

AMPEREX TUBE TYPE 6076

The 6076 is a four-electrode, forced air cooled tube designed for use as an R.F. power amplifier, modulator and frequency multiplier. The anode is capable of dissipating 3 kilowatts. The cathode is a thoriated tungsten filament. Maximum ratings apply up to 220 megacycles.

GENERAL CHARACTERISTICS

ELECTRICAL DATA

Filament voltage	6.3 volts
Filament current	32.5 amps
Amplification factor (G _m , Mu)	8.5
Transconductance (I _b =2 amps)	19,000 micromhos
Direct Inter-electrode Capacitances	
Input	0.35 μ f
Output	23.5 μ f
Plate to Filament	8.4 μ f
Peak cathode current ¹ (max.)	7 amps

MECHANICAL DATA

Max. overall dimensions	
Length	6 3/4 inches
Diameter	3 3/4 inches
Mounting position	Vertical, anode up or down
Control Grid Connection	See note ¹

AIR COOLING DATA

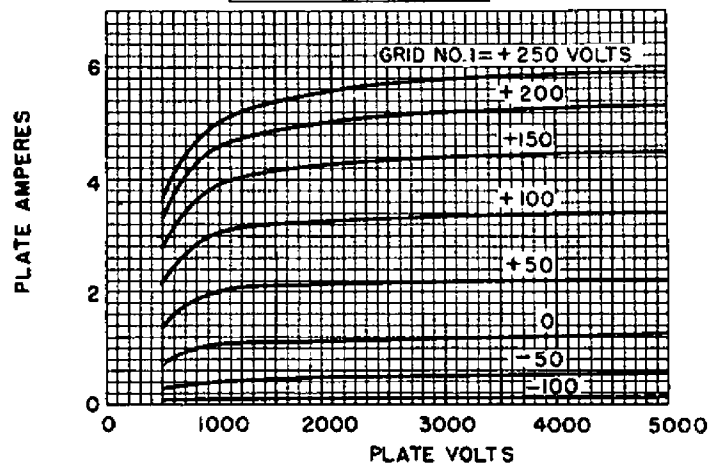
Plate dissipation (kw)	Height above sea level (feet)	Inlet air temp. ($^{\circ}$ C)	Min. Air flow (cu. ft./min.)	Inlet pressure (inches of water)
1	0	35	65	0.4
1	0	45	80	0.6
1	5,000	35	80	0.5
1	10,000	25	80	0.5
2.5	0	35	160	2.4
2.5	0	45	190	3.4
2.5	5,000	35	190	2.9
2.5	10,000	25	205	3.0
3	0	35	200	3.8

Max. Bulb Temperature	250 $^{\circ}$ C
Max. Seal Temperature ¹	180 $^{\circ}$ C

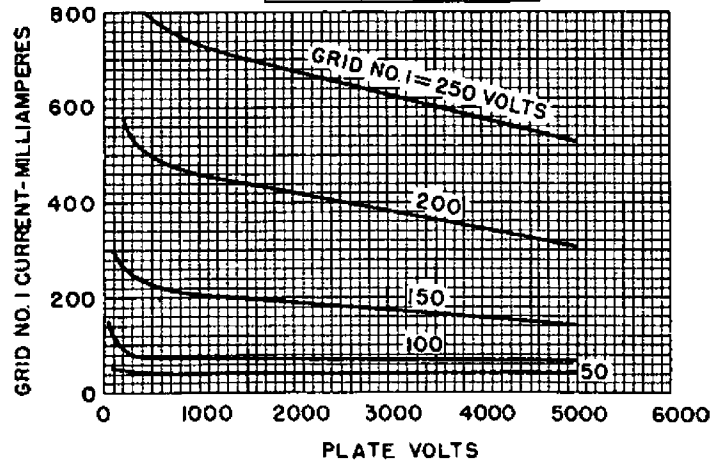
ACCESSORIES

Grid Connector	Amperex #S-3706
Filament Connector	Amperex #S-3707
Air Flow Chamber	Amperex #S-11882
Net Weight (approx.)	5 lbs.

