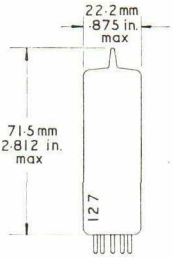
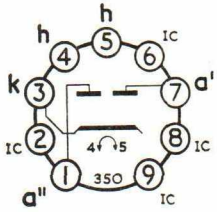


FULL-WAVE RECTIFIER



B9A Base

GENERAL

Heater Voltage	V_h	6·3	V
Heater Current	I_h	1·0	A

RATINGS

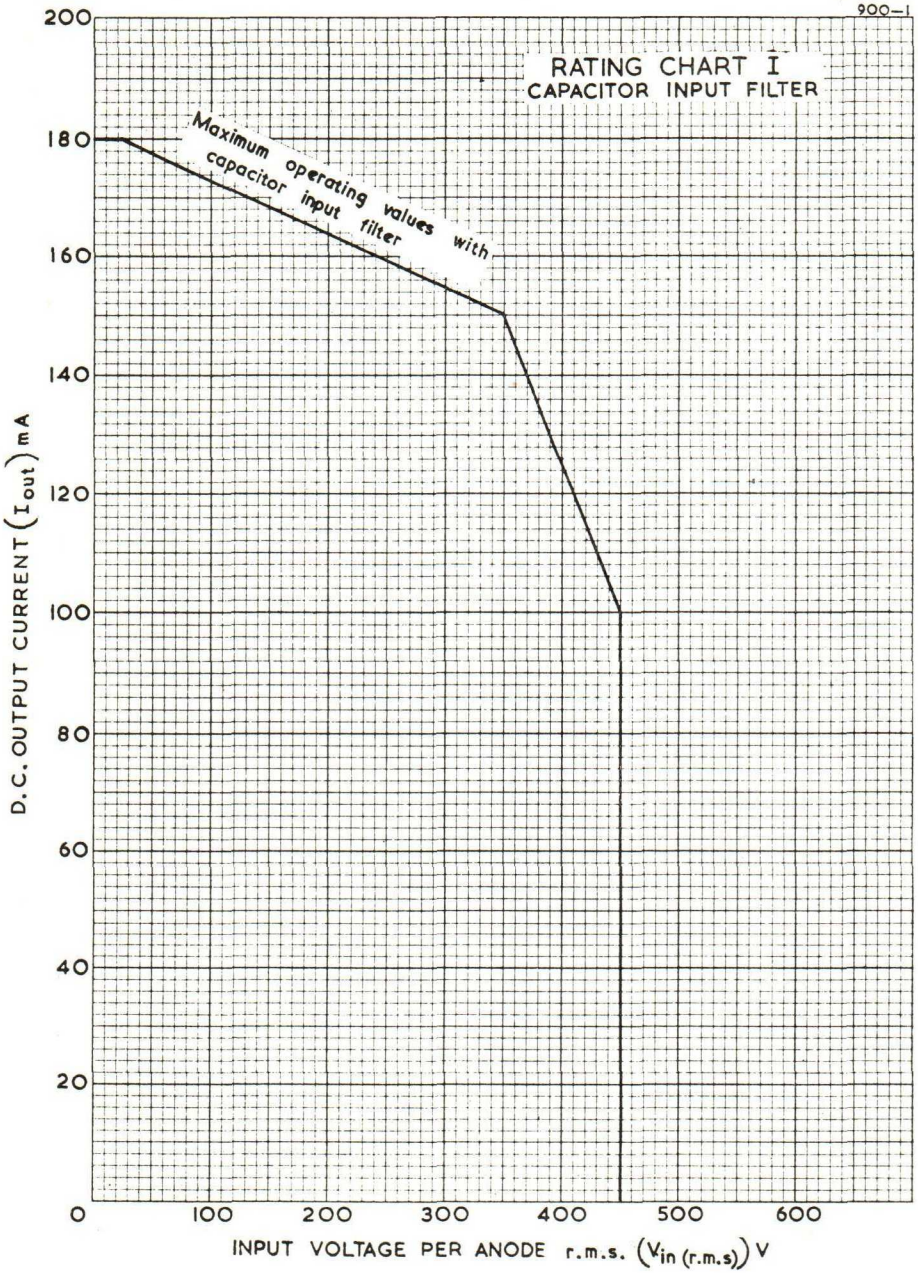
Maximum Peak Inverse Voltage	PIV_{max}	1·3	kV
Maximum Peak Current (each Anode)	$i_{a(pk)max}$	500	mA
Maximum Surge Current (each Anode)	$i_{a(sur)max}$	1·8	A
Maximum Anode Supply Voltage	$V_{a(b)max}$	See Rating Chart 1	
Maximum D.C. Output Current	$I_{out(max)}$	See Rating Chart 1	
Maximum Heater to Cathode Voltage (Heater Negative)	$V_{h-k(max)}$	500	V
Maximum Reservoir Capacitor	C_{max}	50	μF

