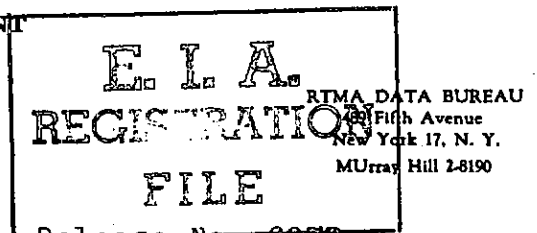


RADIO-TELEVISION MANUFACTURERS ASSOCIATION

ENGINEERING DEPARTMENT



February 15, 1951

To  
Tube Engineers:

On October 4, 1948 in Release No. 697, the RTMA Data Bureau announced the registration of tube type designation

6BM6

under the sponsorship of Sylvania Electric Products Inc., New York City.

On January 15, 1951 in Release No. 697A, proposal to reregister the designation on the basis of modifications there stated was made.

No objection having been lodged to this proposal, reregistration has now been made of this designation.

Respectfully yours,

RTMA DATA BUREAU

By

Ralph R. Batcher

RRBatcher/cap

RADIO - TELEVISION MANUFACTURERS ASSOCIATION

ENGINEERING DEPARTMENT



RTMA DATA BUREAU  
489 Fifth Avenue  
New York 17, N. Y.  
MUrray Hill 2-8190

Release No. 697A

January 15, 1951

To  
Tube Engineers:

On October 4, 1948 in Release No. 697, the RTMA Data Bureau announced the registration of tube type designation

6BM6

under the sponsorship of Sylvania Electric Products Inc, New York City.

Sponsor now proposes reregistration of this designation on the basis of modifications as follows:

<u>Item</u>	<u>As Registered</u>	<u>As Proposed</u>
Min. Frequency 2 3/4 reflector mode	3,000	1,100 mc
Max. Frequency 3 3/4 reflector mode	(not given)	3,800 mc
Min. Frequency 3 3/4 reflector mode	(not given)	1,500 mc
Cavity mode, for typical operation 2 3/4 reflector mode	3/4	1/4
Outline	per Release No. 697	per attached sheet

Unless valid objection to this reregistration is lodged with the Data Bureau prior to February 15, 1951, the indicated reregistration will be made and appropriate announcement will follow.

Respectfully yours,

RTMA DATA BUREAU

By

RRBatcher/cap  
Enc.

# SYLVANIA ELECTRIC

## RTMA Registration Data

### TYPE 6BM6 REFLEX KLYSTRON

The Type 6BM6 is a reflex klystron oscillator for cw operation. It is a separate-cavity type and the frequency of oscillation is dependent primarily on the external tuning. It oscillates over the range of 550 to 2,300 megacycles in the 1 3/4 reflector mode, from 1,100 to 3,000 megacycles in the 2 3/4 reflector mode and from 1,500 to 3,800 megacycles in the 3 3/4 reflector mode.

#### MECHANICAL DATA

Cathode .....	coated, unipotential
Dimensions .....	per outline, Page 4
Base .....	A4-76, Peewee 4-Pin
Cap .....	C1-3, Skirted Miniature

Connections:

<u>Lower Contact Ring</u>	<u>Base</u>
1st resonator grid	Pin 1 .. control electrode
	Pin 2 .. heater
<u>Upper Contact Ring</u>	Pin 3 .. cathode
2nd resonator grid	Pin 4 .. heater
<u>Cap</u>	
reflector	

Cooling .....	convection--conduction <sup>(1)</sup>
Mounting Position .....	any

#### GENERAL ELECTRICAL DATA

Heater Voltage (ac or dc) .....	6.3	volts		
Heater Current .....	575	milliamps		
Cathode to Control Electrode				
Leakage Current, maximum (with				
-100 volts on control electrode) .....	75	microamps		
Reflector Mode .....	1 3/4	2 3/4	3 3/4	
Frequency:				
Maximum .....	2,300	3,000	3,800	megacycles
Minimum .....	550	1,100	1,500	megacycles

(1) Contact Rings are to make direct peripheral contact with metallic parts of external cavity.

