

# TECHNICAL DATA

Rel. #151

## ARCTURUS

### TYPE 2Y2

#### HALF-WAVE HIGH-VACUUM RECTIFIER

|                |              |
|----------------|--------------|
| Heater Voltage | 2.5 Volts    |
| Heater Current | 1.75 Amperes |

#### OPERATING CONDITIONS\*

|                           |              |
|---------------------------|--------------|
| A.C. Plate Voltage (RMS)  | 4400 (max.)  |
| Peak Inverse Voltage      | 12000 (max.) |
| D.C. Output Current (max) | 5.0 ma.      |

\* May be used in either choke or condenser input circuit but in the latter case the input condenser should be limited to .5 mfd. (max.)

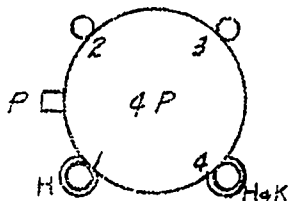
#### APPLICATION

Type 2Y2 is a half-wave rectifier for use in cathode-ray oscillograph and television circuits where high voltage and low current are required.

It has been designed as a slow heater in order to avoid burning the cathode-ray tube viewing screen at one spot before the sweep oscillators start to function. Therefore, it is essential that tubes used in the sweep circuits be quick heaters such as Types 5X3, 6R6G and 6AD5G.

11-14-38

#### PIN ARRANGEMENT

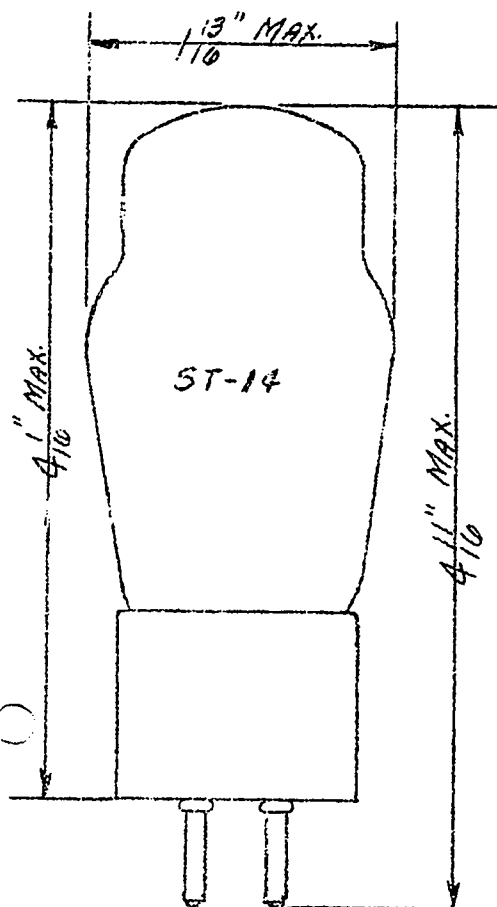


#### BOTTOM VIEW

from RMA registration #151, Dec. 5, 1938

# TECHNICAL DATA

REL #154



## ARCTURUS

TYPE 5X3

### FULL-WAVE HIGH-VACUUM RECTIFIER

|                  |             |
|------------------|-------------|
| Filament Voltage | 5.0 Volts   |
| Filament Current | 2.0 Amperes |

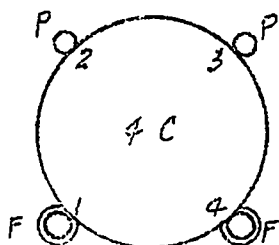
### OPERATING CONDITIONS\*

|                              |            |
|------------------------------|------------|
| A.C. Voltage (RMS) per plate | 1275 (max) |
| Peak Inverse Voltage         | 3600 (max) |
| D.C. Output Current (max)    | 30 ma.     |

### LOW VOLTAGE OPERATING CONDITIONS\*

|                              |           |
|------------------------------|-----------|
| A.C. Voltage (RMS) per plate | 400 Volts |
| D.C. Output Current (max)    | 110 ma.   |

### PIN ARRANGEMENT



### BOTTOM VIEW

\* May be used in either choke or condenser input circuits.

### APPLICATION

Type 5X3 is a filament type full-wave rectifier suitable for use where fairly high voltage and low current are required in cathode-ray oscillograph and television circuits.

# TECHNICAL DATA

## ARCTURUS

TYPE 6AD5G

HIGH MU TRIODE

|                  |      |            |
|------------------|------|------------|
| Heater Voltage   | 6.3  | Volts      |
| Heater Current   | 0.3  | Ampere     |
| Plate Voltage    | 1500 | (max)*     |
| Cathode Resistor | 500  | ohms (Min) |

### LOW VOLTAGE CHARACTERISTICS

|                      |       |           |
|----------------------|-------|-----------|
| Plate Voltage        | 250   | Volts     |
| Grid Voltage         | -2    | Volts     |
| Plate Current        | 0.9   | ma.       |
| Plate Resistance     | 66000 | ohms      |
| Transconductance     | 1500  | micromhos |
| Amplification Factor | 100   |           |

### DIRECT INTERELECTRODE CAPACITANCES

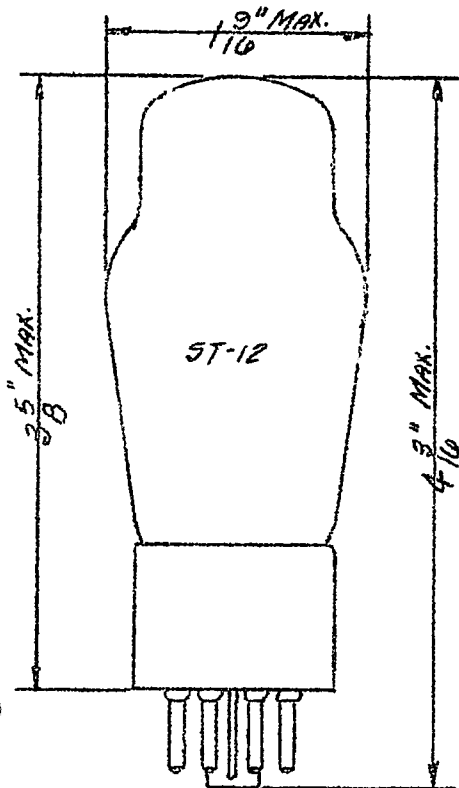
|               |     |     |
|---------------|-----|-----|
| Grid to Plate | 3.3 | uuf |
| Input         | 4.1 | uuf |
| Output        | 3.9 | uuf |

\* This is the plate supply voltage. The voltage effective at the plate will be this voltage minus the drop in the series resistor which should not be less than 200,000 ohms.

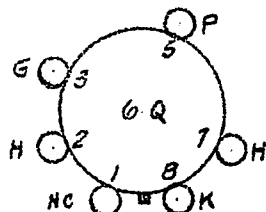
### APPLICATION

Its characteristics and construction make Type 6AD5G well suited for use as a high vacuum sweep oscillator or amplifier in cathode-ray oscillograph or television circuits requiring high plate voltage with low plate current to drive deflection plates of cathode-ray tubes.

The tube is especially insulated to withstand high surge voltages, but the plate dissipation must be limited by a series protective resistor.



