Issued 1-40
Type HY30Z

Tentative Specifications

Engineering Bulletin
30Z - 1

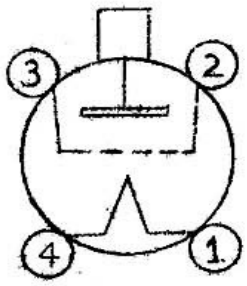
GENERAL CHARACTERISTICS..

Filament voltage (AC or DC)	6.3 volts
Filament current	2.25 amperes
Mutual conductance	3600 umhos
Average amplification factor	90
Bulb	ST-16
Maximum overall length	5 3/4 inches
Maximum diameter	2 1/16 inches
Net Weight	2 3/4 ounce
Plate lead	metal top cap
Base	4-pin ceramic

INTER-ELECTRODE CAPACITANCES

Grid to plate	5.1 mmf.
Grid to filament	4.9 mmf.
Plate to filament	1.7 mmf.

TOP VIEW



BASE PIN CONNECTIONS

1 - Filament
2 - Grid
3 - Grid
4 - Filament

R.F. AMPLIFIER, OSCILLATOR, CLASS B MODULATOR, FREQUENCY MULTIPLIER

The Hytron HY30Z is a three-electrode transmitting tube of the high-mu type for use as a radio-frequency amplifier, oscillator, and Class "B" modulator and audio-frequency amplifier. The HY30Z due to its high value of transconductance operates at high efficiency as a power doubler requiring small values of driving power.

The internal structure of the HY30Z permits operation at maximum ratings at frequencies up to 60 megacycles. It is identical in construction to the higher-priced HY40 and HY51 series tubes but smaller in size. A large heavy-duty speer graphite anode and extra low-loss Lava insulators are used in the HY30Z. The maximum plate dissipation is 25 watts (this rating and others are for continuous-service operation).

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Class "B" audio amplifier-modulator (zero bias)

DC plate voltage	850 max.	volts
Max. signal DC plate current*	90 max.	ma.
Max. signal plate input*	77 max.	watts
DC grid current	25 max.	ma.
Plate dissipation*	25 max.	watts

Typical operation for two tubes

Plate voltage	850	volts
DC grid voltage	0	volts
Zero signal DC plate current	30	ma.
Max. signal DC plate current	180	ma.
Load resistance plate to plate	8400	ohms
Max. signal grid driving power	2.0	watts
Max. signal power output	100	watts

*Averaged over any audio-frequency of sine-wave form

R.F. POWER AMPLIFIER - CLASS B TELEPHONY

DC plate voltage	850 max.	volts
DC plate current	90 max.	ma.
DC plate input	37.5 max.	watts
Plate dissipation	25 max.	watts

PLATE MODULATED R.F. AMPLIFIER - CLASS C TELEPHONY

DC plate voltage	700 max.	volts
DC plate current	90 max.	ma.
DC grid voltage	-100 max.	volts
DC grid current	25 max.	ma.
DC plate input	53 max.	watts
Plate dissipation**	17 max.	watts

**Dissipation with no modulation - rises to 25 watts for 100% modulation

Typical operating conditions

Plate voltage	700	volts
DC grid voltage#	-75	volts
DC plate current	75	ma.
DC grid current	20	ma.
Grid resistor##	3750	ohms
Driving power##	5.0	watts
Power output##	40	watts

