5876

High-Mu Triode

GLASS-METAL PENCIL TYPE

FAST WARM-UP TIME **STURDY COAXIAL ELECTRODE STRUCTURE**

For Use in Cathode-Drive Service at Frequencies up to 3000 Mc

The 5876 is the same as the 5876A except for the following items:

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	*Min.*	*Max.*	
Heater Current	1	0.125	0.145	amp
Heater-Cathode Leakage Current:				
Heater negative with respect to cathode	1,2	-	100	μa
Heater positive with respect to cathode	1,2	-	100	μa
Emission Voltage	3	-	14	volts

Note 1: With 6.3 volts ac or dc on heater.

Note 2: With 100 volts dc between heater and cathode.

Note 3: With dc voltage on grid and plate which are connected together adjusted to produce a cathode current of 30 ma. and with 5.5 volts on heater.

SPECIAL TESTS & PERFORMANCE DATA

Intermittent Dynamic Life Performance:

This test (similar to MIL-E-ID, paragraph 4.11.3.2) is performed on a sample lot of tubes from each production run to insure high quality of rf performance. Each tube is life-tested in a cavity-type oscillator at 500 ± 15 Mc under the following conditions: Heater voltage of 6.3 volts, plate-supply voltage of 300 volts, cathode resistor is adjusted to give a dc plate current of 25 ma. and value is recorded, plate-circuit load resistance of zero ohms, heater positive with respect to cathode by 100 volts, and plate-seal temperature of 175° C min. Heater voltage is cycled at a rate of 110 minutes on and 10 minutes off.

At the end of 500 hours, the tube will not show permanent shorts or open circuits and will be critized for the total number of defects in the sample lot and for the number of tubes failing to meet the following limits:

Power Output . . . . . 0.2 min. watt

For conditions with 6.3 volts ac or dc on heater, dc plate volts = 200, grid resistor adjusted to give a dc plate current of 18 milliamperes in a cavity-type oscillator operating at 1700 ± 15 Mc.

Shorts and Continuity Test specified in data for type 5876A.

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Except for the following, other tests shown under type 5876A are not performed on the 5876:

Low-Frequency Vibration Performance
Shorts and Continuity Test
Glass-Seal-Fracture Test

RADIO CORPORATION OF AMERICA
Electron Tube Division Harrison, N. J.

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UHF HIGH-MU TRIODE

"PENCIL TYPE" FOR GROUNDED-GRID SERVICE

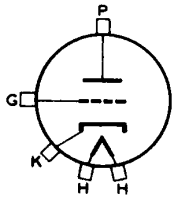
GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:		
Voltage	6.3	ac or dc volts
Current	0.135	amp
Direct Interelectrode Capacitances:		
Grid to Plate	1.4	μμf
Grid to Cathode	2.5	μμf
Plate to Cathode	0.035 max.	μμf

Mechanical:

Terminal Connections:



H – Heater
K – Cathode
G – Grid
P – Plate

Mounting Position	Any
Dimensions	See Outline Drawing

AMPLIFIER- Class A_1

Maximum Ratings, *Absolute Values*:

DC PLATE VOLTAGE	300 max.	volts
DC GRID VOLTAGE	-100 max.	volts
DC PLATE CURRENT	25 max.	ma
PLATE DISSIPATION◇	6.25 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	90 max.	volts
Heater positive with respect to cathode.	90 max.	volts
PLATE-SEAL TEMPERATURE	175 max.	°C

Characteristics:

Plate Voltage	250	volts
Cathode-Bias Resistor	75	ohms
Amplification Factor	56	
Plate Resistance	8625	ohms
Transconductance	6500	μmhos
Plate Current	18	ma

Maximum Circuit Values:

Grid-Circuit Resistance	0.5 max.	megohm

PLATE-MODULATED RF POWER AMPLIFIER- Class C Telephony

Carrier conditions per tube for use with a max. modulation factor of 1.0

Maximum CCS° Ratings, *Absolute Values*:

DC PLATE VOLTAGE	275 max.	volts

◇, °: see next page.