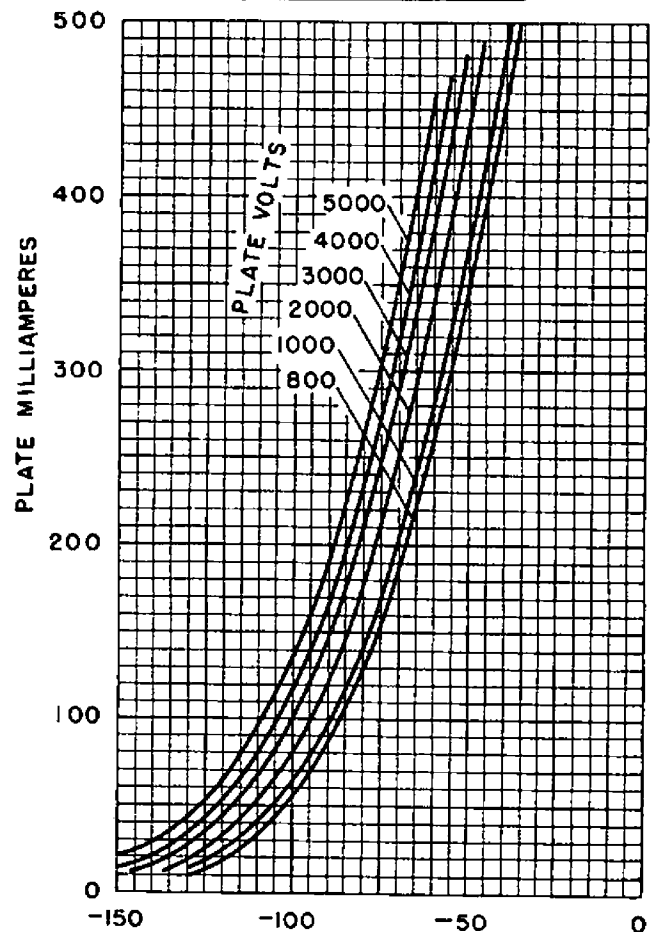
GRID NO. 2 = 800 VOLTS



GRID NO. 2 = 800 VOLTS



GRID NO. 2 = 800 VOLTS



PERCENT EFFICIENCY
 GRID MILLIAMPERES
 POWER WATTS
 PLATE VOLTS
 PLATE MILLIAMPERES

CLASS C TELEGRAPHY, CONTROLLED
 GRID NO. 1 = -250 VOLTS
 GRID NO. 2 = 800 VOLTS

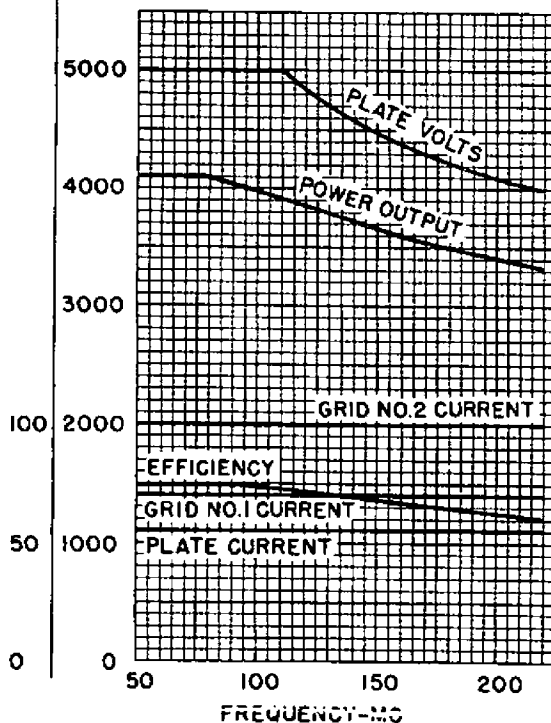


Plate and Screen Grid Modulated, R.F. Power Amplifier—Class C Telephony

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

Maximum Ratings, Absolute Values (Frequencies up to 110 mc.)

	CCS
D.C. Plate Voltage	4000 max. volts
D.C. Grid No. 2 Voltage	800 max. volts
D.C. Grid No. 1 Voltage	-500 max. volts
D.C. Plate Current	0.9 max. amp
Plate Input	3.7 max. kilowatts
Plate Dissipation	2 max. kilowatts
Grid No. 2 Dissipation*	100 max. watts
Grid No. 1 Dissipation	30 max. watts

Typical Operation

(Screen grid supply via a choke of 60 henrys)

	CCS
D.C. Plate Voltage	4000 volts
D.C. Grid No. 2 Voltage	800 volts
D.C. Grid No. 1 Voltage	-375 volts
Peak R.F. Grid No. 1 Voltage	625 volts
D.C. Plate Current	0.9 amp
D.C. Grid No. 2 Current	120 ma
D.C. Grid No. 1 Current	85 ma
Driving Power	48 watts
Power Output	2.7 kilowatts

Push-Pull R.F. Power Amplifier Class C Telephony

Key-down conditions per tube without amplitude modulation*

Maximum Ratings, Absolute Values (Frequencies up to 110 mc.)

