



**SUMMARY OF OPERATING CONDITIONS  
- PROPOSED FCC 1500 W RULING -**

**3CX800A7**

**AIR-COOLED  
HIGH-MU  
TRIODE**

The EIMAC 3CX800A7 is a power triode intended for use as a cathode-driven Class AB2 or Class B amplifier in rf applications including the VHF band. As a linear amplifier high power gain may be obtained without sacrifice of low intermodulation distortion characteristics. Low grid interception and high amplification factor combine to make the 3CX800A7 drive power requirements low for a tube of this power capacity. A single 3CX800A7 will operate at 750 PEP watts and 750 watts key-down CW output power so that a pair will operate in conformance with the new proposed ruling.

The anode is forced-air cooled and a pair is rated for 1600 watts of dissipation capability.

**GENERAL CHARACTERISTICS**

**ELECTRICAL**

Cathode: Oxide Coated, Unipotential  
 Heater Voltage . . . . . 13.5 ± 0.6 V  
 Heater Current, at 13.5 volts . . . . . 1.5 A

**MECHANICAL**

Maximum Dimensions . . . . . See Outline Drawing  
 Base . . . . . Large Wafer Elevenor 11-Pin with Ring  
 Recommended Socket . . . . . EIMAC P/N 154353  
 or E.F. Johnson #124-311-100

**RADIO FREQUENCY LINEAR AMPLIFIER  
CATHODE DRIVEN Class AB2**

**ABSOLUTE MAXIMUM RATINGS:**

|                             |      |        |
|-----------------------------|------|--------|
| DC PLATE VOLTAGE . . . . .  | 2500 | VOLTS  |
| DC PLATE CURRENT . . . . .  | 0.6  | AMPERE |
| PLATE DISSIPATION . . . . . | 800  | WATTS  |
| GRID DISSIPATION . . . . .  | 4.0  | WATTS  |

**TYPICAL OPERATION (CW), for 1.5 kW Input Power  
Class AB2 Cathode Driven (key-down conditions)**

|                                 |      |      |
|---------------------------------|------|------|
| Plate Voltage . . . . .         | 2200 | Vdc  |
| Cathode Bias Voltage . . . . .  | +8.2 | Vdc  |
| Plate Current . . . . .         | 495  | mAdc |
| Grid Current * . . . . .        | 36   | mAdc |
| Useful Output Power * . . . . . | 750  | W    |
| Driving Power * . . . . .       | 23   | W    |
| Power Gain * . . . . .          | 15.1 | dB   |
| Resonant Load Impedance ##      | 2700 | Ohms |

**TYPICAL OPERATION**

Class AB2 Cathode Driven, Peak Envelope or Modulation Crest Conditions

|   |      |      |
|---|------|------|
| Plate Voltage . . . . .                       | 2200 | Vdc  |
| Cathode Bias Voltage . . . . .                | +8.2 | Vdc  |
| Zero-Signal Plate Current * . . . . .         | 15   | mAdc |
| Single-Tone Plate Current # . . . . .         | 495  | mAdc |
| Two-Tone Plate Current . . . . .              | 313  | mAdc |
| Single-Tone Grid Current * . . . . .          | 36   | mAdc |
| Two-Tone Grid Current * . . . . .             | 16   | mAdc |
| Peak rf Cathode Voltage * . . . . .           | 64   | v    |
| Peak Driving Power * . . . . .                | 23   | W    |
| Single-Tone Useful Output Power * . . . . .   | 750  | W    |
| Power Gain * . . . . .                        | 15.1 | dB   |
| Resonant Load Impedance . . . . .             | 2700 | Ohms |
| Intermod. Distortion Products *, ## . . . . . |      |      |
| 3rd Order . . . . .                           | 36   | dB   |
| 5th Order . . . . .                           | 32   | dB   |

\* Approximate value.

# Short-term duty should not exceed 50%. During testing "on-time" must be very brief.

## Ref. to one tone of a two equal-tone signal.

**APPLICATION**

**MOUNTING & SOCKETING** - The tubes may be mounted in any position. At least some of the air used for anode cooling must circulate past the base of the tube to provide cooling of these seal areas.

**COOLING** - Forced-air cooling is required. The data shown is for full rated (800 W) dissipation

on each tube with incoming cooling air at 25°C:

| Sea Level       |                       | 5000 Feet       |                       |
|-----------------|-----------------------|-----------------|-----------------------|
| Flow Rate (CFM) | Press. Drop In. Water | Flow Rate (CFM) | Press. Drop In. Water |
| 19.0            | 0.35                  | 23.0            | 0.39                  |