**SYLVANIA TYPE 12EM6**
**DIODE-TETRODE**

**MECHANICAL DATA**
- Bulb: T-6½
- Base: E9-1, Miniature Button 9-Pin
- Outline: 6-3
- Basing: 9HV
- Cathode: Coated Unipotential
- Mounting Position: Any

**ELECTRICAL DATA**

**HEATER CHARACTERISTICS**
- Heater Voltage: 12.6 Volts
- Heater Current: 500 Ma
- Heater-Cathode Voltage (Design Center Values): 30 Volts Max.
- Heater Positive with Respect to Cathode: 30 Volts Max.
- Heater Negative with Respect to Cathode: 30 Volts Max.

**MAXIMUM RATINGS (Design Center Values)**
- Plate Voltage: 30 Volts
- Grid No. 2 Voltage: 30 Volts
- Plate Dissipation: 0.5 Watts
- Grid No. 1 Resistance: 15 Megohms
- Average Diode Current: 10 Ma.

**CHARACTERISTICS**
- Class A; Amplifier
- Plate Voltage: 12.6 Volts
- Grid No. 2 Voltage: 12.6 Volts
- Grid No. 1 Voltage: 2.2 Megohms
- Grid No. 1 Resistor: 6.0 Ma
- Plate Current: 1.0 Ma
- Transconductance: 5000 μmhos
- Plate Resistance (approx.): 4000 Ohms
- Average Diode Current at 10 Volts D.C.: 1.0 Ma

**TYPICAL OPERATION**
- Plate Voltage: 12.6 Volts
- Grid No. 2 Voltage: 12.6 Volts
- Grid No. 1 Voltage: 1.0 Volts
- AF Signal Source Resistance: 200,000 Ohms
- Plate Current (Signal Applied): 2.5 Ma
- Load Resistance: 3500 Ohms
- Power Output: 10 Mw
- Total Harmonic Distortion: 10 Percent

**NOTES:**
1. This tube is intended for use in automobile radios operated from a nominal 12 volt battery. Design of the tube is such that the heater will operate satisfactorily over the range 10.0 volts to 15.9 volts, and that the maximum ratings provide a safety factor for the wide voltage variation encountered with this type of supply.
2. Contact potential bias developed across a 2.2 megohm resistor.
3. Bias voltage is developed across a 15 megohm resistor by means of Grid No. 1 rectification (obtained when applying the specified signal voltage) and contact potential.
4. With no signal applied to Grid No. 1 and bias developed solely by contact potential, the plate current is 6.0 ma.

**APPLICATION**
The Sylvania Type 12EM6 is a miniature diode-tetrode designed for use in automobile receivers. The diode section is intended for use as a detector while the tetrode section is designed to be used as a power amplifier driver. It is designed for operation where the heater, plate and screen voltages are supplied directly from a 12 volt automotive storage battery.