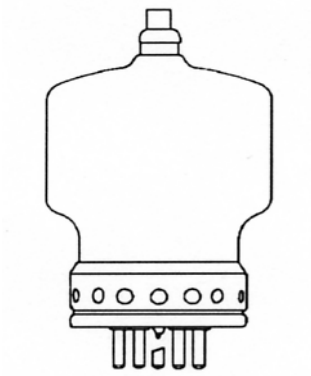


PL 175A

Beam Pentode

The PL-175A is a 400-watt plate dissipation beam pentode which incorporates the exclusive Penta vane-type suppresor grid. In most cases, the tube may be used to replace directly the 4-400A, with no circuit modifications, and only slight readjustment of tuning controls. In Class-AB1 amplifier applications, such replacement can result in 20% to 40% greater output. The suppresor grid terminates in the tube base shell, and is designed to be operated at zero voltage. The base shell must be grounded to the chassis by means of suitable spring clips.

ELECTRICAL CHARACTERISTICS

Filament - Thoriated Tungsten		
Voltage	5.0	volts
Current	14.5	amperes
Grid-Screen Amplification Factor		4.5
Interelectrode Capacitances		
Grid - Plate	0.06	μμfd
Input	15.1	μμfd
Output	9.8	μμfd

MECHANICAL CHARACTERISTICS

Base	5-pin, metal shell	
Maximum Overall Dimensions		
Length	6.63	inches
Diameter	3.56	inches
Mounting Position	Vertical, base up or down	

MAXIMUM RATINGS - CCS (Continuous Commercial Service)

	Class - AB_1 R-F or Audio	Class - C CW or FM	
DC Plate Voltage	4000	4000	volts
DC Screen Voltage	1000	600	volts

PENTA LABORATORIES
9740 COZYCROFT AVENUE * CHATSWORTH * CALIFORNIA 91311
(800) 421-4219 * (818) 882-3872 * FAX: (818) 882-3968

DC Suppresor-Grid Voltage	100	100	volts
DC Plate Current	350	350	ma
Screen-Grid Input	25	25	watts
Plate Dissipation	400	400	watts

TYPICAL OPERATION - CLASS C C-W OR FM AMPLIFIER

Grounded-Cathode Circuit

DC Plate Voltage	2000	2000	2500	2500	3000	3000	4000	4000	volts
DC Screen-Grid Voltage	500	600	500	600	500	600	500	600	volts
DC Suppresor-Grid Voltage	0	0	0	0	0	0	0	0	volts
DC Control-Grid Voltage	-160	-180	-160	-180	-160	-180	-180	-200	volts
DC Plate Current	350	350	350	350	350	350	350	350	ma
DC Screen-Grid Current	46	42	41	40	38	36	34	29	ma
DC Control-Grid Current	14	8	12	7	11	6	10	6	ma
Peak R-F Control-Grid Voltage	226	226	218	226	214	218	236	239	volts
Driving Power (Approx)	3.1	1.8	2.6	1.6	2.4	1.3	2.4	1.4	watts
Plate Power Input	700	700	875	875	1050	1050	1400	1400	watts
Plate Dissipation (Approx)	200	190	230	220	275	265	360	345	watts
Useful Power Output	460	190	230	220	275	265	360	345	watts

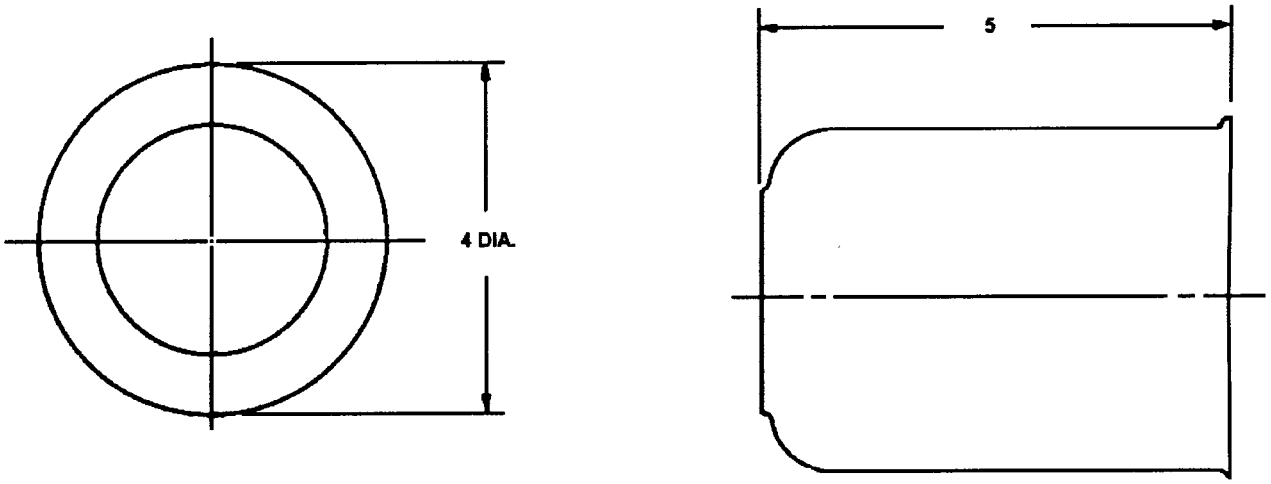
TYPICAL OPERATION - CLASS AB1 LINEAR R-F AMPLIFIER