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DC GRID VOLTAGE	-100 max.	volts
DC PLATE CURRENT	22 max.	ma
DC GRID CURRENT	8 max.	ma
PLATE INPUT	6.0 max.	watts
PLATE DISSIPATION◇	4.25 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	90 max.	volts
Heater positive with respect to cathode.	90 max.	volts
PLATE-SEAL TEMPERATURE	175 max.	°C

Maximum Circuit Values:

Grid-Circuit Resistance	0.1 max.	megohm

RF POWER AMPLIFIER & OSCILLATOR- Class C Telegraphy

Key-down conditions per tube without amplitude modulation●

Maximum CCS○ Ratings, ***Absolute Values*****:**

DC PLATE VOLTAGE	360 max.	volts
DC GRID VOLTAGE	-100 max.	volts
DC PLATE CURRENT	25 max.	ma
DC GRID CURRENT	8 max.	ma
PLATE INPUT	9 max.	watts
PLATE DISSIPATION◇	6.25 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	90 max.	volts
Heater positive with respect to cathode.	90 max.	volts
PLATE-SEAL TEMPERATURE	175 max.	°C

Typical Operation as Oscillator in Grounded-Grid Circuit:

	500 Mc	*1700 Mc*	
DC Plate Voltage	250	250	volts
DC Grid Voltage♦	-12	-2	volts
DC Plate Current	23	23	ma
DC Grid Current (Approx.)□	6	3	ma
Useful Power Output (Approx.)	3	0.75	watts

Typical Operation as RF Power Amplifier in Grounded-Grid Circuit:

	500 Mc	
DC Plate Voltage	275	volts
DC Grid Voltage♦	-51	volts
DC Plate Current	23	ma
DC Grid Current (Approx.)□	7	ma
Driver Power Output (Approx.)□*	2	watts
Useful Power Output (Approx.)	5	watts

Maximum Circuit Values:

Grid-Circuit Resistance	0.1 max.	megohm

◇, ●, ○, ♦, □, *: See next page.

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UHF HIGH-MU TRIODE

FREQUENCY MULTIPLIER

Maximum CCSo Ratings, *Absolute Values*:

DC PLATE VOLTAGE	330 max.	volts
DC GRID VOLTAGE	-100 max.	volts
DC PLATE CURRENT	22 max.	ma
DC GRID CURRENT	8 max.	ma
PLATE INPUT	7.5 max.	watts
PLATE DISSIPATION◊	6.25 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	90 max.	volts
Heater positive with respect to cathode	90 max.	volts
PLATE-SEAL TEMPERATURE	175 max.	°C

Typical Operation in Grounded-Grid Circuit:

	Tripler to 480 Mc	*Doubler to 960 Mc*	
DC Plate Voltage	300	300	volts
DC Grid Voltage♦	-90	-70	volts
DC Plate Current	18	17.3	ma
DC Grid Current (Approx.)□	6	7	ma
Driver Power Output (Approx.)□*	2.1	2	watts
Useful Power Output (Approx.)	2.1	2	watts

Maximum Circuit Values:

Grid-Circuit Resistance	0.1 max.	megohm

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	*Min.*	*Max.*	
Heater Current	1	0.125	0.145	amp
Grid-to Plate Capacitance	-	1.2	1.6	μμf
Grid-to Cathode Capacitance	-	2.2	2.8	μμf
Plate-to Cathode Capacitance	-	-	0.035	μμf

Note 1: With 6.3 volts ac or dc on heater.

◊ In applications where the plate dissipation exceeds 2.5 watts, it is important that a large area of contact be provided between the plate cylinder and the terminal to provide adequate heat conduction.

o Continuous Commercial Service.

● Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115 percent of the carrier conditions.

♦ Obtained from grid resistor.

* In grounded-grid circuits the grid-driving voltage and the developed rf plate voltage act in series to supply the load circuit. As a result, the required driving power is increased over that needed for grounded-cathode circuits. The increased driving power is not lost because it appears as output from the grounded-grid stage. If the driving voltage and grid current are increased, the output will always increase.

□ For effec. of load resistance on grid current and driving power, refer to TUBE RATINGS—*Grid Current and Driving Power* in General Section.