R.F. AMPLIFIER - CLASS C TELEGRAPHY

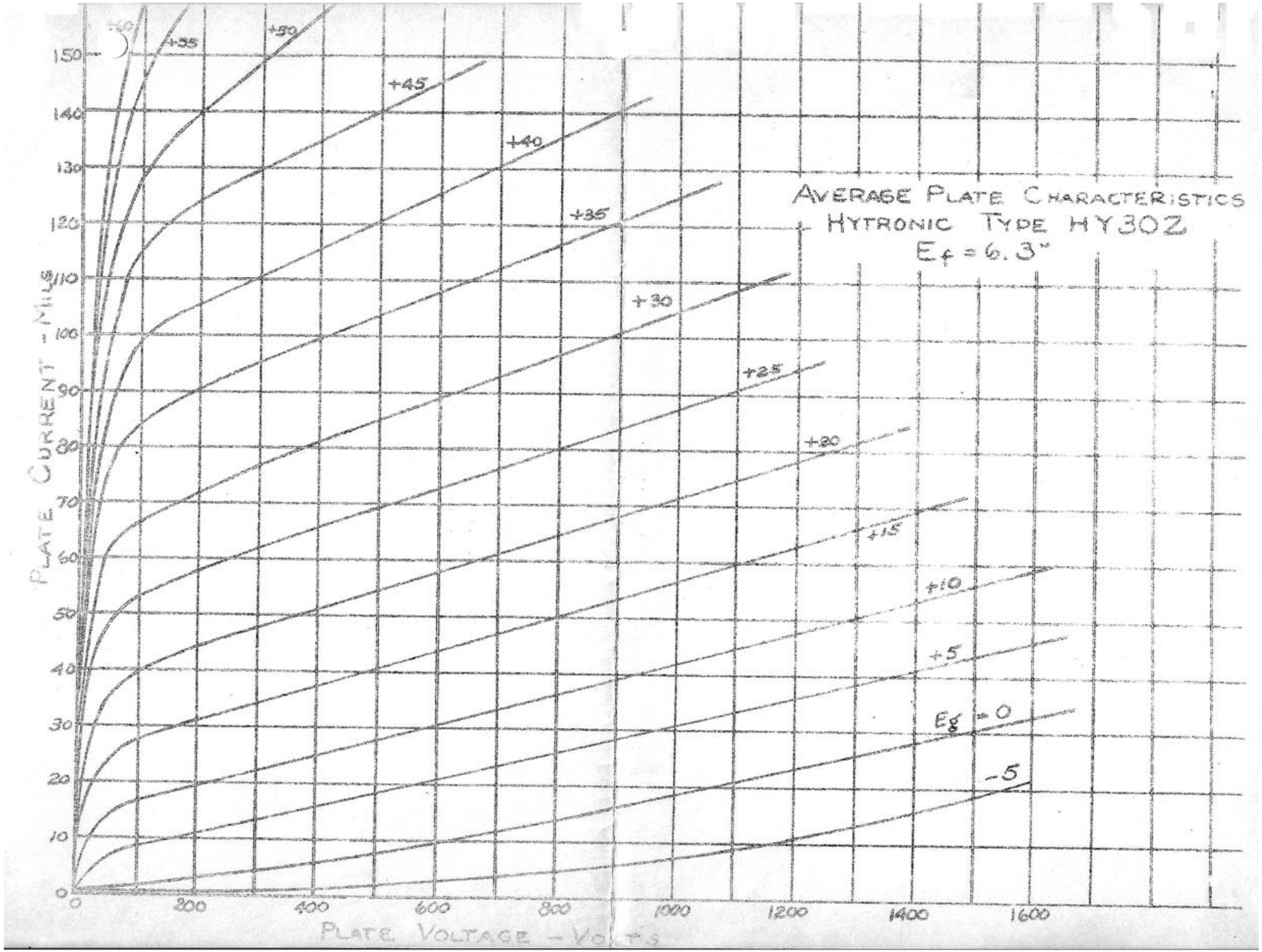
DC Plate voltage	850 max.	volts
DC plate current	90 max.	ma.
DC grid voltage	-200 max.	volts
DC grid current	25 max.	ma.
DC plate input	77 max.	watts
Plate dissipation	25 max.	watts

Typical operating conditions

Plate voltage	850	volts
DC plate current	90	ma.
DC grid current	25	ma.
Grid resistor##	3000	ohms
DC grid voltage#	-75	volts
Driving power##	2.0	watts
Power output##	58	watts

#Grid bias may be obtained through grid resistor of value shown below or external source or a combination of both. Adjust bias for maximum efficiency obtainable without exceeding maximum ratings.

##Subject to wide variations controlled by circuit constants and operating characteristics of associated input and output circuits.


AVERAGE PLATE CHARACTERISTICS
HYTRONIC TYPE HY30Z
Ef = 6.3v
PLATE CURRENT - MILLS
PLATE VOLTAGE - VOLTS
+55
+50
+45
+40
+35
+30
+25
+20
+15
+10
+5
Eg = 0
-5
0
10
20
30
40
50
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150
200
400
600
800
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1200
1400
1600