PIN ARRANGEMENT



BOTTOM VIEW

# TECHNICAL DATA

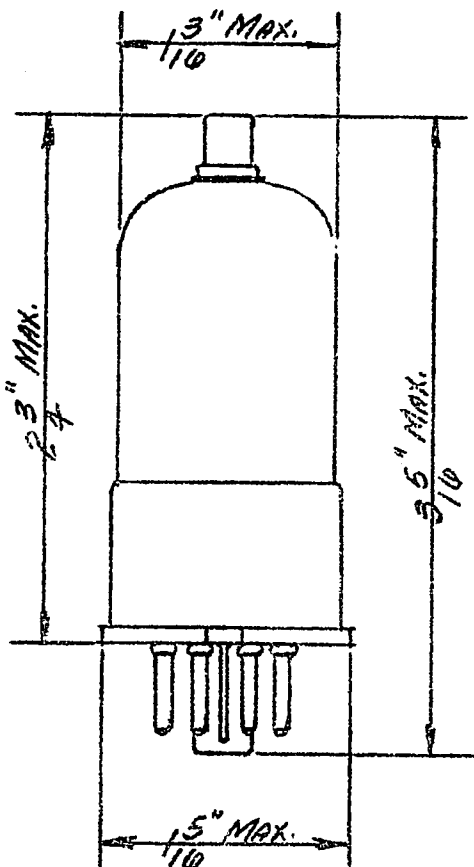
# 170

from RMA release #170, March 31, 1939

## ARCTURUS

TYPE 6K8GT MIDGET

### TRIODE-HEXODE CONVERTER



Heater Voltage  
Heater Current

6.3 Volts  
0.3 Ampere

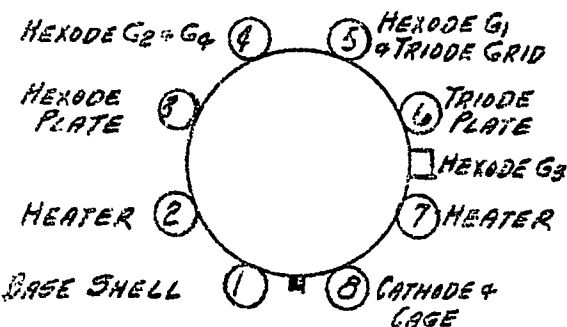
### OPERATING CHARACTERISTICS

|                                       |                 |
|---------------------------------------|-----------------|
| Hexode Plate Voltage                  | 250 Volts (Max) |
| Hexode Screen (Grids #2 & #4) Voltage | 100 Volts (Max) |
| Hexode Control-Grid (Grid #3) "       | -3 Volts (Min)  |
| Triode Plate Voltage                  | 125 Volts (Max) |
| Triode Plate Dissipation              | 0.75 Watt (Max) |
| Total Cathode Current                 | 16 Ma. (Max)    |

#### Typical Operation:

|                                                              |        |             |
|--------------------------------------------------------------|--------|-------------|
| Heater Voltage                                               | 6.3    | 6.3 Volts   |
| Hexode Plate Voltage                                         | 100    | 250 Volts   |
| Hexode Screen Voltage                                        | 100    | 100 Volts   |
| Hexode Control-Grid Voltage                                  | -3     | -3 Volts    |
| Triode Plate Voltage                                         | 100    | 100 Volts   |
| Triode Grid Resistor                                         | 50,000 | 50,000 Ohms |
| Hexode Plate Resistance                                      | 0.4    | 0.6 Megohm  |
| Conversion Transconductance                                  | 325    | 350 umhos   |
| Hexode Control-Grid Bias for<br>Conver. Transcond. = 2 umhos | -30    | -30 Volts   |
| Hexode Plate Current                                         | 2.3    | 2.5 Ma.     |
| Hexode Screen Current                                        | 6.2    | 6.0 Ma.     |
| Triode Plate Current                                         | 3.8    | 3.8 Ma.     |
| Triode Grid & Hexode<br>Grid #1 Current                      | 0.15   | 0.15 Ma.    |

### PIN ARRANGEMENT



### BOTTOM VIEW

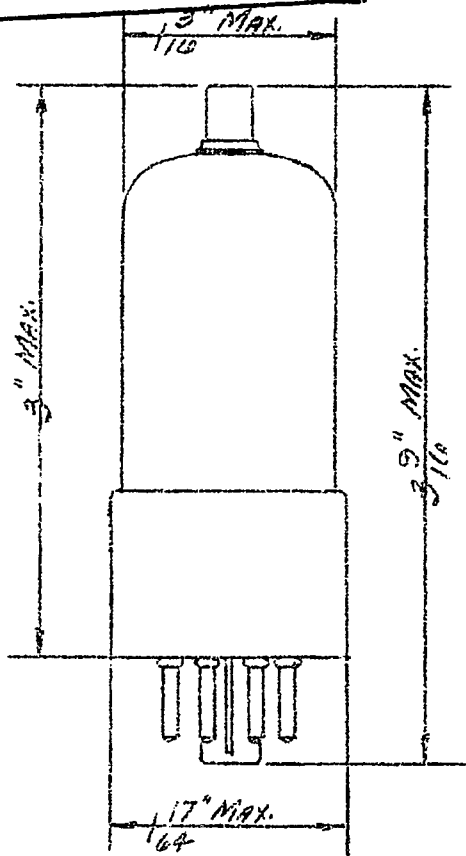
### DIRECT INTERELECTRODE CAPACITANCES

|                                                                                                |          |
|------------------------------------------------------------------------------------------------|----------|
| Hexode Grid #3 to Hexode Plate                                                                 | 0.03 uuf |
| Hexode Grid #3 to Triode Plate                                                                 | 0.02 uuf |
| Hexode Grid #3 to Triode Grid &<br>Hexode Grid #1                                              | 0.02 uuf |
| Triode Grid & Hexode Grid #1 to<br>Triode Plate                                                | 1.7 uuf  |
| Triode Grid & Hexode Grid #1 to<br>Hexode Plate                                                | 0.06 uuf |
| Hexode Grid #3 to all other<br>Electrodes = R-F Input                                          | 4.0 uuf  |
| Triode Plate to all other electrodes<br>(except Triode Grid & Hexode Grid #1)<br>= Osc. Output | 3.6 uuf  |
| Triode Grid & Hexode Grid #1 to all<br>other electrodes (except Triode Plate)<br>= Osc. Input  | 6.7 uuf  |
| Hexode Plate to all other electrodes<br>= Mixer Output                                         | 4.5 uuf  |

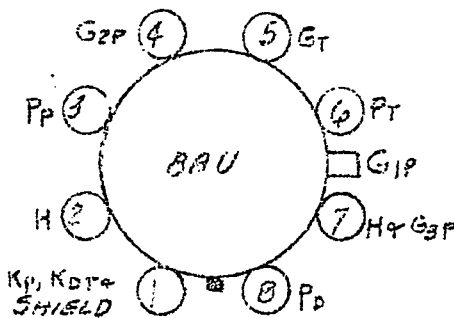
# TECHNICAL DATA

#207  
8/1/39

E. I. A.  
REGISTRATION  
FILE



PIN ARRANGEMENT



BOTTOM VIEW

## ARCTURUS

TYPE 6M8GT MIDGET

DIODE - TRIODE - PENTODE

|                |            |
|----------------|------------|
| Heater Voltage | 6.3 Volts  |
| Heater Current | 0.6 Ampere |

### PENTODE SECTION

|                                                     |                        |
|-----------------------------------------------------|------------------------|
| Plate Voltage                                       | 100 Volts              |
| Screen Grid Voltage                                 | 100 Volts              |
| Control Grid Voltage                                | -5 Volts               |
| Plate Current                                       | 8.5 m.a.               |
| Screen Grid Current                                 | 2.7 m.a.               |
| Plate Resistance                                    | 200,000 ohms (approx.) |
| Transconductance                                    | 1900 micromhos         |
| Control Grid Voltage for Transconductance = 2 umhos | -35 Volts              |

### TRIODE SECTION

|                      |                |
|----------------------|----------------|
| Plate Voltage        | 100 Volts      |
| Grid Voltage         | -1 Volt        |
| Plate Current        | 0.5 m.a.       |
| Plate Resistance     | 91,000 ohms    |
| Transconductance     | 1100 micromhos |
| Amplification Factor | 100            |

### DIODE

A single plate of conventional design is provided around a cathode which is common to the Triode.