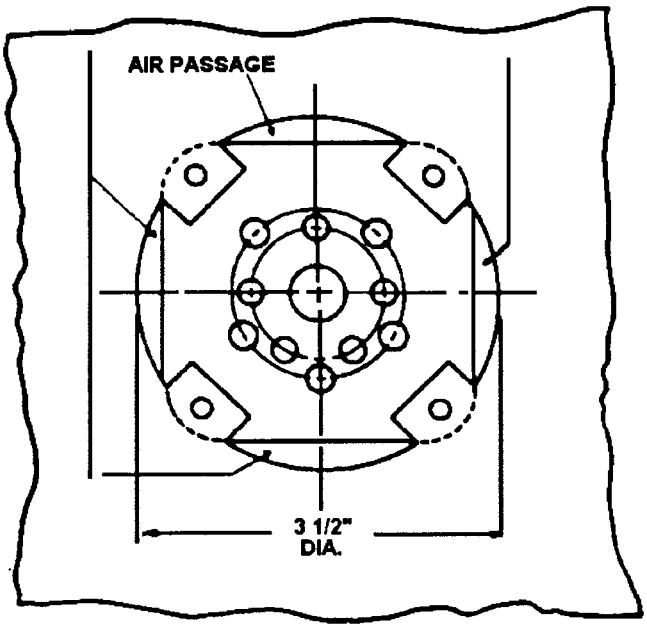
Single-Sideband, Suppressed Carrier; Grounded-Cathode Circuit

DC Plate Voltage	2000	2500	3000	3500	volts
DC Screen-Grid Voltage	750	750	750	750	volts
DC Suppressor-Grid Voltage	0	0	0	0	volts
DC Control-Grid Voltage	-135	-143	-150	-160	volts
Zero-Signal DC Plate Current	125	100	80	75	ma
Zero-Signal DC Screen Current	3	1	1	1	ma
Maximum-Signal DC Plate Current	350	350	350	350	ma
Maximum-Signal DC Screen Current	37	35	29	24	ma
Intermodulation Distortion Level					
Third Order	-39	-34	-31	-31	db
Fifth Order	-42	-41	-40	-40	db
Maximum-Signal Plate Power Input	700	875	1050	1225	watts
Maximum-Signal Plate Dissipation (approx)	225	265	305	345	watts
Maximum-Signal Useful Power Output	445	570	680	790	watts

