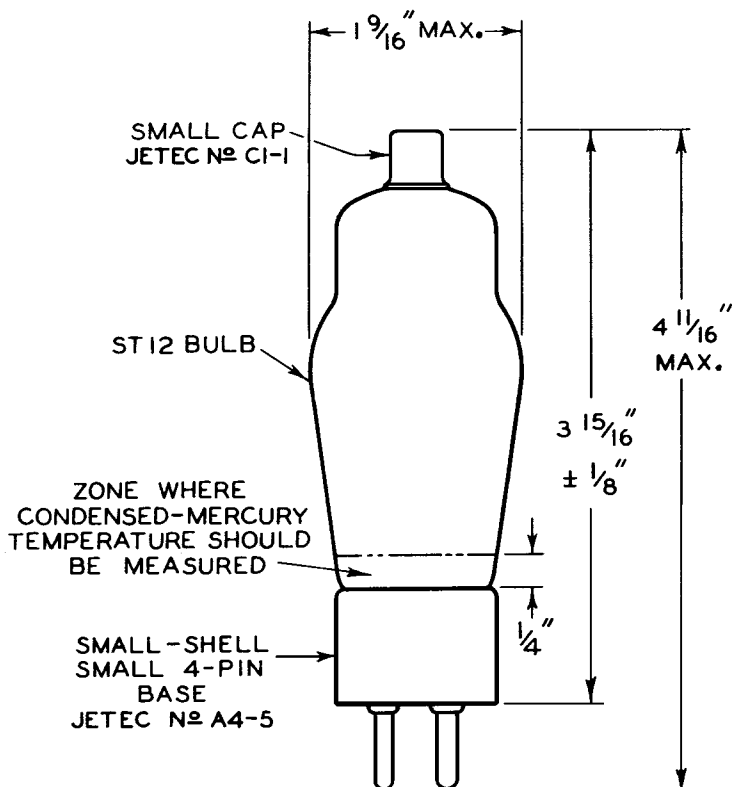
[□] For maximum peak inverse anode voltage of 7500 volts and condensed-mercury-temperature range of 20° to 60° C.

816



816

HALF-WAVE MERCURY-VAPOR RECTIFIER



92CM-6277R4