

# 7C6

## Description and Rating

### DUPLEX-DIODE TRIODE

#### GENERAL DESCRIPTION

Principal Application: The 7C6 is a duplex-diode high- $\mu$  triode designed for use as a combined detector, automatic-volume-control rectifier and audio amplifier in a-c, a-c/d-c, or automobile receivers.

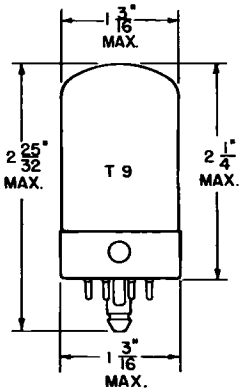
Cathode: . . . . . Coated Unipotential  
 Heater Voltage (A-C or D-C). . . . . 6.3 Volts  
 Heater Current . . . . . 0.15 Ampere  
 Envelope: . . . . . T-9 Glass  
 Base: . . . . . DB-1, Locking-In 8-Pin  
 Mounting Position: . . . . . Any

tor, automatic-volume-control rectifier and audio amplifier in a-c, a-c/d-c, or automobile receivers.

Direct Interelectrode Capacitances:\*

|                                      |      |                  |
|--------------------------------------|------|------------------|
| Triode Grid to Plate . . . . .       | 1.6  | $\mu\mu\text{f}$ |
| Triode Input . . . . .               | 2.4  | $\mu\mu\text{f}$ |
| Triode Output . . . . .              | 2.4  | $\mu\mu\text{f}$ |
| Diode Input (Each Section) . . . . . | 1.6  | $\mu\mu\text{f}$ |
| Diode 1 Plate to Grid (Max). . . . . | 0.01 | $\mu\mu\text{f}$ |

#### PHYSICAL DIMENSIONS

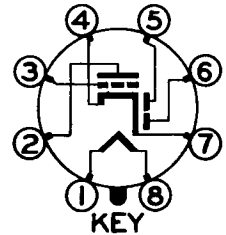


RMA 9-30

#### TERMINAL CONNECTIONS

- Pin 1 - Heater
- Pin 2 - Triode Plate
- Pin 3 - Triode Grid
- Pin 4 - Cathode and Internal Shield
- Pin 5 - Diode Number 2 Plate
- Pin 6 - Diode Number 1 Plate
- Pin 7 - Cathode and Internal Shield
- Pin 8 - Heater

#### BASING DIAGRAM



RMA 8W  
BOTTOM VIEW

#### DESIGN CENTER VALUES:

|   |     |             |
|---|-----|-------------|
| Plate Voltage . . . . .                                       | 300 | Volts       |
| Positive D-C Grid Voltage . . . . .                           | 0   | Volts       |
| Plate Dissipation . . . . .                                   | 0.6 | Watt        |
| Heater-Cathode Voltage . . . . .                              | 90  | Volts       |
| Diode Current for Continuous Operation (Each Diode) . . . . . | 1.0 | Milliampere |

#### MAXIMUM RATINGS

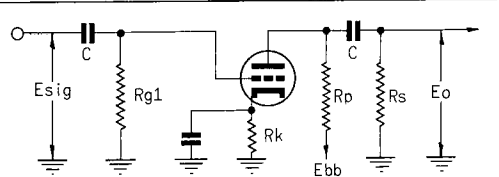
#### CHARACTERISTICS AND TYPICAL OPERATION

|  |        |        |              |
|--|--------|--------|--------------|
| CLASS A <sub>1</sub> AMPLIFIER               |        |        |              |
| Plate Voltage . . . . .                      | 100    | 250    | Volts        |
| Grid Voltage . . . . .                       | 0      | -1     | Volts        |
| Amplification Factor . . . . .               | 85     | 100    |              |
| Plate Resistance (Approx) . . . . .          | 100000 | 100000 | Ohms         |
| Transconductance . . . . .                   | 850    | 1000   | Micromhos    |
| Plate Current . . . . .                      | 1.0    | 1.3    | Milliamperes |
| Average Diode Current: (Each Diode)          |        |        |              |
| Measured with 10 Volts D-C Applied . . . . . | 2.0    |        | Milliamperes |