**TYPE 6BM6**

**MAXIMUM RATINGS-- Absolute Values**

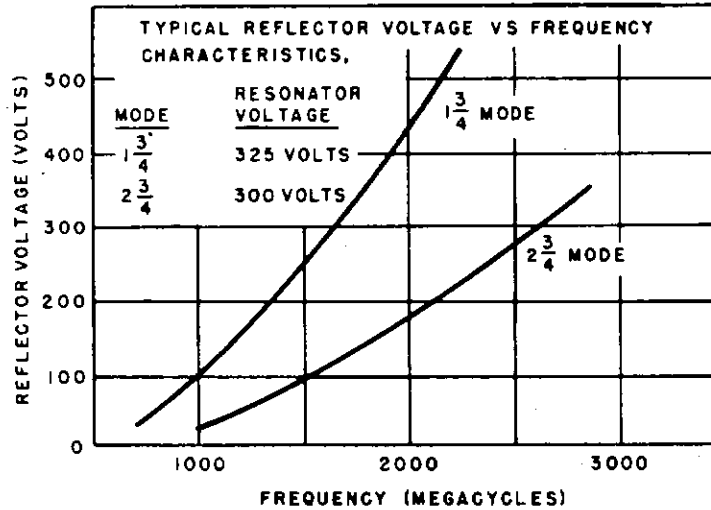
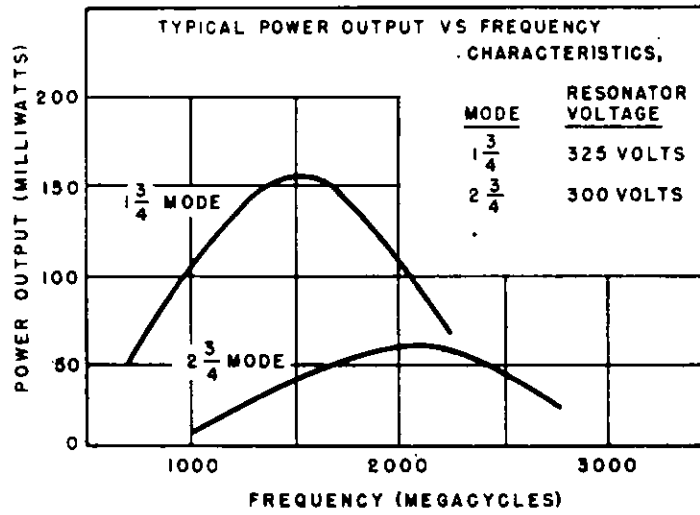
Resonator Voltage .....	350	volts
Resonator Current .....	29	milliamps
Control Electrode Voltage:		
Maximum Positive .....	+1	volts
Maximum Negative .....	-500	volts
Control Electrode Current .....	1	milliamp
Reflector Voltage:		
Maximum .....	-700	volts
Minimum .....	-15	volts
Reflector Current .....	500	microamps
Heater-Cathode Voltage .....	±45	volts
Power Input .....	10	watts
Contact Ring Seal Temperature .....	400	degrees
Base Ring Temperature .....	500	degrees
		fahrenheit

**TYPICAL OPERATION --CW Oscillator**

Cavity .....	coaxial (see Page 4)	
Reflector Mode .....	1 3/4	2 3/4
Cavity Mode .....	1/4	1/4
Frequency .....	1,500	2,200 megacycles
Resonator Voltage .....	325	300 volts
Cathode Current .....	18	15 milliamps
Reflector Voltage, approx.		
(adj. for maximum power output)	-235	-215 volts
Reflector Current .....	0	0 milliamps
Control Electrode Voltage .....	0	0 volts
Control Electrode Current .....	0	0 milliamps
Power Output .....	160	60 milliwatts

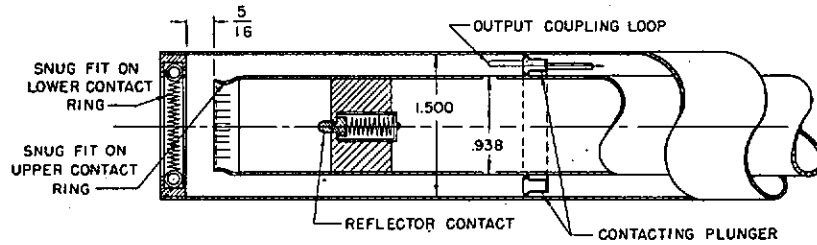
**Electronic Tuning (between half power points):**

