

CLASS-C OPERATION: Although specifically designed for linear amplifier service, the 3CX1200A7 may be operated as a class-C power amplifier or oscillator or as a plate-modulated radio-frequency power amplifier. The zero-bias characteristic of the 3CX1200A7 can be used to advantage in class-C amplifiers operating at plate voltages of 4000 volts or below by employing only grid-resistor bias. If driving power fails, plate dissipation is then kept to a low value because the tube will be operating at the normal static zero-bias conditions.

FILAMENT OPERATION: The rated filament voltage for the 3CX1200A7 is 7.5 volts. Filament voltage, as measured at the socket, must be maintained within the range of 7.87 to 7.13 volts to obtain maximum tube life.

For best tube life the inrush current to the filament should be limited to two times normal current during turn-on. This will minimize thermal stress on the thoriated-tungsten filament wire, which can cause internal tube geometry changes with repeated cycling.

HIGH VOLTAGE: Operating voltage for the 3CX1200A7 can be deadly, so the equipment must be designed properly and operating precautions must be followed. Design 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 the 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. Remember that HIGH VOLTAGE CAN KILL.

INTERMODULATION DISTORTION: Typical operating conditions with distortion values included are the result of data taken during actual operation at 2 megahertz. Intermodulation values listed are those measured at the full peak envelope power noted.

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.

INPUT CIRCUIT: When the 3CX1200A7 is operated as a grounded-grid rf amplifier, the use of a resonant tank in the cathode circuit is recommended in order to obtain greatest linearity and power output. For best results with a single-ended amplifier it is suggested that the cathode tank circuit operate at a Q of two or more.

SPECIAL APPLICATIONS: If it is desired to operate this tube under conditions widely different from those given here, write to the Varian Electron Device Group Sales Office or the Product Manager, Varian EIMAC, 1678 Pioneer Rd., Salt Lake City, UT 84104, for information and recommendation.