OUTLINE DIMENSIONS and INSTALLATION NOTES for the 5876 are the same as those shown for Type 5675.

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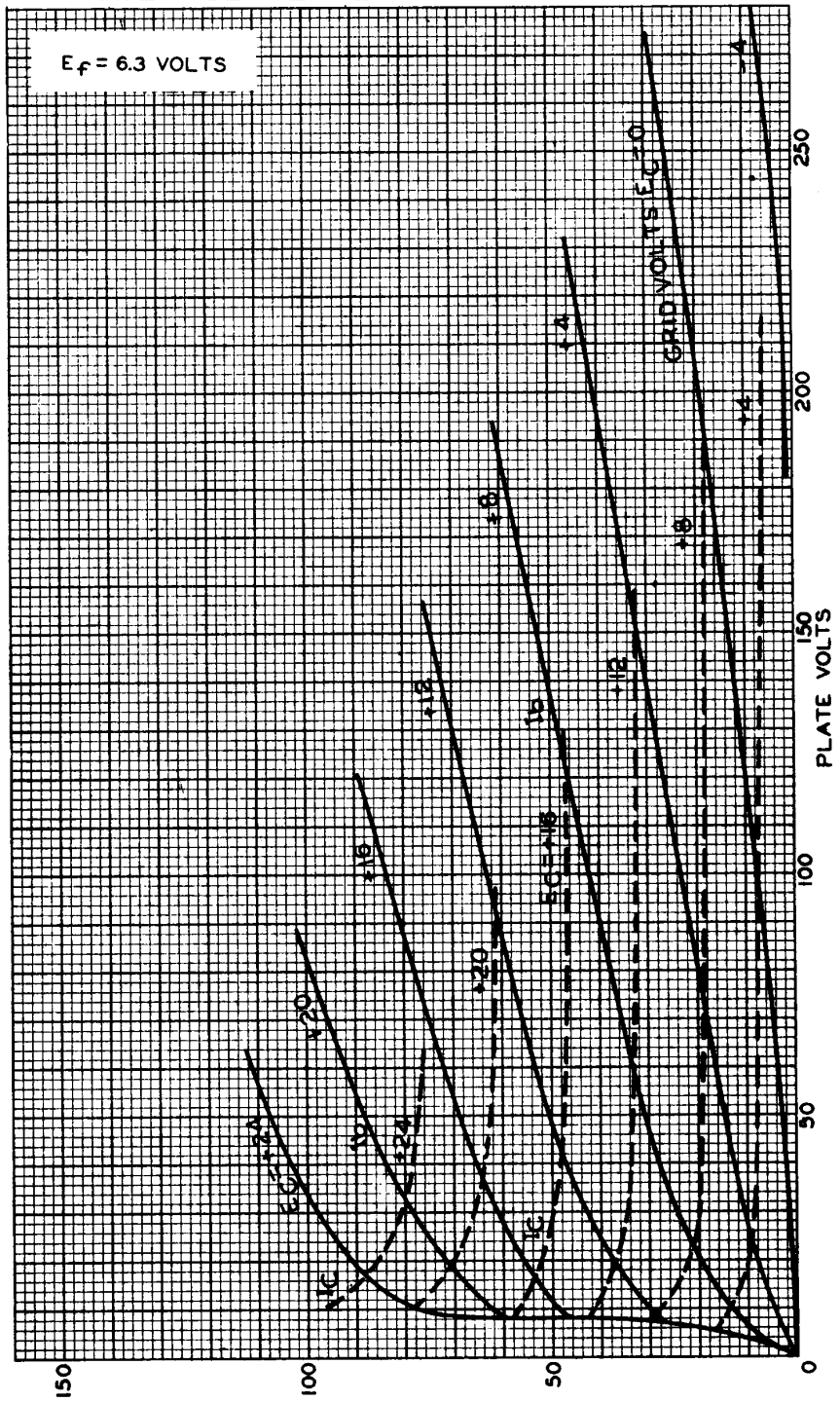
AVERAGE PLATE CHARACTERISTICS



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TUBE DEPARTMENT

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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