\* With external shield #308 connected to pin 7

### CLASS A RESISTANCE-COUPLED AMPLIFIER

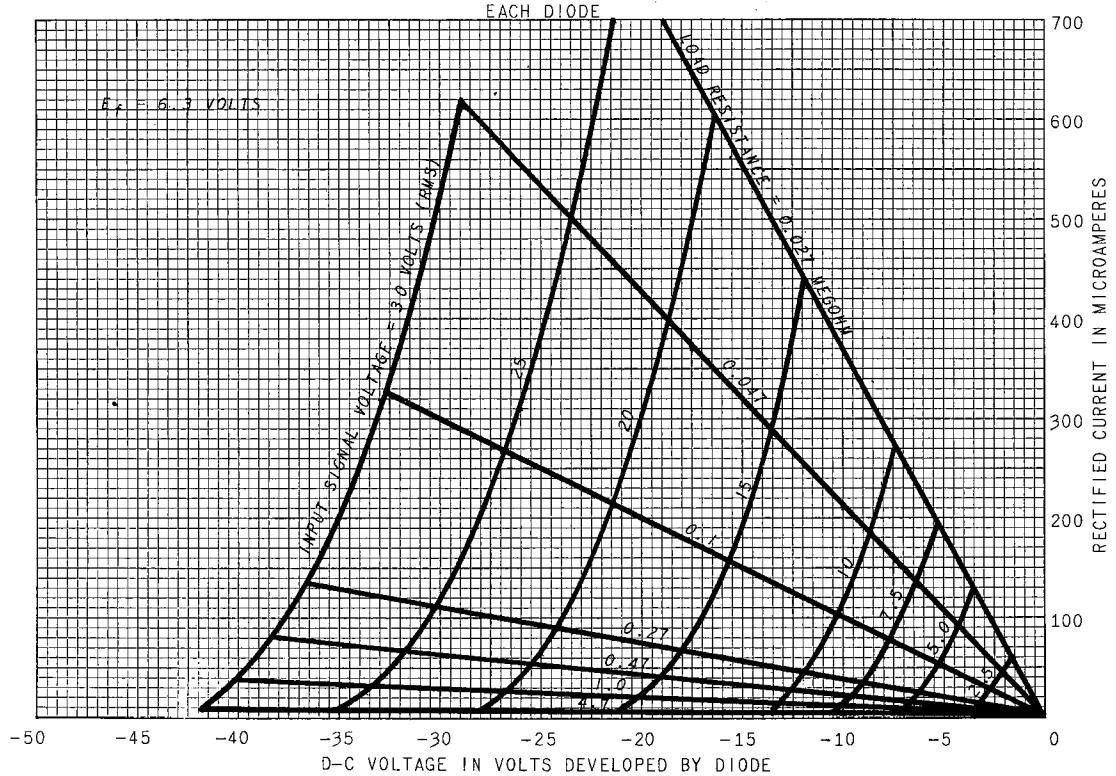
| Rp<br>Meg. | Rs<br>Meg. | Rg1<br>Meg. | Ebb = 90 Volts |      |     | Ebb = 180 Volts |      |    | Ebb = 300 Volts |      |    |
|------------|------------|-------------|----------------|------|-----|-----------------|------|----|-----------------|------|----|
|            |            |             | Rk             | Gain | Eo  | Rk              | Gain | Eo | Rk              | Gain | Eo |
| 0.10       | 0.10       | 0.10        | 1900           | 20   | 3.5 | 1200            | 26   | 10 | 1000            | 29   | 19 |
| 0.10       | 0.24       | 0.10        | 2000           | 27   | 5.1 | 1400            | 33   | 14 | 1100            | 36   | 27 |
| 0.24       | 0.24       | 0.10        | 3000           | 33   | 5.4 | 2000            | 41   | 16 | 1800            | 44   | 30 |
| 0.24       | 0.51       | 0.10        | 3400           | 41   | 7.5 | 2300            | 47   | 21 | 2000            | 51   | 40 |
| 0.51       | 0.51       | 0.10        | 5100           | 46   | 6.7 | 3700            | 53   | 20 | 3200            | 56   | 38 |
| 0.51       | 1.0        | 0.10        | 5800           | 46   | 8.8 | 4400            | 59   | 26 | 4000            | 62   | 48 |
| 0.24       | 0.24       | 10          | 0              | 33   | 3.4 | 0               | 42   | 14 | 0               | 48   | 27 |
| 0.24       | 0.51       | 10          | 0              | 40   | 4.7 | 0               | 50   | 18 | 0               | 55   | 37 |
| 0.51       | 0.51       | 10          | 0              | 41   | 4.5 | 0               | 55   | 17 | 0               | 61   | 34 |
| 0.51       | 1.0        | 10          | 0              | 48   | 6.1 | 0               | 63   | 22 | 0               | 66   | 45 |