	CCS
D.C. Plate Voltage	5000 max. volts*
D.C. Grid No. 2 Voltage	800 max. volts
D.C. Grid No. 1 Voltage	-500 max. volts
D.C. Plate Current	1.1 max. amps
Plate Input	5.5 max. kilowatts
Plate Dissipation	3 max. kilowatts
Grid No. 2 Dissipation	100 max. watts
Grid No. 1 Dissipation	30 max. watts

Typical Operation

	CCS	CCS	CCS	CCS
Frequency	75	110	75	110 Mc
D.C. Plate Voltage	4000	4000	5000	5000 volts
D.C. Grid No. 2 Voltage	800	800	800	800 volts
D.C. Grid No. 1 Voltage	-250	-250	-250	-250 volts
D.C. Plate Current	1.1	1.1	1.1	1.1 amps
D.C. Grid No. 2 Current	120	120	100	100 ma
D.C. Grid No. 1 Current	80	80	70	70 ma
Peak R.F. Grid No. 1 Voltage	500	500	480	480 volts
Driving Power	36	36	30	30 watts
Power Output	3.15	2.9	4.1	3.9 kilowatts

Grid Modulated R.F. Power Amplifier Class C Television Service

Negative Modulation, Positive Synchronization

Maximum Ratings, Absolute Values (Frequencies up to 220 mc.)

	CCS
D.C. Plate Voltage	4000 max. volts
D.C. Grid No. 2 Voltage	800 max. volts
D.C. Grid No. 1 Voltage	-500 max. volts
D.C. Plate Current (sync.)	1.5 max. amps
Plate Input (sync.)	6 max. kilowatts
Plate Dissipation (sync.)	3 max. kilowatts
Grid No. 2 Dissipation (sync.)	100 max. watts
Grid No. 1 Dissipation (sync.)	30 max. watts

Typical Operation

Television Service at 170-220 Mc⁷

	CCS ⁸	CCS ¹⁰
D.C. Plate Voltage	4000	4000 volts
D.C. Grid No. 2 Voltage	800	800 volts
D.C. Grid No. 1 Voltage		
Synchronization level	-150	-150 volts
Pedestal level	-230	-230 volts
White level	-450	-450 volts

R.F. Grid No. 1 Voltage, peak to peak	850	850 volts ¹¹
D.C. Plate Current		
Synchronization level	2.75	2.75 amps
Pedestal level	2.1	1.7 amps
D.C. Grid No. 2 Current		
Synchronization level	110	250 ma
Pedestal level	50	80 ma

D.C. Grid No. 1 Current		
Synchronization level	100	80 ma
Pedestal level	50	25 ma
Driving Power at Synchronization level	300-400	200-300 watts ¹²

Power Output		
Synchronization level	5	5.9 kilowatts
Pedestal level	2.8	4.0 kilowatts

R.F. Power Amplifier Class B—Television Service

Maximum Ratings, Absolute Values (Frequencies up to 220 mc.)

	CCS
D.C. Plate Voltage	4000 max. volts
D.C. Grid No. 2 Voltage	800 max. volts
D.C. Plate Current (sync.)	1.5 max. amps
Plate Input (sync.)	6 max. kilowatts
Plate Dissipation (sync.)	3 max. kilowatts
Grid No. 2 Dissipation (sync.)	100 max. watts
Grid No. 1 Dissipation (sync.)	30 max. watts

Typical Operation

Television Service at 170-220 Mc⁷

	CCS ¹³
D.C. Plate Voltage	4000 volts
D.C. Grid No. 2 Voltage	800 volts
D.C. Grid No. 1 Voltage	-150 volts
R.F. Grid No. 1 Voltage peak to peak	
Synchronization level ¹⁴	850 volts
Pedestal level ¹⁴	700 volts
D.C. Plate Current	
Synchronization level	2.75 amps
Pedestal level	2.1 amps
D.C. Grid No. 2 Current	
Synchronization level	110 ma
Pedestal level	50 ma
D.C. Grid No. 1 Current	
Synchronization level	100 ma
Pedestal level	50 ma
Driving Power at Synchronization level ¹²	300-400 watts
Power Output	
Synchronization level	5 kilowatts
Pedestal level	2.8 kilowatts

⁷Represents maximum usable cathode current for any condition of operation.