### DIRECT INTERELECTRODE CAPACITANCES

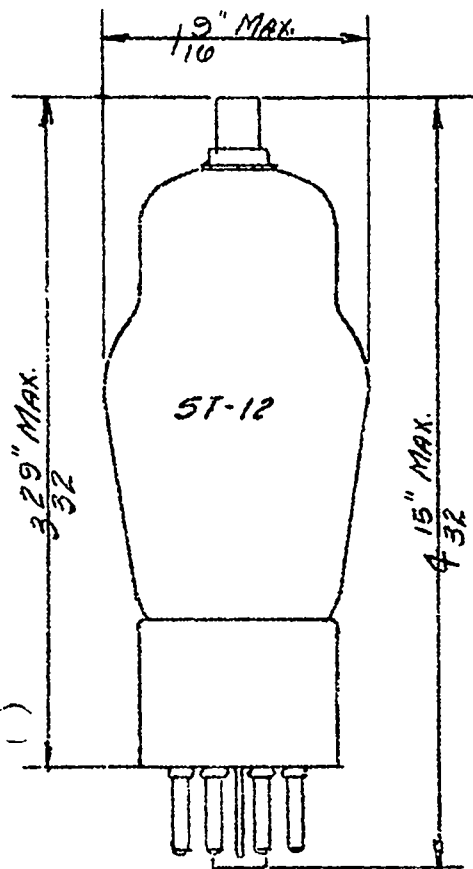
|                                        |                |
|----------------------------------------|----------------|
| Pentode G <sub>1</sub> to plate        | .015 uuf (Max) |
| Pentode Input                          | 5.2 uuf        |
| Pentode Output                         | 10.0 uuf       |
| Triode Grid to plate                   | 2.5 uuf        |
| Triode Grid to cathode                 | 3.7 uuf        |
| Triode Plate to cathode                | 4.5 uuf        |
| Pentode G <sub>1</sub> to triode grid  | .01 uuf (Max)  |
| Pentode Plate to triode grid           | .10 uuf (Max)  |
| Pentode G <sub>1</sub> to triode plate | .02 uuf (Max)  |

### APPLICATION

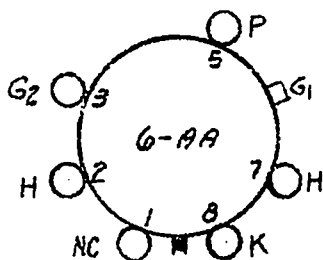
Type 6M8GT has been designed primarily for small AC receivers wherein very limited space is available. The pentode section may be used as a conventional RF or IF amplifier and the diode-triode section as detector and AF amplifier. It will be noted that the pentode suppressor grid is internally connected to the #7 pin which is common to the heater. Therefore it will be necessary that this pin be connected to B minus. Type 6M8GT is identical to Type 6S8GT with the exception of the heaters and the suppressor grid connection.

from RMA release #207, Aug. 1, 1939

# TECHNICAL DATA



PIN ARRANGEMENT



BOTTOM VIEW

## ARCTURUS

TYPE 6R6G

### REMOTE CUT-OFF PENTODE AMPLIFIER

|                      |      |        |
|----------------------|------|--------|
| Heater Voltage       | 6.3  | Volts  |
| Heater Current       | 0.3  | Ampere |
| Plate Voltage        | 1500 | (max)* |
| Screen Grid Voltage  | 75   | (max)  |
| Control Grid Voltage | (**) |        |

### LOW VOLTAGE CHARACTERISTICS

|                             |         |           |
|-----------------------------|---------|-----------|
| Plate Voltage               | 250     | Volts     |
| Screen Grid Voltage         | 100     | Volts     |
| Control Grid Voltage        | -3      | Volts     |
| Plate Current               | 7.0     | ma.       |
| Screen Grid Current         | 1.7     | ma.       |
| Plate Resistance            | 300,000 | ohms      |
| Transconductance            | 1450    | micromhos |
| Amplification Factor        | 1160    |           |
| Transconductance = 2        |         |           |
| when control grid voltage = | -42.5   | Volts     |

### DIRECT INTERELECTRODE CAPACITANCES

|               |      |           |
|---------------|------|-----------|
| Grid to plate | .007 | uuf (max) |
| Input         | 4.5  | uuf       |
| Output        | 11.0 | uuf       |

\* This is the plate supply voltage. The voltage effective at the plate will be this voltage minus the drop in the series resistor which should not be less than 100,000 ohms.

\*\* When the grid bias is developed in the grid circuit the tube should not be operated without grid excitation. When the bias is developed in the cathode circuit the minimum value of cathode resistor should be 500 ohms.

### APPLICATION

The characteristics of Type 6R6G make it suitable for use as an amplifier of the output of a sweep oscillator such as the 6AD5G. Advantage is taken of the shape of its grid voltage - plate current curve to compensate for the non-linearity of the output of the sweep oscillator and produce a resultant linear sawtooth wave for cathode-ray oscillograph and television sweep circuits.

The 6R6G is especially insulated to withstand high surge voltages, but the plate dissipation must be limited by a series protective resistor.

# TECHNICAL DATA

## ARCTURUS

### TYPE 12A8GT MIDGET

### PENTAGRID CONVERTER

|                |      |        |
|----------------|------|--------|
| Heater Voltage | 12.5 | Volts  |
| Heater Current | .150 | Ampere |

### OPERATING CHARACTERISTICS

|                                          |        |        |           |
|------------------------------------------|--------|--------|-----------|
| Plate Voltage                            | 100    | 250    | Volts     |
| Screen Grid Voltage                      | 50     | 100    | Volts     |
| Anode Grid Voltage                       | 100    | 250*   | Volts     |
| Control Grid Voltage                     | -1.5   | -3     | Volts     |
| Plate Current                            | 1.2    | 3.3    | ma.       |
| Screen Current (Grid #3 & #5)            | 1.5    | 3.2    | ma.       |
| Anode Grid Current (Grid #2)             | 1.6    | 4.0    | ma.       |
| Oscillator Grid Current (Grid #1)        | 0.25   | 0.50   | ma.       |
| Plate Resistance                         | 0.30   | 0.56   | megohm    |
| Oscillator Grid Resistor                 | 50,000 | 50,000 | ohms      |
| Conversion Conductance (Sc)              | 350    | 500    | micromhos |
| Control Grid Voltage for<br>Sc = 2 umhos | -30    | -45    | Volts     |