<b>Frequency Variation with Change in Reflector Voltage:</b>		
Er from -256 to -202 Volts ..	13.4	--- megacycles
Er from -215 to -181 Volts ..	---	20 megacycles
Modulation Sensitivity .....	0.25	0.59 megacycles per volt



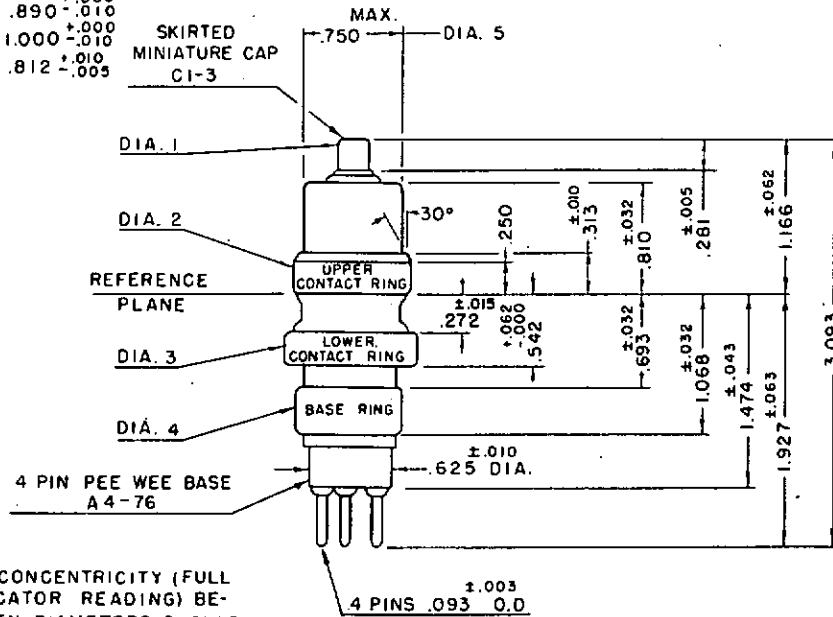
TYPE 6BM6

TYPICAL COAXIAL CAVITY



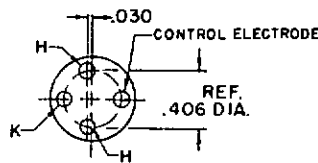
OUTLINE DRAWING

- DIA. 1 = .250  $\pm .005$
- DIA. 2 = .890  $\begin{smallmatrix} +.000 \\ -.010 \end{smallmatrix}$
- DIA. 3 = 1.000  $\begin{smallmatrix} +.000 \\ -.010 \end{smallmatrix}$
- DIA. 4 = .812  $\begin{smallmatrix} +.010 \\ -.005 \end{smallmatrix}$



NOTE: CONCENTRICITY (FULL INDICATOR READING) BETWEEN DIAMETERS SHOULD BE AS FOLLOWS. F.I.R. SHALL INCLUDE THE EFFECT OF TILT, OUT OF ROUNDNESS, ETC. OF COMPONENTS.

- DIA. 2 TO DIA. 1 WITHIN .040
- DIA. 2 TO DIA. 3 WITHIN .025
- DIA. 1 TO DIA. 3 WITHIN .045
- DIA. 2 TO DIA. 5 WITHIN .050



1760  
RADIO MANUFACTURERS ASSOCIATION

SUITE 701-4 AMERICAN BUILDING  
1317 F STREET, N.W.  
WASHINGTON, D. C.

E. I. A.  
REGISTRATION  
FILE

OCT-6 1948



R.M.A. DATA BUREAU  
90 West Street  
New York, N. Y.

Release No. 697

October 4, 1948

To  
Tube Engineers:

Registration has been made by the RMA  
Data Bureau of the vacuum tube type designation

6BM6 (Registration No. 1512)

as defined by the characteristics and ratings given  
in the attached data on application of

Sylvania Electric Products Inc.  
500 Fifth Avenue  
New York City.