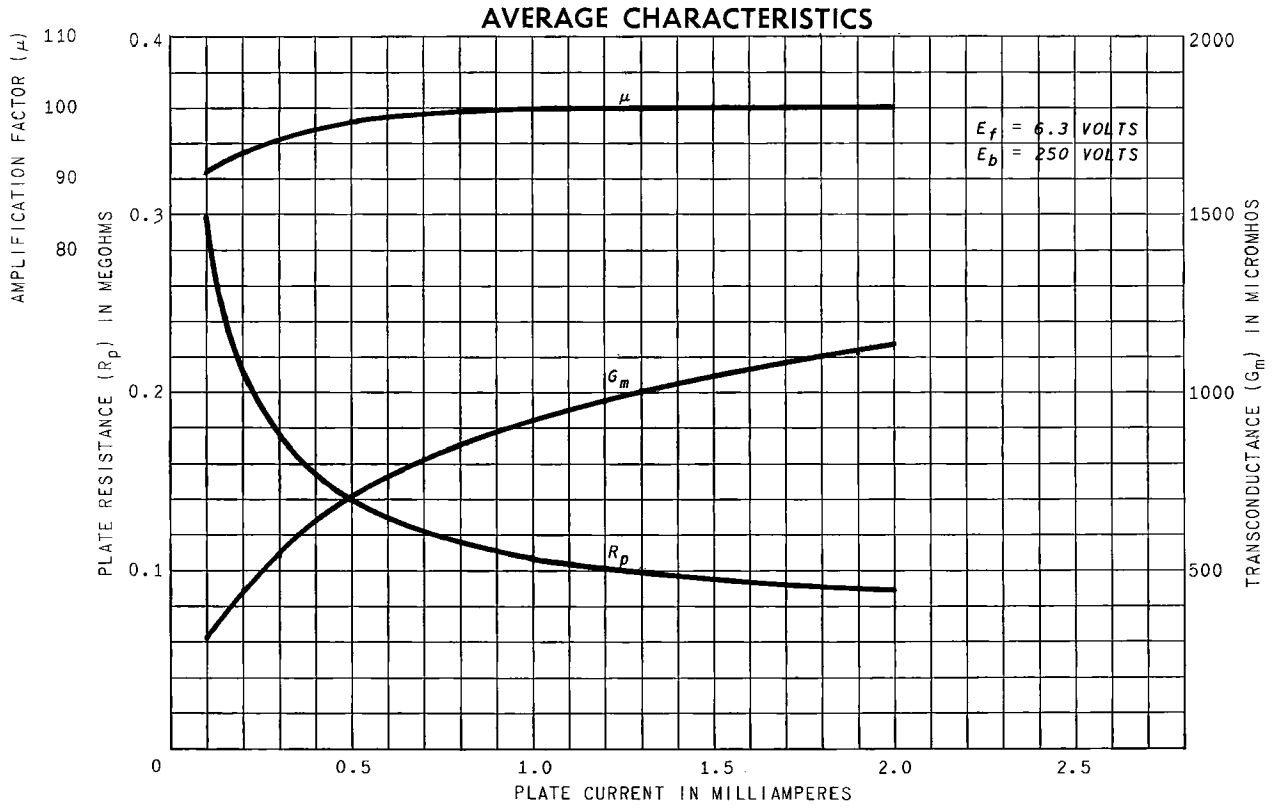
Note: Coupling capacitors (C) should be selected to give desired frequency response. Rk should be adequately by-passed.

Notes: 1. Eo is maximum RMS voltage output for five percent (5%) total harmonic distortion. 2. Gain measured at 2.0 volts RMS output. 3. For zero-bias data, generator impedance is negligible.

### OPERATION CHARACTERISTICS







Tube Divisions, Electronics Department



Schenectady, N. Y.