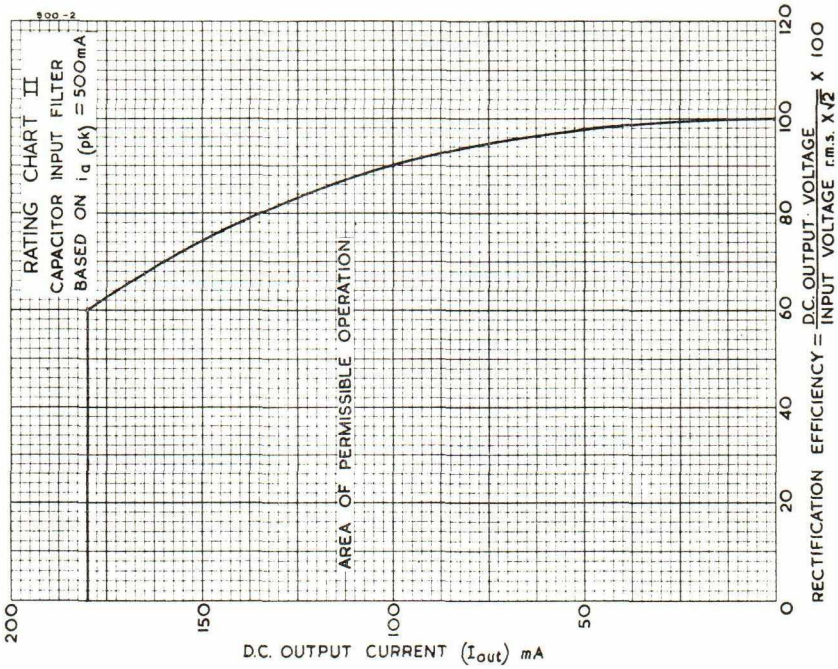
TYPICAL OPERATION AS A FULL-WAVE RECTIFIER