Respectfully yours,

RMA DATA BUREAU

By

LCFHorle/cap  
Enc.

# SYLVANIA ELECTRIC

## REFLEX KLYSTRON

### TYPE 6BM6

#### DESCRIPTION

The type 6BM6 is a reflex klystron oscillator for c.w. operation. It is of the separate cavity type, and the frequency of oscillation is dependent primarily on the external tuning. It oscillates over the range from 550 to 2,300 megacycles on the 1 3/4 reflector mode and from 1,100 to 3,000 megacycles on the 2 3/4 reflector mode. The beam control electrode is designed to have a high impedance characteristic.

#### MECHANICAL SPECIFICATIONS

Cathode	Oxide coated, unipotential
Dimensions	As per outline
Base	Pee-wee 4-pin, A4-76 (see outline)
Connections:	
Base	Pin 1 - Control Electrode Pin 2 - Heater Pin 3 - Cathode Pin 4 - Heater
Lower Disc	1st Resonator Grid
Upper Disc	2nd Resonator Grid
Cap	Reflector
Cooling	Convection - conduction, the resonator discs are to make direct peripheral contact with metallic parts of external cavity.
Mounting Position	Any.

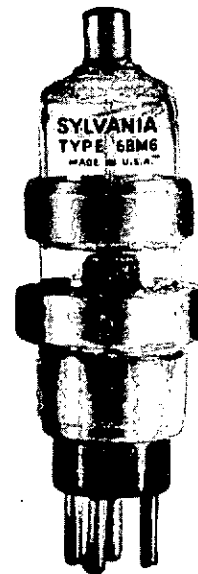
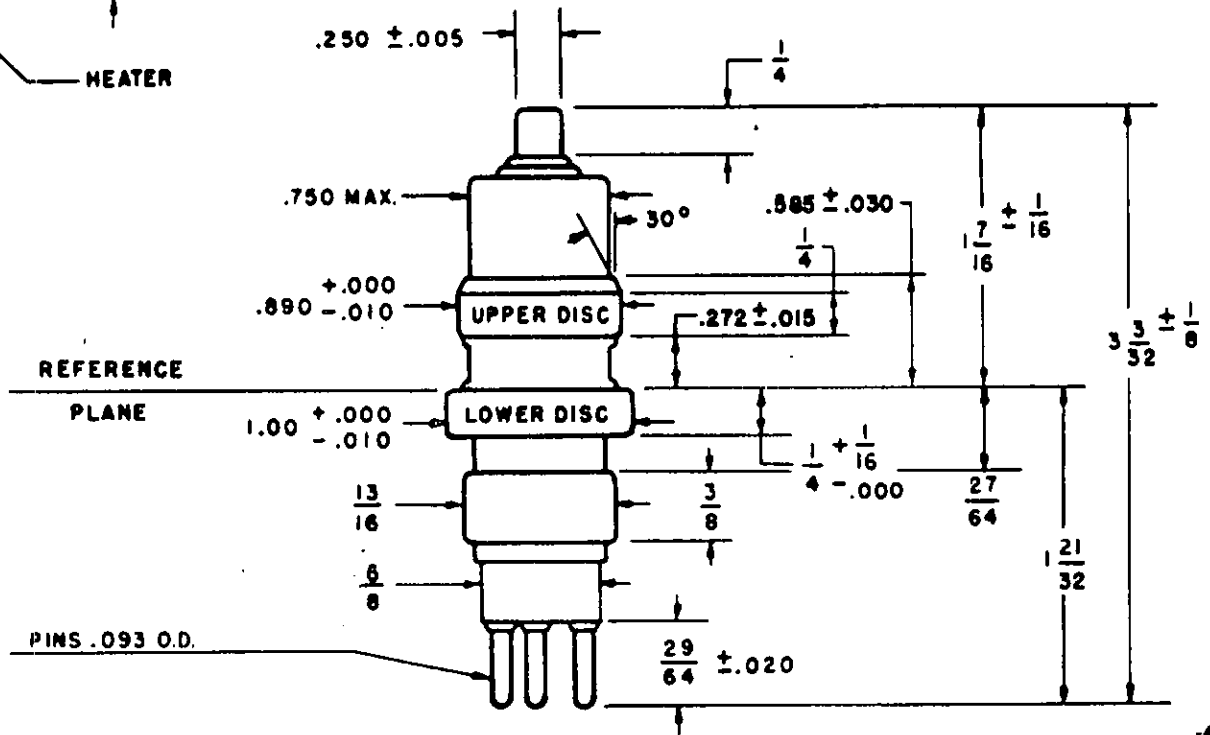
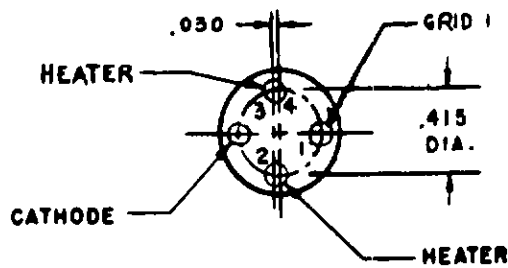