\*Through 20,000 ohm dropping resistor

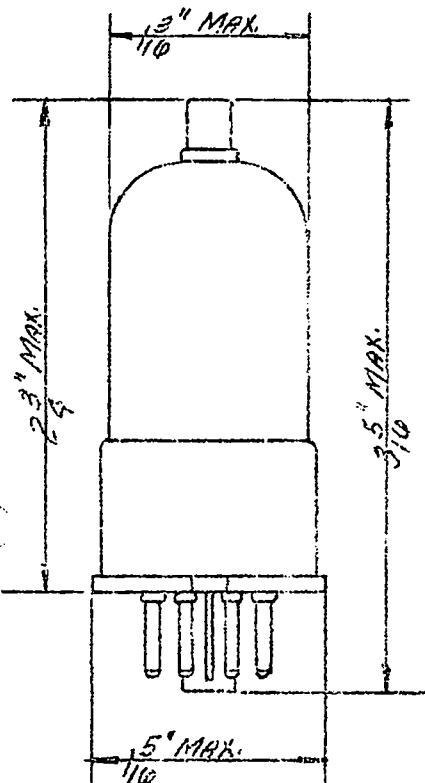
### DIRECT INTERELECTRODE CAPACITANCES

|                                 |     |     |
|---------------------------------|-----|-----|
| Grid #4 to plate                | .20 | unf |
| Grid #4 to Grid #2              | .19 | unf |
| Grid #4 to Grid #1              | .15 | unf |
| Grid #1 to Grid #2              | 1.0 | unf |
| Grid #4 to all other electrodes | 7.5 | unf |
| Grid #2 to all other electrodes | 5.0 | unf |
| Plate to all other electrodes   | 7.5 | unf |
| Grid #1 to all other electrodes | 6.2 | unf |

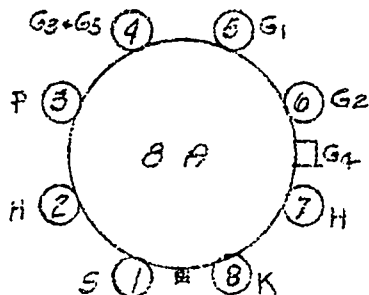
\* With Shield Can

### APPLICATION

Type 12A8GT is one of a new line of tubes designed primarily for series heater operation in AC-DC receivers. Through the use of a small resistance connected in series with the heaters the need for plug-in resistors or line cords is eliminated. Only half the heater power for the entire receiver is required compared to designs using .3 ampere types.



### PIN ARRANGEMENT



### BOTTOM VIEW

1-5-39

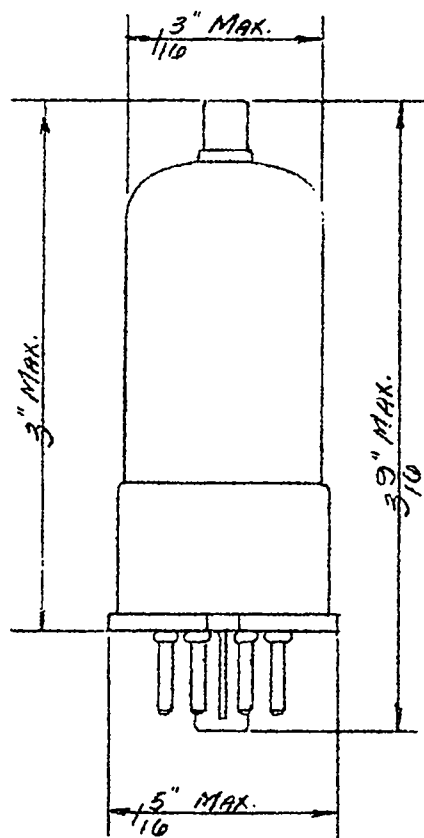
# TECHNICAL DATA

*Return to file*  
RMA Release # 161

## ARCTURUS

TYPE 12B8GT MIDGET

TRIODE - PENTODE



|                |      |        |
|----------------|------|--------|
| Heater Voltage | 12.6 | Volts  |
| Heater Current | 0.3  | Ampere |

### PENTODE SECTION

|                                                     |         |           |
|-----------------------------------------------------|---------|-----------|
| Plate Voltage                                       | 90      | Volts     |
| Screen Grid Voltage                                 | 90      | Volts     |
| Control Grid Voltage                                | -3      | Volts     |
| Plate Current                                       | 7.0     | m.a.      |
| Screen Grid Current                                 | 2.0     | m.a.      |
| Plate Resistance                                    | 200,000 | ohms      |
| Transconductance                                    | 1800    | micromhos |
| Amplification Factor                                | 360     |           |
| Control Grid Voltage for Transconductance = 2 umhos | -42.5   | Volts     |

### TRIODE SECTION

|                                                |        |           |
|------------------------------------------------|--------|-----------|
| Plate Voltage                                  | 90     | Volts     |
| Grid Voltage                                   | 0      |           |
| Plate Current                                  | 2.8    | m.a.      |
| Plate Resistance                               | 37,000 | ohms      |
| Transconductance                               | 2400   | micromhos |
| Amplification Factor                           | 90     |           |
| Approx. Grid Voltage for Plate Current cut-off | -2.5   | Volts     |

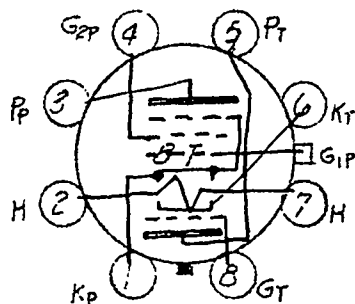
### DIRECT INTERELECTRODE CAPACITANCES

|                                        |      |     |
|----------------------------------------|------|-----|
| Pentode G <sub>1</sub> to plate        | .015 | uuf |
| Pentode Input                          | 5.2  | uuf |
| Pentode Output                         | 9.6  | uuf |
| Triode Grid to plate                   | 2.3  | uuf |
| Triode Grid to cathode                 | 5.0  | uuf |
| Triode Plate to cathode                | 6.3  | uuf |
| Pentode G <sub>1</sub> to triode grid  | .002 | uuf |
| Pentode Plate to triode grid           | .078 | uuf |
| Pentode G <sub>1</sub> to triode plate | .003 | uuf |

### APPLICATION

Type 12B8GT has been designed primarily for small AC-DC receivers wherein very limited space is available. The pentode section may be used as a conventional RF or IF amplifier and the triode section as a biased or grid-leak detector.

### PIN ARRANGEMENT



BOTTOM VIEW

# TECHNICAL DATA

## ARCTURUS

TYPE 12F5GT MID-μ

HIGH-MU TRIODE

Heater Voltage  
Heater Current

12.5 Volts  
.150 Ampere

### OPERATING CHARACTERISTICS

|                      |        |        |           |
|----------------------|--------|--------|-----------|
| Plate Voltage        | 100    | 250    | Volts     |
| Control Grid Voltage | 0      | -2     | Volts     |
| Plate Current        | 1.8    | .9     | ma.       |
| Plate Resistance     | 50,000 | 66,000 | ohms      |
| Transconductance     | 1520   | 1500   | micromhos |
| Amplification Factor | 80     | 100    |           |

### DIRECT INTERELECTRODE CAPACITANCES

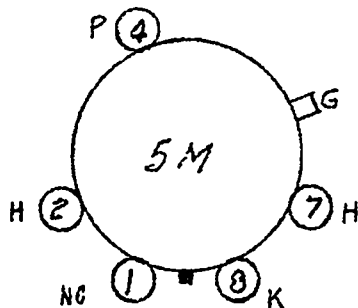
|               |                      |
|---------------|----------------------|
| Grid to plate | 2.4 $\mu\mu\text{f}$ |
| Input         | 1.9 $\mu\mu\text{f}$ |
| Output        | 3.4 $\mu\mu\text{f}$ |

### APPLICATION

Type 12F5GT is one of a new line of tubes designed primarily for series heater operation in AC-DC receivers. Through the use of a small resistance connected in series with the heaters the need for plug-in resistors or line cords is eliminated. Only half the heater power for the entire receiver is required compared to designs using .3 ampere types.