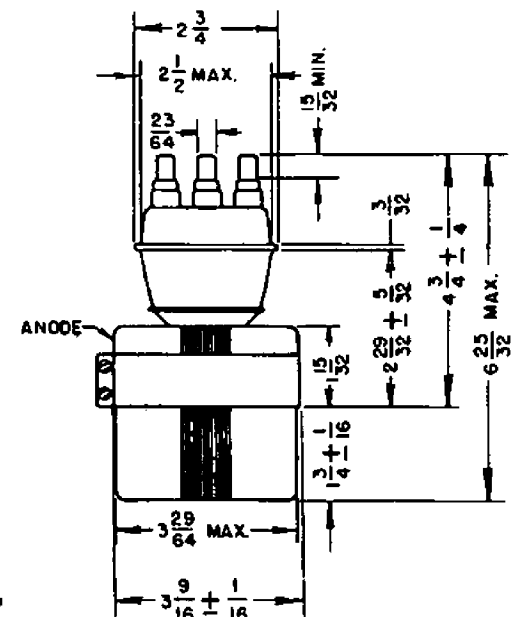
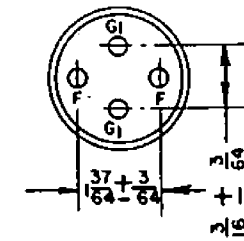
⁸Both pins must be used to make connection to the control grid.

⁹To keep the temperature of the seals below this value, it may be necessary to direct an air flow of sufficient velocity to the seals.

¹⁰For all other modulation methods the grid No. 2 dissipation is max. 65 watts.

¹¹Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 per cent of the carrier conditions.

¹²At 220 Mc the D.C. Plate Voltage=4000 volts max. For other frequencies, see derating curve.



¹³Values for two tubes in push-pull.

¹⁴Wide band: 8.5 Mc bandwidth at -1.5 db or 12 Mc at -3 db.

¹⁵Narrow band: 7.5 Mc bandwidth at -3 db.

¹⁶The values of bandwidth are based on measurements on a circuit with a single LC-section.

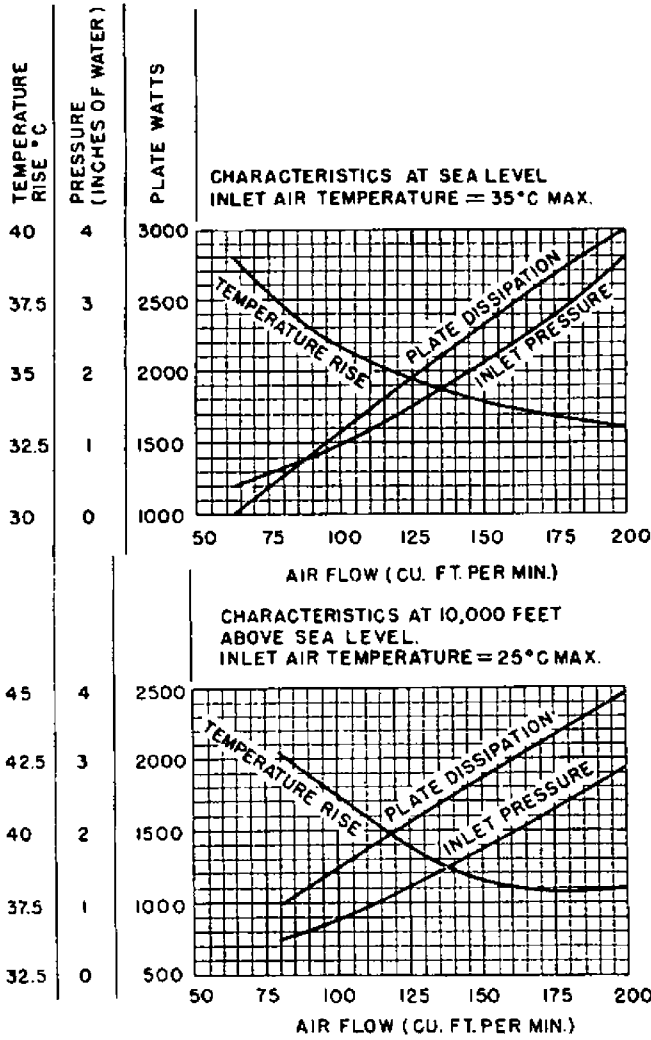
¹⁷Measured by slide back method.

¹⁸Driving Power is accounted for largely by circuit losses. The indicated driving power is required to take care of losses in damping resistors, circuit losses and tube driving power.

¹⁹Bandwidth: 6.5 Mc at -1.5 db or 12 Mc at -3 db.