FIG. 1

Photograph, Type 6BM6  
Actual Size

FIG. 2

# OUTLINE DRAWING TYPE 6BM6



## ELECTRICAL DATA

Heater Voltage	6.3 volts A-C or D-C
Heater Current	575 milliamperes
Reflector Mode	1 3/4 2 3/4
Maximum Frequency	2,300 3,000 megacycles
Minimum Frequency	550 3,000 megacycles
Cathode to Control Electrode Current (-100 volts on the control electrode)	75 microamperes max.

## MAXIMUM RATINGS (C. W. Oscillator)

Resonator Voltage	350 volts
Resonator Current	29 milliamperes
Control Electrode Voltage:	
Maximum Positive	+1 volt
Maximum Negative	-500 volts
Control Electrode Current	1 milliampere
Reflector Voltage	
Maximum	-700 volts
Minimum	-15 volts
Reflector Current	500 microamperes
Heater-Cathode Voltage	+45 volts
Power Input	10 watts
Disc Seal Temperature	400 degrees Fahrenheit
Base Ring Temperature	500 degrees Fahrenheit

TYPICAL OPERATION (C. W. Oscillator)

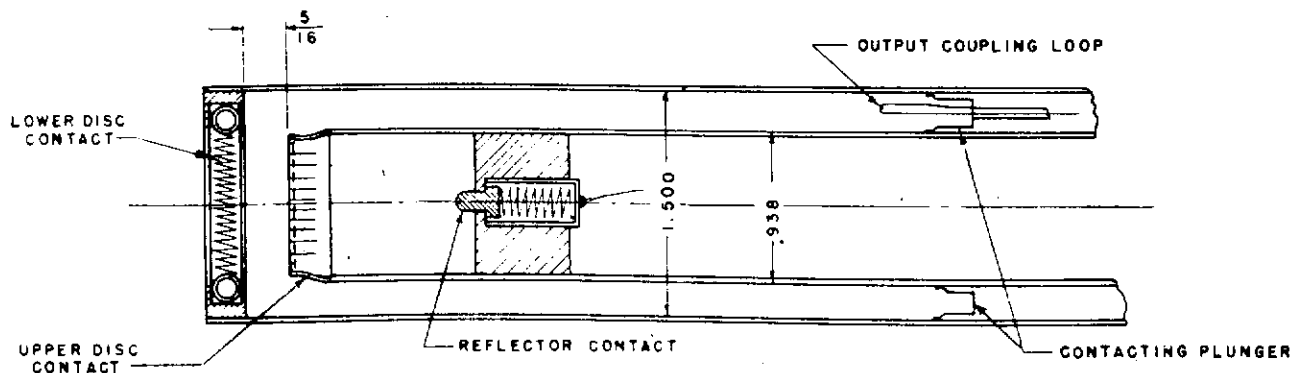


FIG. 3  
TYPICAL COAXIAL CAVITY FOR TYPE 6BM6

Coaxial Cavity per Figure 3:

Reflector Mode	1 3/4	2 3/4
Cavity Mode	1/4	3/4
Frequency	1,500	2,200 megacycles
Resonator Voltage	325	300 volts
Cathode Current	18	15 milliamperes
Reflector Voltage (adjusted for maximum power output)	-235	-215 volts
Reflector Current	0	0 milliamperes
Control Electrode Voltage	0	0 volts
Control Electrode Current	0	0 milliamperes
Electronic Tuning (between half power points)		
Frequency Variation with change in reflector voltage		
Er from -256 to -202 volts	13.4	-- megacycles
Er from -215 to -181 volts	--	20 megacycles
Modulation Sensitivity	0.25	0.59 megacycles per volt
Power Output	160	60 milliwatts

CHARACTERISTIC CURVES

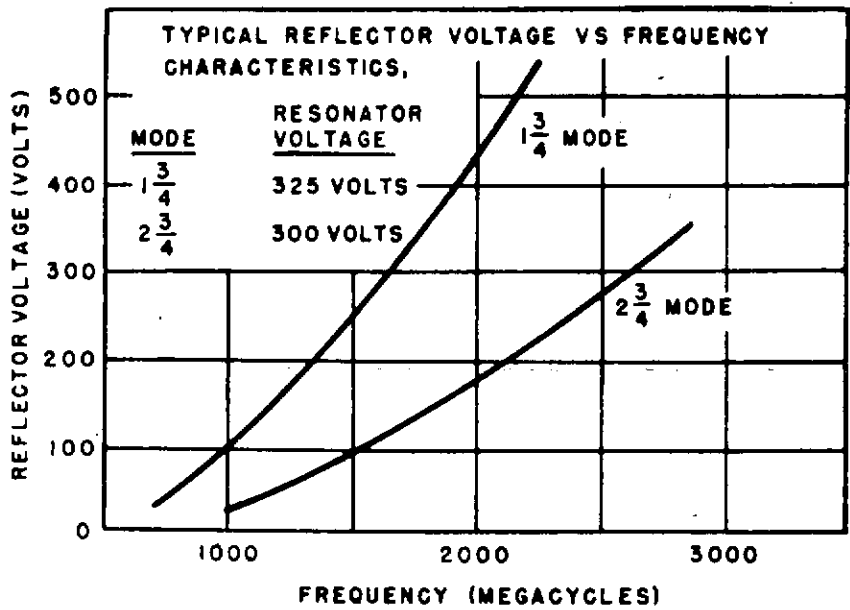


FIG. 4

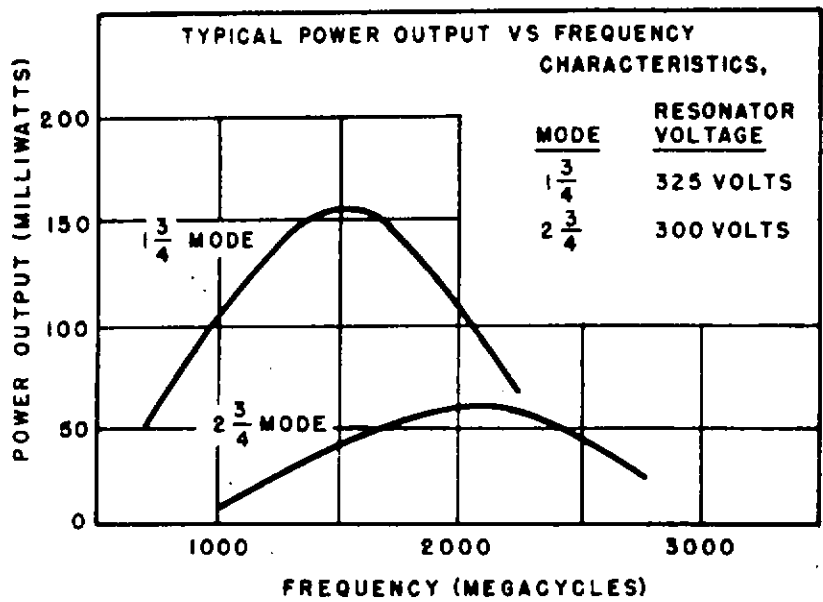


FIG. 5

Sylvania Electric Products Inc.

Electronics Division

500 Fifth Avenue

New York 18, N. Y.