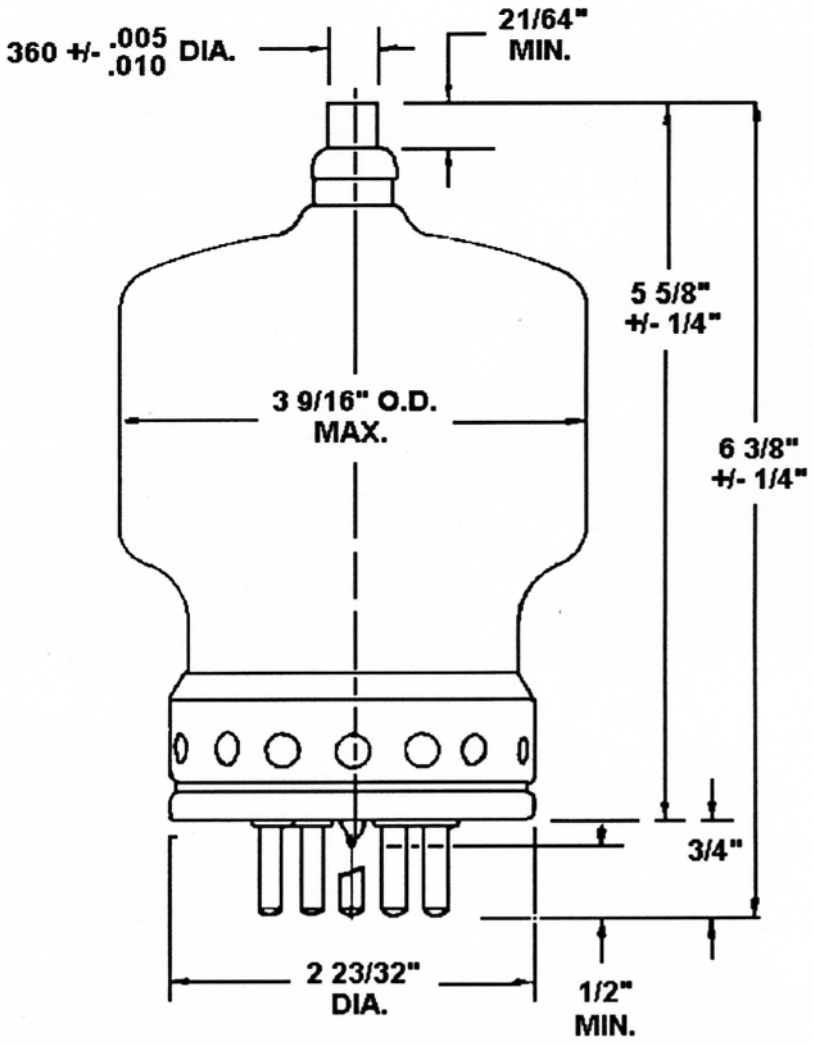
COOLING

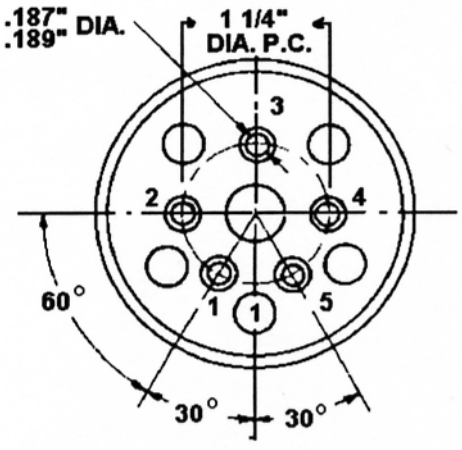
Forced air cooling of the seals at the base end of the PL-175A is required in all classes of service. A flow of 5 c.f.m. of cooling air should be passed through the base. Adequate envelope cooling at 400 watts plate dissipation requires 15 c.f.m. of cooling air past the envelope and across the plate seal. Proper distribution of cooling air may be obtained by the use of a type PL-C1 chimney, with chassis cut out as shown below.