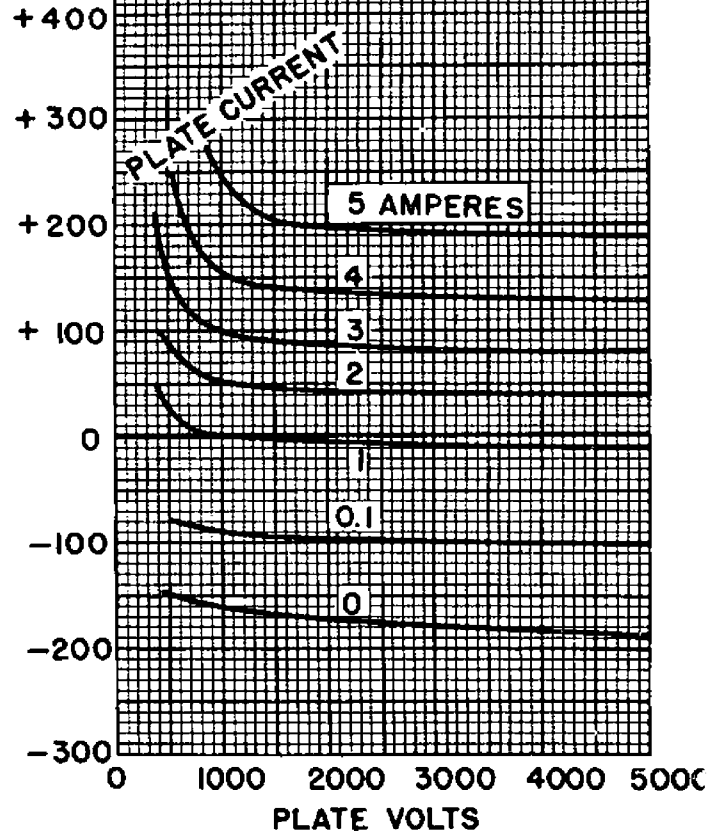
²⁰Measured by increasing fixed bias until no grid current flows.

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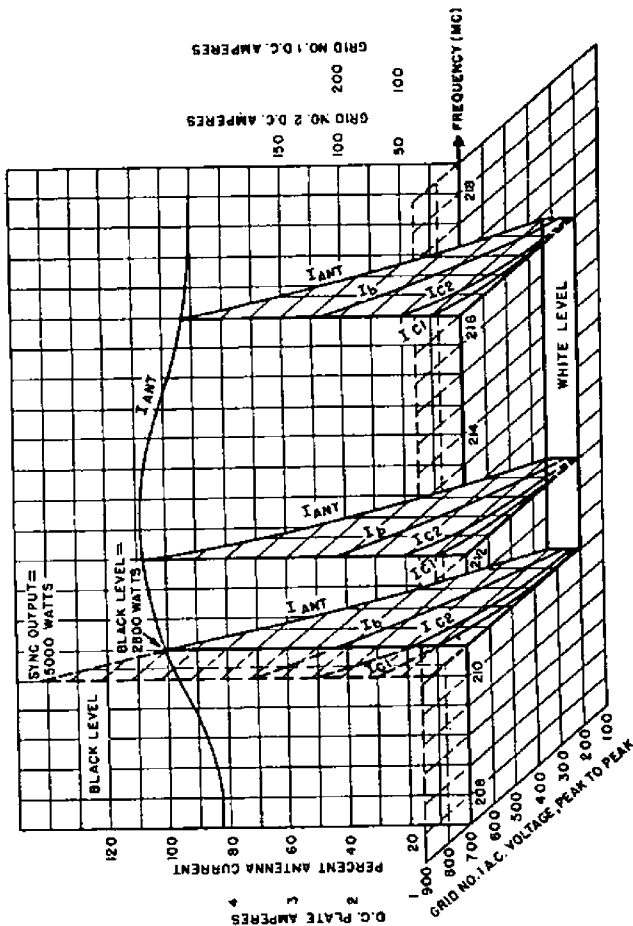
GRID NO. 1 VOLTS

CONSTANT PLATE CURRENT
GRID NO. 2 = 800 VOLTS



GRID MODULATED M.F. CLASS B AMPLIFIER-T.V. SERVICE (2 TUBES, PUSH-PULL)

PLATE VOLTAGE = 4000 VOLTS
GRID NO. 2 VOLTAGE = 800 VOLTS
GRID NO. 1 BIAS = 150 VOLTS



GRID MODULATED M.F. CLASS C AMPLIFIER-T.V. SERVICE (2 TUBES, PUSH-PULL)

PLATE VOLTAGE = 4000 VOLTS
GRID NO. 2 VOLTAGE = 800 VOLTS
GRID NO. 1 A.C. VOLTAGE = 850 VOLTS, PEAK TO PEAK