1-4-39

### PIN ARRANGEMENT



BOTTOM VIEW

# TECHNICAL DATA

## ARCTURUS

### TYPE 12J7GT MIDGET

#### PENTODE DETECTOR AMPLIFIER

|                |              |
|----------------|--------------|
| Heater Voltage | 12.5 Volts   |
| Heater Current | .150 Amperes |

#### OPERATING CHARACTERISTICS

|                      |      |                |
|----------------------|------|----------------|
| Plate Voltage        | 100  | 250 Volts      |
| Screen Grid Voltage  | 100  | 100 Volts      |
| Control Grid Voltage | -3   | -3 Volts       |
| Plate Current        | 2.0  | 2.0 ma.        |
| Screen Grid Current  | 0.5  | 0.5 ma.        |
| Plate Resistance     | 1.0  | 1.5 megohm     |
| Transconductance     | 1185 | 1225 micromhos |
| Amplification Factor | 1185 | 1500           |

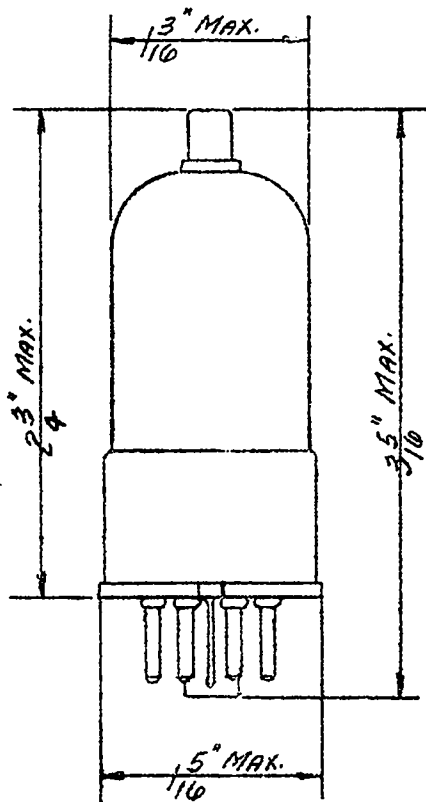
#### DIRECT INTERELECTRODE CAPACITANCES

|               |                            |
|---------------|----------------------------|
| Grid to plate | .005 $\mu\text{pf}$ (max.) |
| Input         | 4.3 $\mu\text{pf}$         |
| Output        | 9.0 $\mu\text{pf}$         |

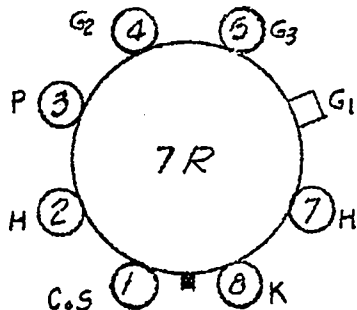
#### APPLICATION

Type 12J7GT is one of a new line of tubes designed primarily for series heater operation in AC-DC receivers. Through the use of a small resistance connected in series with the heaters the need for plug-in resistors or line cords is eliminated. Only half the heater power for the entire receiver is required compared to designs using .3 ampere types.

1-4-39



#### PIN ARRANGEMENT



#### BOTTOM VIEW

# JOINT ELECTRON DEVICE ENGINEERING COUNCIL



2260 SALMON TOWER  
11 WEST FORTY-SECOND STREET  
NEW YORK 36, N. Y.  
TELEPHONE: LONGACRE 5-0717

## Announcement of Electron Device Type Reregistration

Release No. 156C (Tentative)\*

April 25, 1960

The Joint Electron Device Engineering Council announced the registration of the following electron device designation

12J7GT

on January 7, 1939, Release No. 156, under the sponsorship of Arcturus Radio Company, Newark, New Jersey.

The Radio Corporation of America, Harrison, New Jersey, now proposes reregistration based on the following data:

| <u>ITEM</u>                                | <u>AS REGISTERED</u> | <u>AS PROPOSED</u>              |
|--------------------------------------------|----------------------|---------------------------------|
| Under <u>Ratings</u> :                     |                      |                                 |
| Suppressor                                 | none                 | Connect to cathode at<br>socket |
| Maximum Screen Voltage                     | 125 max              | See J5-C4-2 volts               |
| Maximum Screen Dissipation                 | 0.1 max              | delete watt                     |
| Maximum Screen Input:                      |                      |                                 |
| For Screen Voltages up to 150 V            | none                 | 0.1 watt                        |
| For Screen Voltages between<br>150 & 300 V | none                 | See J5-C4-2                     |
| Peak Heater-Cathode Voltage                |                      |                                 |
| Heater Negative with respect<br>to Cathode | none                 | 90 max volts                    |
| Heater Positive with respect<br>to Cathode | none                 | 90 max volts                    |

\*Unless valid objection to this reregistration is lodged with the EIA Standards Laboratory prior to May 25, 1960, this reregistration will be made and this information will be considered "FINAL" WITHOUT FURTHER NOTICE!

# TECHNICAL DATA

## ARCTURUS

TYPE 12K7GT MIDGET

REMOTE CUT-OFF PENTODE AMPLIFIER

Heater Voltage  
Heater Current

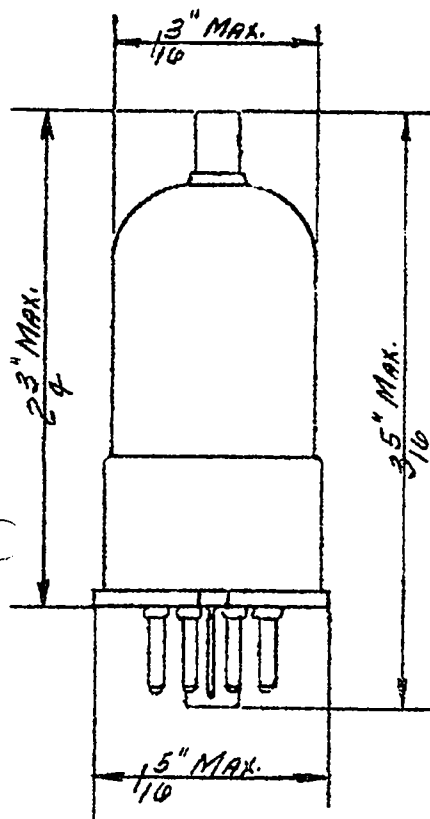
12.5 Volts  
.150 Amperes

### OPERATING CHARACTERISTICS

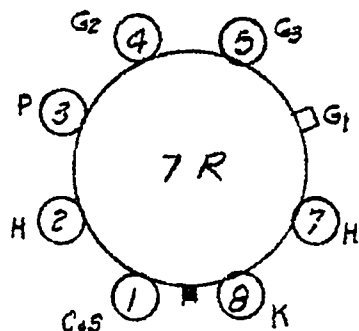
|                                                         |         |         |            |
|---------------------------------------------------------|---------|---------|------------|
| Plate Voltage                                           | 100     | 250     | Volts      |
| Screen Grid Voltage                                     | 100     | 100     | Volts      |
| Control Grid Voltage                                    | -3      | -3      | Volts      |
| Plate Current                                           | 6.5     | 7.0     | ma.        |
| Screen Grid Current                                     | 1.6     | 1.7     | ma.        |
| Plate Resistance                                        | 250,000 | 800,000 | Ohms       |
| Transconductance                                        | 1325    | 1450    | Microhmhos |
| Amplification Factor                                    | 350     | 1160    |            |
| Control Grid Voltage for<br>transconductance = 2 umhos. | -38.5   | -42.5   | Volts      |

### DIRECT INTERELECTRODE CAPACITANCES

|               |               |
|---------------|---------------|
| Grid to plate | .005 uuf(max) |
| Input         | 4.0 uuf       |
| Output        | 9.0 uuf       |



PIN ARRANGEMENT



BOTTOM VIEW

### APPLICATION

Type 12K7GT is one of a new line of tubes designed primarily for series heater operation in AC-DC receivers. Through the use of a small resistance connected in series with the heaters the need for plug-in resistors or line cords is eliminated. Only half the heater power for the entire receiver is required compared to designs using .3 ampere types.