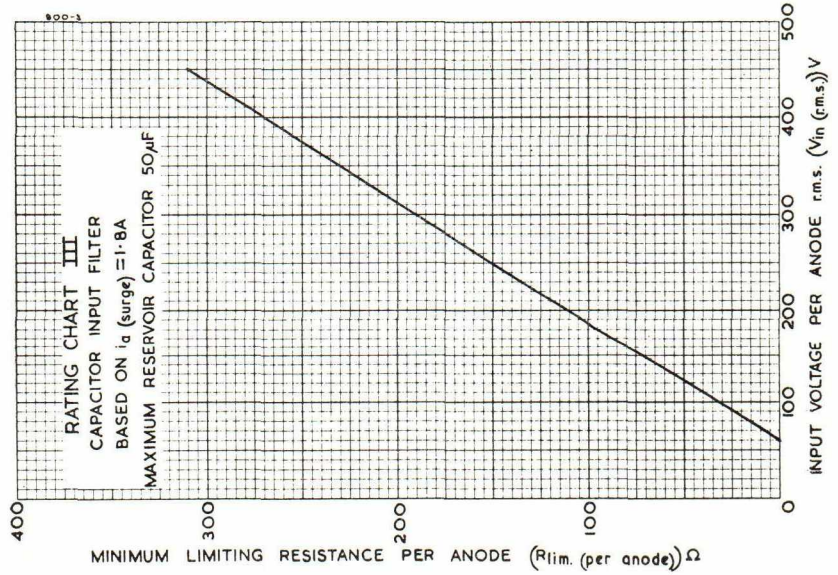
CAPACITOR INPUT

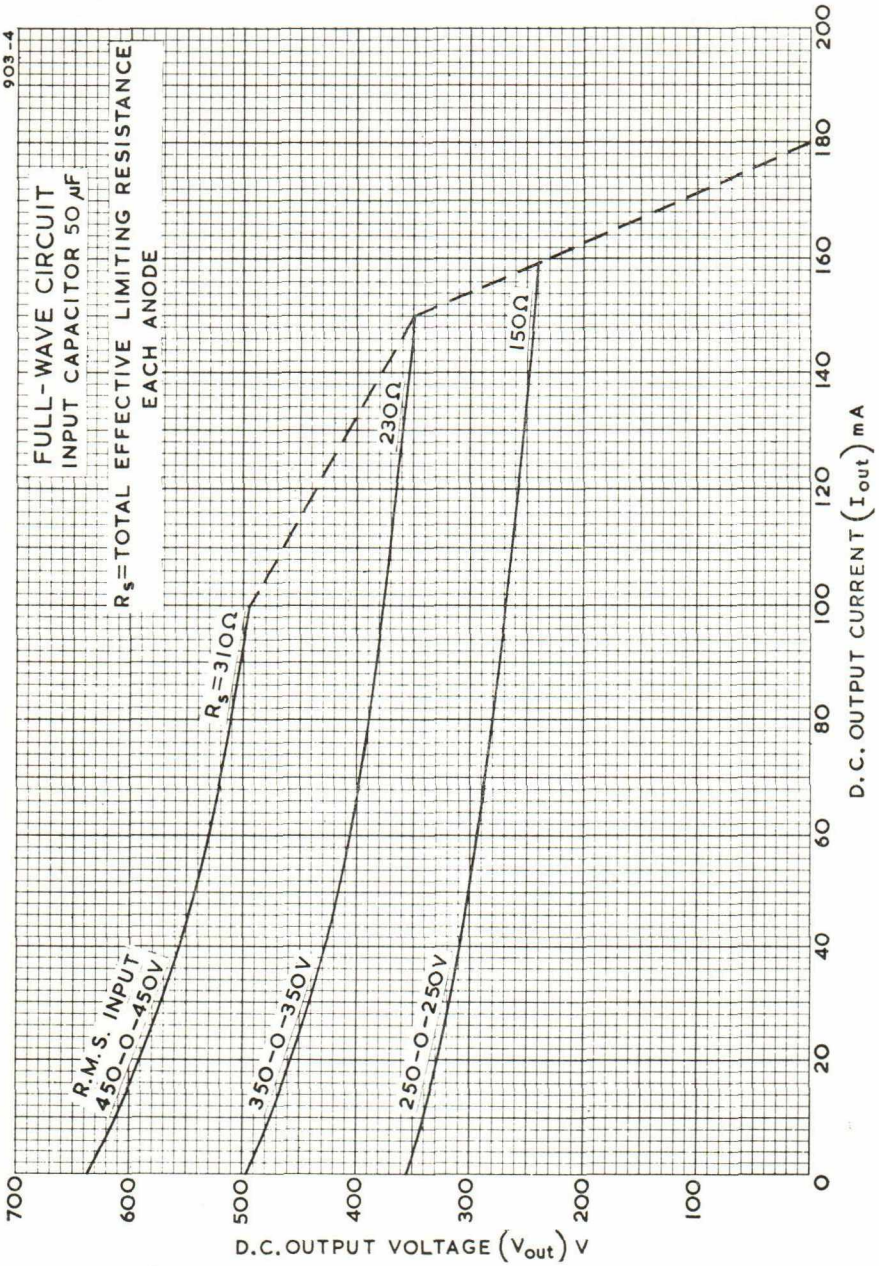
Input Voltage per Anode (r.m.s.)	$V_{in(r.m.s.)}$	250	350	450	V
D.C. Output Current	I_{out}	160	150	100	mA
D.C. Output Voltage	V_{out}	245	352	497	V
Limiting Resistance each Anode	R_{lim} (per anode)	150	230	310	Ω
Reservoir Capacitor	C	50	50	50	μF

MOUNTING POSITION—Unrestricted


900-1
RATING CHART I
CAPACITOR INPUT FILTER
Maximum operating values with capacitor input filter
200
180
160
140
120
100
80
60
40
20
0
100
200
300
400
500
600
D.C. OUTPUT CURRENT (I_{out}) mA
INPUT VOLTAGE PER ANODE r.m.s. ($V_{in\ (r.m.s)}$) V


RATING CHART II
CAPACITOR INPUT FILTER
BASED ON ia (pk) = 500mA
AREA OF PERMISSIBLE OPERATION
D.C. OUTPUT CURRENT (Iout) mA
RECTIFICATION EFFICIENCY = D.C. OUTPUT VOLTAGE / INPUT VOLTAGE r.m.s. X √2 X 100
200
150
100
50
0
20
40
60
80
100
120


RATING CHART III
CAPACITOR INPUT FILTER
BASED ON ia (surge) = 1·8A
MAXIMUM RESERVOIR CAPACITOR 50μF
MINIMUM LIMITING RESISTANCE PER ANODE (Rlim. (per anode)) Ω
INPUT VOLTAGE PER ANODE r.m.s. (Vin (r.m.s.)) V
400
300
200
100
0
100
200
300
400
500


903-4
FULL-WAVE CIRCUIT
INPUT CAPACITOR 50 μF
Rs=TOTAL EFFECTIVE LIMITING RESISTANCE
EACH ANODE
R.M.S. INPUT
450-0-450V
350-0-350V
250-0-250V
Rs=310Ω
230Ω
150Ω
D.C. OUTPUT VOLTAGE (Vout) V
D.C. OUTPUT CURRENT (Iout) mA
0
100
200
300
400
500
600
700
20
40
60
80
120
140
160
180