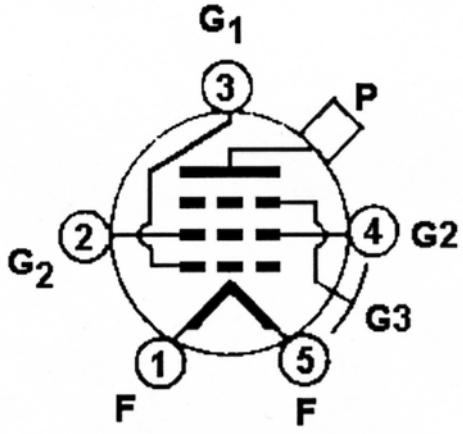


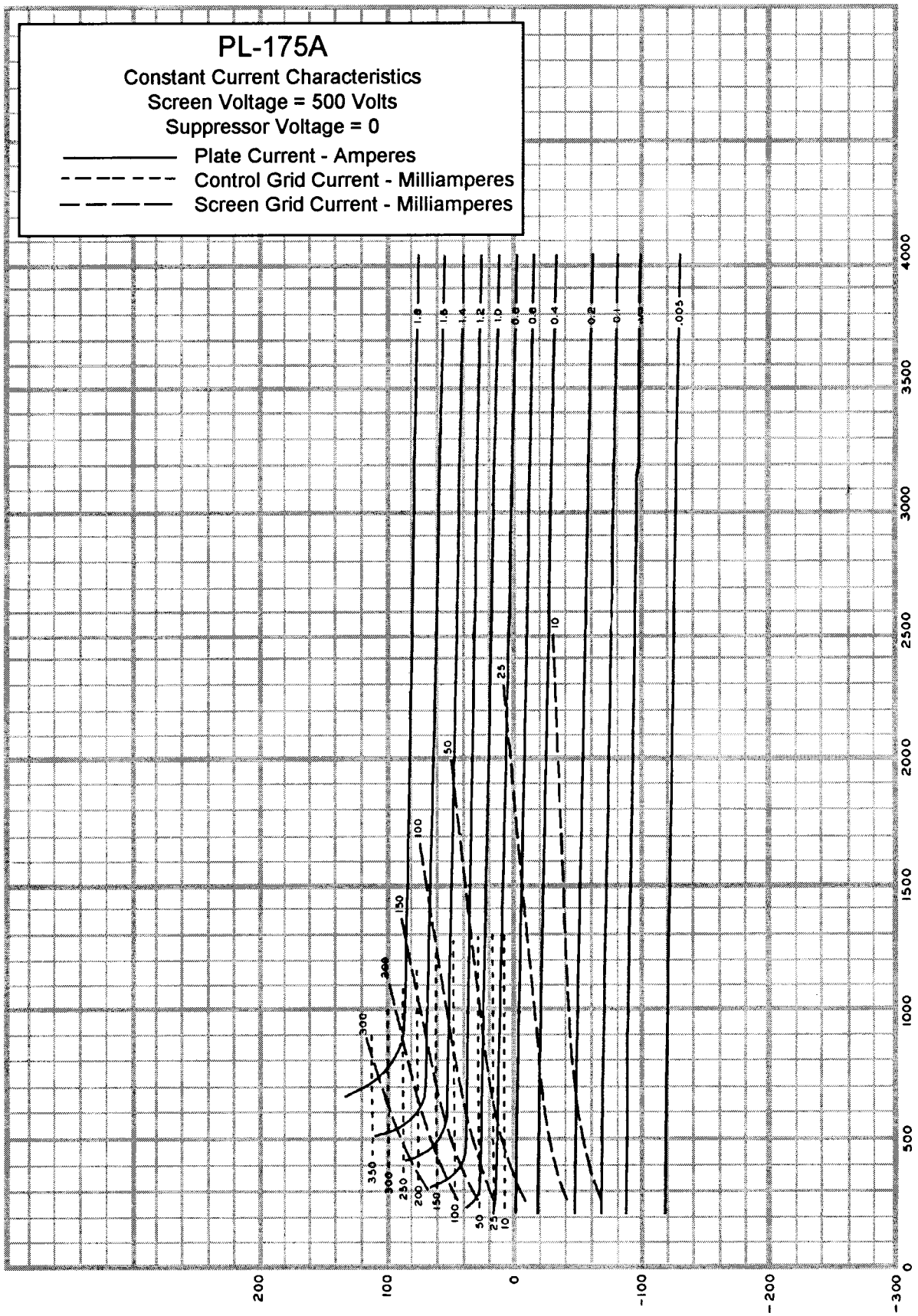


CHASSIS CUT-OUT AND SOCKET MOUNTING FOR PROPER AIR DISTRIBUTION FROM PRESSURIZED CHASSIS (JOHNSON NO. 122-275 SOCKET


360 +/- .005 .010 DIA.
21/64" MIN.
5 5/8" +/- 1/4"
3 9/16" O.D. MAX.
6 3/8" +/- 1/4"
3/4"
2 23/32" DIA.
1/2" MIN.


.187" .189" DIA.
1 1/4" DIA. P.C.
3
2
4
1
5
60°
30°
30°


G1
3
P
2
4
G2
G2
G3
1
5
F
F


PL-175A
Constant Current Characteristics
Screen Voltage = 500 Volts
Suppressor Voltage = 0
Plate Current - Amperes
Control Grid Current - Milliamperes
Screen Grid Current - Milliamperes
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.1
.005
300
250
200
150
100
50
25
10
4000
3500
3000
2500
2000
1500
1000
500
0
200
100
0
-100
-200
-300