JETEC DATA  
JOINT ELECTRON TUBE ENGINEERING COUNCIL  
COMMITTEE ON RECEIVING TUBES

J5-12K7GT  
Page 1  
January 29, 1952

JETEC TYPE 12K7GT

PENTODE

**E. I. A.**  
**REGISTRATION**  
**FILE**

MECHANICAL DATA

Coated unipotential cathode

|                                  |                                              |               |     |
|----------------------------------|----------------------------------------------|---------------|-----|
| Outline drawing. . . . .         | 9-18                                         | Bulb. . . . . | T-9 |
| Base . . . . .                   | B7-27, small wafer octal 7-pin, metal sleeve |               |     |
| Top cap. . . . .                 | C1-3, skirted miniature                      |               |     |
| Maximum diameter . . . . .       | .1-5/16"                                     |               |     |
| Maximum overall length . . . . . | .3-5/16"                                     |               |     |
| Maximum seated height. . . . .   | 2-3/4"                                       |               |     |
| Pin connections. . . . .         | .Basing 7R                                   |               |     |
| Pin 1 - Base sleeve              | Pin 5 - Grid #3                              |               |     |
| Pin 2 - Heater                   | Pin 7 - Heater                               |               |     |
| Pin 3 - Plate                    | Pin 8 - Cathode, internal shield             |               |     |
| Pin 4 - Grid #2                  | Top cap - Grid #1                            |               |     |

Mounting position. . . . . any

ELECTRICAL DATADirect Interelectrode Capacitances\*

|                                              |      |     |
|----------------------------------------------|------|-----|
| Grid to plate: (g1 to p) max. . . . .        | .005 | μμf |
| Input: g1 to (h+k+g2+g3+B.S.+i.s.) . . . . . | 4.6  | μμf |
| Output: p to (h+k+g2+g3+B.S.+i.s.) . . . . . | 12   | μμf |

\*External shield #308 connected to pin #8.

Ratings

|                                              |           |       |
|----------------------------------------------|-----------|-------|
| Heater voltage . . . . .                     | 12.6      | volts |
| Maximum plate voltage. . . . .               | 300       | volts |
| Maximum grid #2 voltage. . . . .             | See J5-C4 |       |
| Maximum grid #2 supply voltage . . . . .     | 300       | volts |
| Maximum positive dc grid #1 voltage. . . . . | 0         | volts |
| Maximum plate dissipation. . . . .           | 2.75      | watts |
| Maximum grid #2 dissipation. . . . .         | 0.35      | watt  |
| Maximum heater-cathode voltage . . . . .     | 90        | volts |

Continued on Page 2

ELECTRICAL DATA (Continued)Typical Operating Conditions and Characteristics, Class A1 Amplifier

|                                                            |                                      |      |      |            |
|------------------------------------------------------------|--------------------------------------|------|------|------------|
| Heater voltage . . . . .                                   | 12.6                                 | 12.6 | 12.6 | volts      |
| Heater current . . . . .                                   | 150                                  | 150  | 150  | ma         |
| Plate voltage . . . . .                                    | 100                                  | 250  | 250  | volts      |
| Grid #2 voltage. . . . .                                   | 100                                  | 100  | 125  | volts      |
| Grid #1 voltage. . . . .                                   | -1                                   | -3   | -3   | volts      |
| Grid #3 voltage. . . . .                                   | Pin #5 connected to Pin #8 at socket |      |      |            |
| Plate resistance (approx.) . . . . .                       | 0.15                                 | 0.8  | 0.6  | megohm     |
| Transconductance . . . . .                                 | 1650                                 | 1450 | 1650 | $\mu$ mhos |
| Plate current . . . . .                                    | 9.5                                  | 7.0  | 10.5 | ma         |
| Grid #2 current. . . . .                                   | 2.7                                  | 1.7  | 2.6  | ma         |
| Grid #1 voltage (approx.) for $G_m = 2 \mu$ mhos . . . . . | -38                                  | -42  | -52  | volts      |

Refer to "Interpretation of Receiving Tube Ratings"

# TECHNICAL DATA

## ARCTURUS

TYPE 12Q7GT NIDGET

DUPLEX-DIODE HIGH-MU TRIODE

Heater Voltage  
Heater Current

12.5 Volts  
.150 Ampere

### OPERATING CHARACTERISTICS

|                      |        |        |           |
|----------------------|--------|--------|-----------|
| Plate Voltage        | 100    | 250    | Volts     |
| Control Grid Voltage | 0      | -3     | Volts     |
| Plate Current        | 2.3    | 1.1    | ma.       |
| Plate Resistance     | 43,000 | 58,000 | Ohms      |
| Transconductance     | 1400   | 1200   | Micromhos |
| Amplification Factor | 60     | 70     |           |

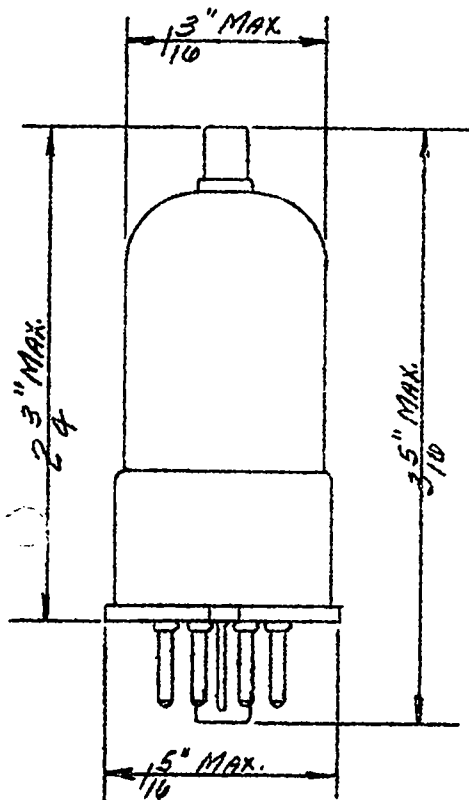
### DIRECT INTERELECTRODE CAPACITANCES

|               |     |     |
|---------------|-----|-----|
| Grid to plate | 1.7 | uuf |
| Input         | 1.7 | uuf |
| Output        | 3.5 | uuf |

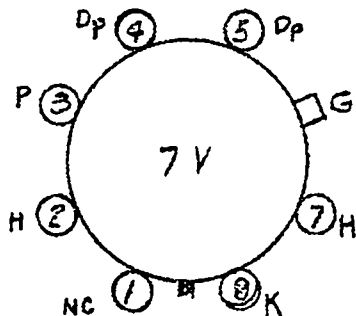
### APPLICATION

Type 12Q7GT is one of a new line of tubes designed primarily for series heater operation in AC-DC receivers. Through the use of a small resistance connected in series with the heaters the need for plug-in resistors or line cords is eliminated. Only half the heater power for the entire receiver is required compared to designs using .3 ampere types.

