



TECHNICAL DATA

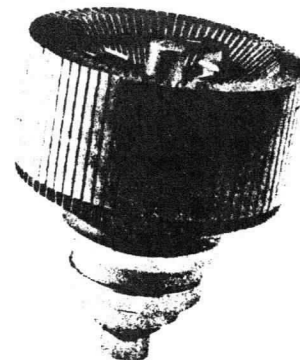
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Y-834

TETRODE

*THIS IS EIMAC'S EQUIV TO
TM 347*

The EIMAC Y834 is a ceramic/metal, forced-air cooled, radial-beam tetrode with a rated maximum plate dissipation of 4.5 kW. It is especially designed for UHF LPTV, TV translator and linear amplifier operation requiring low intermodulation distortion up to 1000 MHz. IMD level is better than -52dB.



GENERAL CHARACTERISTICS

ELECTRICAL

Type of Cathode	Thoriated Tungsten
Heating	Direct
Filament Voltage ¹	6.0 ± 2% volts
Filament Current, approximately	34 amps
Peak Cathode Current	6 amps
Interelectrode Capacitances, approximately:	
Input (g2 tied to g1)	40 pF
Output (g2 tied to g1)	8.2 pF
Cathode/Anode	0.02 pF
Amplification Factor (g1 - g2 average)	7
Transconductance, average	40 mmhos

MECHANICAL

Mounting Position	Vertical
Anode Cooling	Forced Air
Minimum Airflow ²	70 cfm
Corresponding Pressure Drop	0.8" H ₂ O
Maximum Inlet Air Temperature	45°C
Maximum Outlet Air Temperature	100°C
Maximum Temperature ³	250°C
Net Weight	5 lbs/2.3Kg
Dimensions	See Drawing

¹In the high frequency operation the cathode is subjected to considerable back bombardment which raises its temperature. After the circuit has been adjusted for proper tube operation, the filament voltage must be reduced to prevent overheating of the cathode with resulting short life.

²For 30°C inlet air temperature and 2 kW anode dissipation.

³At any point on the ceramic insulators. For maximum tube life, this temperature must not exceed 200°C. The cooling air flow must be established before application of any voltage and maintained for at least one minute after filament voltage has been removed.

20April84; Revised April 86

OPERATING CONDITIONS

MAXIMUM RATINGS (all potentials refer to cathode)

DC Anode Voltage	5 kV
DC Grid g2 Voltage	650 V
DC Grid g1 Voltage	-200 V
Peak Cathode Current	6 A
DC Anode Current	2 A
Anode Dissipation	4.5 kW
Grid g2 Dissipation	25 W
Grid g1 Dissipation	5 W
Frequency	1000 MHz

CLASS A — LINEAR AMPLIFIER FOR TELEVISION TRANSLATOR

Aural and Video Signals Simultaneously

TYPICAL OPERATION

Operating Frequency	474-850 MHz
Bandwidth	10 MHz
Filament Voltage	6 V
DC Anode Voltage	4 kV
DC Grid g2 Voltage	400 V
DC Anode Current (no signal)	0.4 A
Peak Video Power	1.1 kW
Anode Current (black level + audio)	0.8 A
Gain	15.0dB
Intermodulation Products	-54 dB (*)
Distance Between Audio and Video Carriers	4.5 MHz

(*) Under video level (3-tone test) typical; depending on the cavity/circuit used and adjustments made.

ABSOLUTE MAXIMUM RATINGS: Values shown for each type of service are based on the "absolute system" and are not to be exceeded under any service conditions. These ratings are limiting values outside which the serviceability of the tube may be impaired. In order not to exceed absolute ratings, the equipment designer has the responsibility of determining an average design value for each rating below the absolute value of that rating by a safety factor so that the absolute values will never be exceeded under any usual conditions of supply voltage variation in the equipment itself. It does not necessarily follow that combinations of absolute maximum ratings can be attained simultaneously.

HIGH VOLTAGE: Normal operating voltages used with this tube are deadly. Equipment must be designed properly and operating precautions must be followed. Design all equipment so that no one can come in contact with high voltages. All equipment must include safety enclosures for high-voltage circuits and terminals, with interlock switches to open primary circuits of the power supply and to discharge high-voltage capacitors whenever access doors are opened. Interlock switches must not be bypassed or "cheated" to allow operation with access doors open. Always remember that **HIGH VOLTAGE CAN KILL.**

INTERELECTRODE CAPACITANCE: The actual internal interelectrode capacitance of a tube is influenced by many variables in most applications such as stray capacitance to the chassis, capacitance added by the socket used, stray capacitance between the tube terminals, and wiring effects. To control the actual capacitance values within the tube as the key component involved, the industry and military services use a standard test procedure as described in Electronic Industries Association Standard RS-191. This requires the use of specially constructed test fixtures which effectively shield all external tube leads from each other and eliminate any capacitance reading to "ground." The test is performed on a cold tube. Other factors being equal, controlling internal tube capacitance in this way normally assures good interchangeability of tubes over a period of time, even if the tube is made by different manufacturers. The capacitance values shown in the manufacturer's technical data, or test specifications, normally are taken in accordance with Standard RS-191.

The equipment designer is, therefore, cautioned to make allowance for the actual capacitance values which will exist in any normal application. Measurements should be taken with the socket and mounting which represent approximate final layout if capacitance values are highly significant in the design.

GRID OPERATION: Maximum control grid dissipation is 5 watts, determined approximately by the product of the dc grid current and the peak positive grid voltage.

SCREEN GRID OPERATION: Maximum screen grid dissipation is 25 watts. With no ac applied to the screen grid, dissipation is simply the product of dc screen voltage and the dc screen current. With screen modulation, dissipation is dependent on rms screen voltage and rms screen current. Plate voltage, plate loading, or bias voltage must never be removed while filament and screen voltages are present, since screen dissipation ratings will be exceeded. A protective spark-gap device should be connected between the screen grid and the cathode to guard against excessive voltage.

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