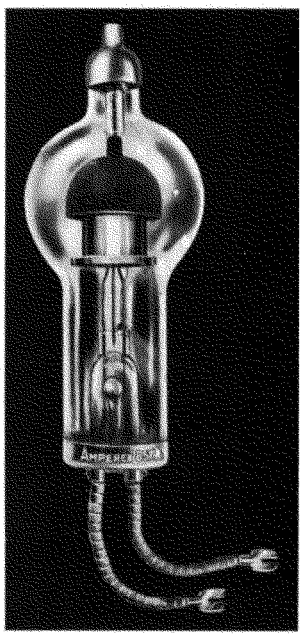
AMPEREX MERCURY VAPOR RECTIFIER 857-B



FILAMENT

A.C. Voltage	5.0
Current (amperes)	30.0
Preheating Period (Seconds)*	300

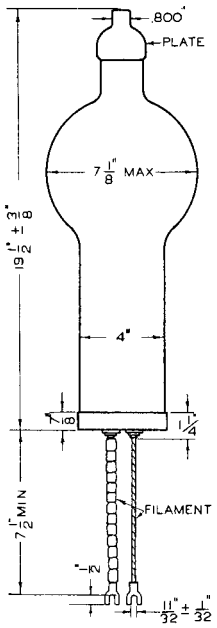
*Before plate voltage is applied.

MAXIMUM RATINGS

For Operation at Supply Frequency Up to 150 Cycles

	Condensed Mercury Temperature Range	
	25°C. to 60°C.	30°C. to 40°C.
Peak Inverse Voltage	10000	22000
Peak Plate Current (amps)	40.0	40.0
Average Plate Current (amps)*	10.0	10.0
Approx. Tube Voltage Drop	10	10

*Averaged over period of 30 seconds.



MAXIMUM OUTPUTS IN TYPICAL CIRCUITS

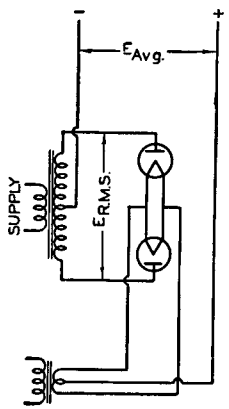
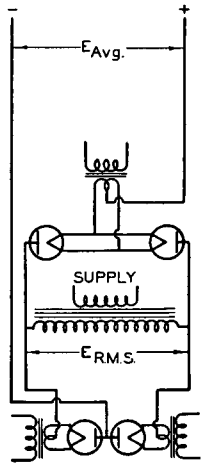
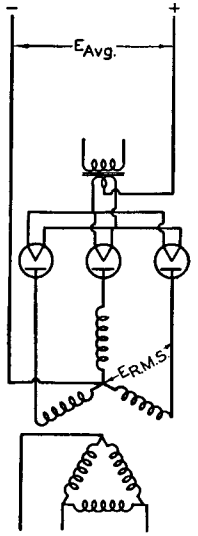
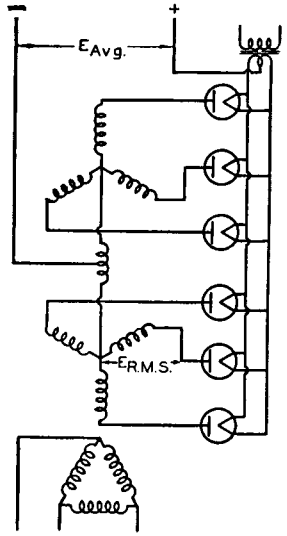
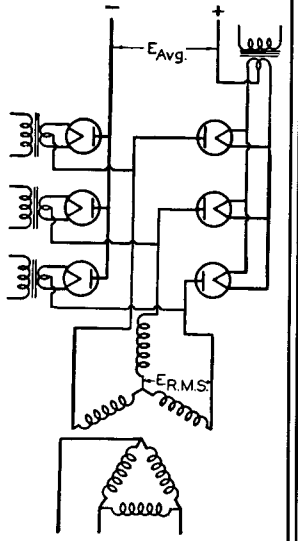
	A.C. Input Volts R.M.S.	D.C. Output Volts to Filter	Max. D.C. Load Current Amperes
Single-Phase Full Wave (2 Tubes)	7750*	7000	20
Single-Phase Full Wave Bridge (4 Tubes)	15500†	14000	20
Three-Phase Half Wave (3 Tubes)	9000‡	10500	30
Three-Phase Double Y-Parallel (6 Tubes)	9000‡	10500	60
Three-Phase Full Wave (6 Tubes)	9000‡	21000	30

*Per Tube. †Total. ‡Per Leg.

NOTE: For Out-Of-Phase Filament Excitation information see "Maximum Peak Plate Current" and "Maximum Average Plate Current", pp. 3 and 4, "General Information and Application Notes" section, "Mercury Vapor High Voltage RECTIFIER TUBES".

AMPEREX

857-B

RECTIFIER CIRCUIT	SINGLE PHASE FULL-WAVE 2 TUBES	SINGLE PHASE FULL-WAVE 4 TUBES	THREE PHASE HALF-WAVE	THREE PHASE DOUBLE–Y	THREE PHASE FULL-WAVE
Conditions assumed for following relations 1. Sine-Wave Supply 2. Balanced Phase Voltages 3. Zero Tube Drop 4. Pure Resistance Load 5. No Filter Used NOTE: All rectifier filaments supplied by single phase transformers, with secondaries insulated for voltages greater than the Maximum Peak Inverse Voltage.	FIG. 1 	FIG. 2 	FIG. 3 	FIG. 4 	FIG. 5 
E Average	.450 *E* rms .318 *E* max	.900 *E* rms .636 *E* max	1.170 *E* rms .827 *E* max	1.170 *E* rms .827 *E* max	2.34 *E* rms 1.65 *E* max
E Inverse	3.14 *E* avg	1.57 *E* avg	2.09 *E* avg	2.09 *E* avg	1.045 *E* avg
I Average	.636 *I* max	.636 *I* max	.827 *I* max	1.91 *I* max	.955 *I* max
Ripple Frequency	2 X Supply Freq.	2 X Supply Freq.	3 X Supply Freq.	6 X Supply Freq.	6 X Supply Freq.
Ripple Voltage (Rms)	48.3%	48.3%	18.3%	4.2%	4.2%
† Ratio $\frac{\text{Secondary Kva}}{\text{D.C. Output-Kw}}$	1.57	1.11	1.48	1.48	1.05
† Ratio $\frac{\text{Primary Kva}}{\text{D.C. Output-Kw}}$	1.11	1.11	1.21	1.05	1.05

† These ratios assume that a choke input filter is used to maintain the output current substantially constant.