1-5-39



PIN ARRANGEMENT



BOTTOM VIEW

# JOINT ELECTRON DEVICE ENGINEERING COUNCIL



2260 SALMON TOWER  
11 WEST FORTY-SECOND STREET  
NEW YORK 36, N. Y.  
TELEPHONE: LONGACRE 5-0717

## Announcement of Electron Device Type Reregistration

Release No. 156B (Tentative)\*

March 29, 1960

The Joint Electron Device Engineering Council announced the registration of the following electron device designation

12Q7GT

on January 7, 1939, Release No. 156, under the sponsorship of Arcturus Radio Tube Company, Newark, New Jersey.

The Radio Corporation of America, Harrison, New Jersey, now proposes reregistration based on the following data:

| <u>ITEM</u>                             | <u>AS REGISTERED</u> | <u>AS PROPOSED</u>  |
|-----------------------------------------|----------------------|---------------------|
| <u>Direct Interelectrode</u>            |                      |                     |
| <u>Capacitances*</u>                    |                      |                     |
| Triode grid to<br>#2 diode plate (max.) | none                 | 0.001 $\mu\text{f}$ |
| Triode grid to<br>#1 diode plate (max.) | none                 | 0.001 $\mu\text{f}$ |
| #2 diode plate to<br>H + K + pin 1      | none                 | 1.7 $\mu\text{f}$   |
| #1 diode plate to<br>H + K + pin 1      | none                 | 2.2 $\mu\text{f}$   |

\* Without external shield.

\*Unless valid objection to this reregistration is lodged with the EIA Standards Laboratory prior to April 29, 1960, this reregistration will be made and this information will be considered "FINAL" WITHOUT FURTHER NOTICE!

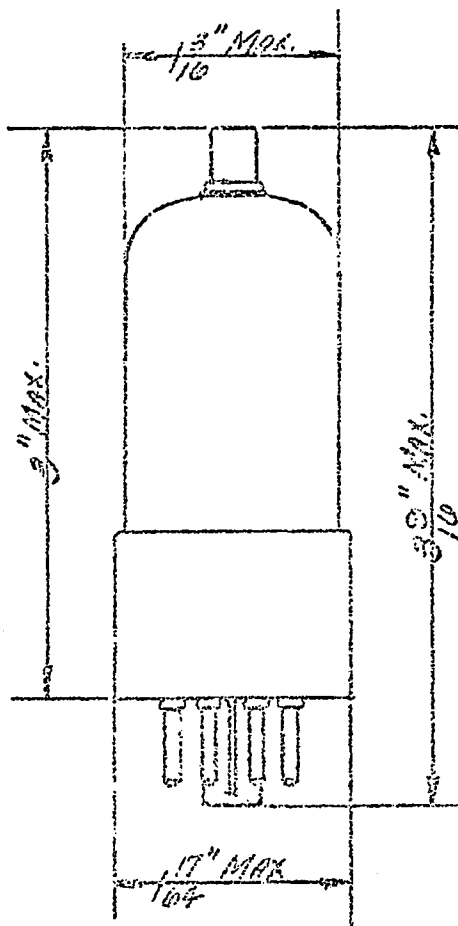
# TECHNICAL DATA

#170

from RMA release #170, March 31, 1939

## ARCTURUS <sup>76</sup> MAR 31 1939

### TYPE 25D8GT MIDGET DIODE - TRIODE - PENTODE



|                |             |
|----------------|-------------|
| Heater Voltage | 25.0 Volts  |
| Heater Current | 0.15 Ampere |

#### PENTODE SECTION

|                                                     |                |
|-----------------------------------------------------|----------------|
| Plate Voltage                                       | 100 Volts      |
| Screen Grid Voltage                                 | 100 Volts      |
| Control Grid Voltage                                | -3 Volts       |
| Plate Current                                       | 3.5 m.a.       |
| Screen Grid Current                                 | 2.7 m.a.       |
| Plate Resistance                                    | 200,000 ohms   |
| Transconductance                                    | 1900 micromhos |
| Control Grid Voltage for Transconductance = 2 umhos | -35 Volts      |

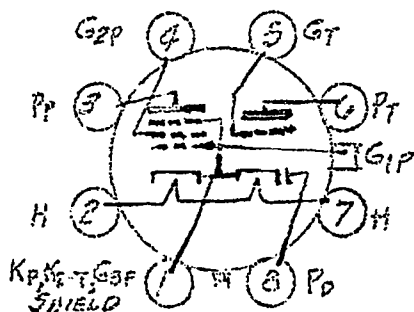
#### TRIODE SECTION

|                      |                |
|----------------------|----------------|
| Plate Voltage        | 100 Volts      |
| Grid Voltage         | -1 Volt        |
| Plate Current        | 0.5 m.a.       |
| Plate Resistance     | 91,000 ohms    |
| Transconductance     | 1100 micromhos |
| Amplification Factor | 100            |

#### DIODE

A single plate of conventional design is provided around a cathode which is common to the Triode.

#### PIN ARRANGEMENT



#### BOTTOM VIEW



GAF

#### DIRECT INTERELECTRODE CAPACITANCES

|                                        |      |           |
|----------------------------------------|------|-----------|
| Pentode G <sub>1</sub> to plate        | .015 | μμF (Max) |
| Pentode Input                          | 5.2  | μμF       |
| Pentode Output                         | 10.0 | μμF       |
| Triode Grid to plate                   | 2.5  | μμF       |
| Triode Grid to cathode                 | 3.7  | μμF       |
| Triode Plate to cathode                | 4.5  | μμF       |
| Pentode G <sub>1</sub> to triode grid  | .01  | μμF (Max) |
| Pentode Plate to triode grid           | .10  | μμF (Max) |
| Pentode G <sub>1</sub> to triode plate | .02  | μμF (Max) |

#### APPLICATION

Type 25D8GT has been designed primarily for small AC-DC receivers wherein very limited space is available. The pentode section may be used as a conventional RF or IF amplifier and the diode-triode section as detector and AF amplifier.

5-30-39

# TECHNICAL DATA

7/11

from RMA release #170, March 31, 1939

## ARCTURUS

MAR 31 1939

MAR 31 1939

### TYPE 25X6GT WIDGET

### HIGH-VACUUM RECTIFIER-VOLTAGE DOUBLER

Heater Voltage  
Heater Current

25.0 Volts  
.15 Amperes

### OPERATING CONDITIONS

#### VOLTAGE DOUBLER

A.C. Voltage per plate (RMS)  
D.C. Output Current

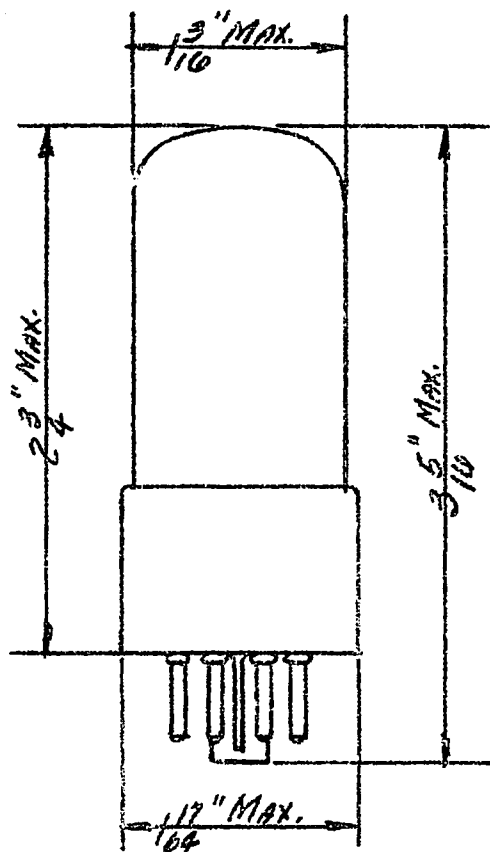
125 Volts (Max)  
60 ma. (Max)

#### HALF WAVE RECTIFIER

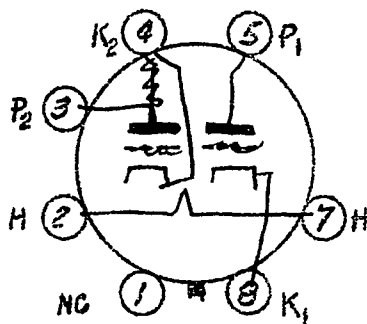
A.C. Voltage per plate (RMS) 1  
A.C. Voltage per plate (RMS) 2  
D.C. Output Current per plate  
Voltage Drop (each plate)

125 Volts (Max)  
250 Volts (Max)  
60 ma. (Max)  
25 Volts  
at 120 ma.

- 1 - without series resistor.  
2 - with 100 ohm resistor in  
each plate lead.



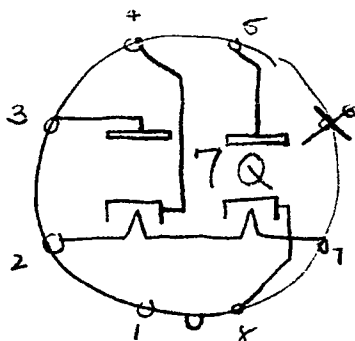
### PIN ARRANGEMENT



### BOTTOM VIEW

### APPLICATION

Type 25X6GT was designed primarily for series heater operation in AC-DC receivers. It may be used in conventional voltage doubler and half wave rectifier circuits.



3-30-39

# TECHNICAL DATA

RMA Release # 161

## ARCTURUS

TYPE 32L7GT MIDGET

### RECTIFIER - BEAM POWER AMPLIFIER

|                |      |        |
|----------------|------|--------|
| Heater Voltage | 32.5 | Volts  |
| Heater Current | 0.3  | Ampere |

### TENTATIVE OPERATING CHARACTERISTICS

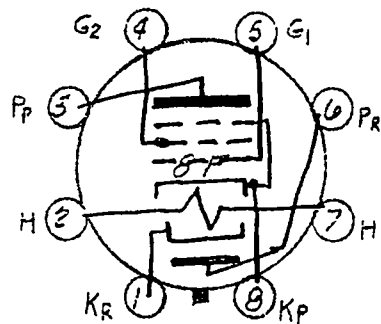
#### POWER AMPLIFIER SECTION

|                           |        |        |           |
|---------------------------|--------|--------|-----------|
| Plate Voltage             | 90     | 90     | Volts     |
| Screen Grid Voltage       | 90     | 90     | Volts     |
| Control Grid Voltage      | -5     | -7     | Volts     |
| Plate Current             | 38     | 27     | ma.       |
| Screen Grid Current       | 3.0    | 2.0    | ma.       |
| Plate Resistance          | 15,000 | 17,000 | ohms      |
| Transconductance          | 6000   | 4800   | micromhos |
| Amplification Factor      | 90     | 81     |           |
| Load Resistance           | 2600   | 2600   | ohms      |
| Power Output              | 0.8    | 1.0    | watt      |
| Total Harmonic Distortion | 5.3    | 9.0    | %         |
| Second Harmonic           | 2.2    | 6.5    | %         |
| Third Harmonic            | 4.6    | 5.5    | %         |

#### RECTIFIER SECTION

|                     |     |             |
|---------------------|-----|-------------|
| A.C. Plate Voltage  | 125 | Volts (max) |
| D.C. Output Current | 60  | ma. (max)   |

### PIN ARRANGEMENT



### BOTTOM VIEW

### APPLICATION

Type 32L7GT has been designed primarily for use in small AC-DC receivers wherein very limited space is available. It may be used in conventional half-wave high-vacuum rectifier and beam power amplifier circuits. The grid circuit resistance should not exceed 0.5 megohm.

1-13-39

from RMA release #161, Feb. 15, 1939

# RADIO MANUFACTURERS ASSOCIATION



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

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

RMA RELEASE NO. 161A

August 21, 1939

## ERRATA

The designation descriptive of the basing of the 32L7(GT) was given in error in RMA Release No. 161 of February 15, 1939, as 8F. The basing designation applicable to this tube type is, in fact, 8Z.

RMA DATA BUREAU

By .

10/11/39

# TECHNICAL DATA

NMA Release # 170

March 31, 1939

## ARCTURUS

TYPE 50L6GT MIDGET

BEAM POWER AMPLIFIER

### TENTATIVE DATA

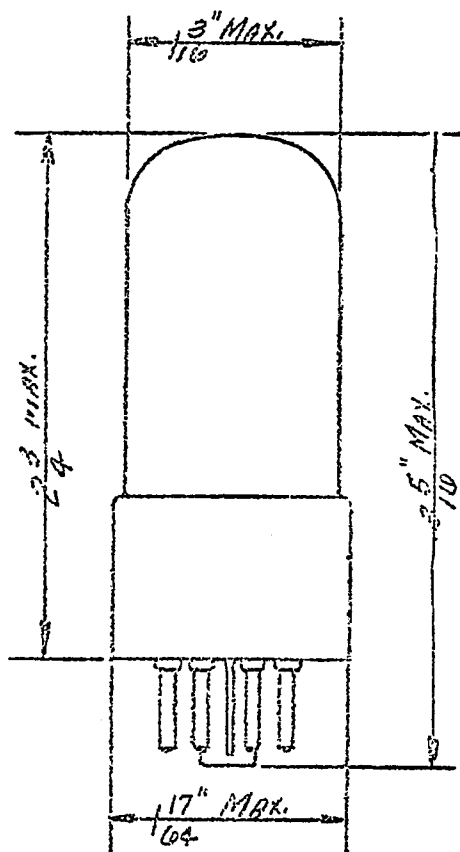
|                |      |        |
|----------------|------|--------|
| Heater Voltage | 50.0 | Volts  |
| Heater Current | .150 | Ampere |

### OPERATING CHARACTERISTICS

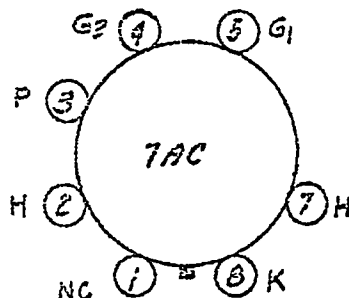
|                                   |        |           |
|-----------------------------------|--------|-----------|
| Plate Voltage                     | 110    | Volts     |
| Screen Grid Voltage               | 110    | Volts     |
| Control Grid Voltage              | -7.5   | Volts     |
| Plate Current (Zero Signal)       | 45     | ma.       |
| Screen Grid Current (Zero Signal) | 4      | ma.       |
| Transconductance                  | 6800   | micromhos |
| Amplification Factor              | 68     |           |
| Plate Resistance                  | 10,000 | ohms      |
| Signal Voltage (Peak)             | 7.5    | Volts     |
| Load Resistance                   | 2000   | ohms      |
| Power Output                      | 1.75   | Watts     |
| Total Harmonic Distortion         | 10.0   | %         |

### APPLICATION

Type 50L6GT is one of a new line of tubes designed primarily for series heater operation in AC-DC receivers. Through the use of a small resistance connected in series with the heaters the need for plug-in resistors or line cords is eliminated. Only half the heater power for the entire receiver is required compared to designs using .3 ampere types.



### PIN ARRANGEMENT



BOTTOM VIEW

3-27-39