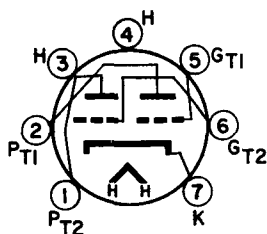


# AMPEREX TUBE TYPE E92CC

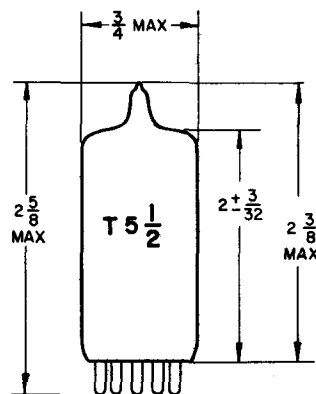
The Amperex E92CC is a reliable miniature twin triode designed for use in computer circuits which are not critical as to hum, microphonics and noise. Operation of the tube for long periods of time under cut-off conditions will not cause deterioration of the emission surface.

The E92CC is one of the Amperex "Premium Quality, 10,000 Hour" tubes.



## PIN CONNECTIONS

- 1- PLATE, TRIODE NO. 2
- 2- PLATE, TRIODE NO. 1
- 3- HEATER
- 4- HEATER
- 5- GRID, TRIODE NO. 1
- 6- GRID, TRIODE NO. 2
- 7- CATHODE



## GENERAL CHARACTERISTICS

### MECHANICAL

Cathode  
Outline  
Bulb  
Base  
Bulb temperature

coated, unipotential  
T 5½  
5-3  
E 7-1  
170°C max

### ELECTRICAL

Heater voltage  
Heater current

6.3 volts  
400 mA

### Direct Interelectrode Capacitances

#### Triode No. 1

|               |                    |
|---------------|--------------------|
| Input         | 3.1 $\mu\text{f}$  |
| Output        | 0.38 $\mu\text{f}$ |
| Plate to grid | 2.1 $\mu\text{f}$  |

#### Triode No. 2

|               |                    |
|---------------|--------------------|
| Input         | 3.1 $\mu\text{f}$  |
| Output        | 0.32 $\mu\text{f}$ |
| Plate to grid | 2.2 $\mu\text{f}$  |

#### Between sections

|                |                        |
|----------------|------------------------|
| Grid to grid   | 0.29 $\mu\text{f}$ max |
| Plate to plate | 2.0 $\mu\text{f}$ max  |

# E92CC

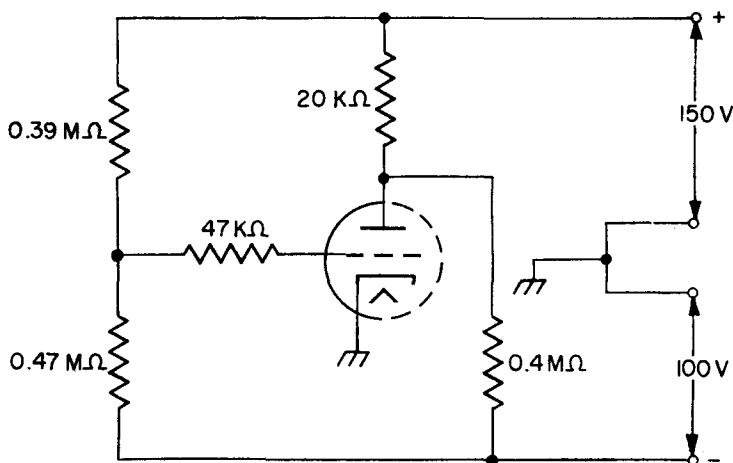
## Maximum Ratings, Absolute Values

|                                |                  |
|--------------------------------|------------------|
| Plate supply voltage           | 600 volts max    |
| Plate voltage                  | 300 volts max    |
| Negative grid voltage          | 100 volts max    |
| Peak Negative grid voltage     | 200 volts max    |
| Grid voltage                   | .5 volts max     |
| Cathode to heater voltage      | 100 volts max    |
| Cathode current                | 15 mA max        |
| Peak cathode current           | 75 mA max        |
| Grid current                   | 250 $\mu$ A max  |
| Peak grid current              | 1000 $\mu$ A max |
| Plate dissipation              | 2 watts max      |
| Grid resistor (automatic bias) | 1 megohm max     |
| Grid resistor (fixed bias)     | 0.5 megohm max   |
| Bulb temperature               | 170°C max        |

## Typical Operation, (Each Section)

|                       |                |
|-----------------------|----------------|
| Plate voltage         | 150 volts      |
| Plate current         | 8.5 mA         |
| Negative grid voltage | 1.75 volts     |
| Transconductance      | 6000 micromhos |
| Amplification Factor  | 45             |

## Computer Service



## CIRCUIT FOR COMPUTER SERVICE

|                                       |            |
|---------------------------------------|------------|
| Plate current                         | 0.1 mA max |
| Cut-off balance ( $E_{C1} - E_{C2}$ ) | 2 volts    |

## Characteristic Range Values for Equipment Design

|                                                                                                                                                                                            | <u>Initial Life</u> |      | <u>End of Life</u> <sup>1</sup> |                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------|---------------------------------|------------------|
|                                                                                                                                                                                            | Min                 | Max  | Min                             | Max              |
| Heater current<br>( $E_h = 6.3 \text{ V}$ )                                                                                                                                                | 380                 | 420  | 380                             | 420 mA           |
| Plate current<br>( $E_b = 150 \text{ V}$ , $E_c = -1.7 \text{ V}$ )                                                                                                                        | 4.5                 | 12.5 | -                               | - mA             |
| Plate current<br>( $E_{bb} = 150 \text{ V}$ , $E_c = -10 \text{ V}$<br>$R_p = 20 \text{ k}\Omega$ , $R_g = 47 \text{ k}\Omega$ )                                                           | -                   | 0.1  | -                               | 0.1 mA           |
| Negative grid current<br>( $E_b = 150 \text{ V}$ , $E_c = -1.7 \text{ V}$ )                                                                                                                | -                   | 0.2  | -                               | 1 $\mu\text{A}$  |
| Cut-off balance ( $E_{c1} - E_{c2}$ )<br>( $E_{bb} = E_{bb}' = 150 \text{ V}$ , $R_q = R_q' = 47 \text{ k}\Omega$ ,<br>$R_p = R_p' = 20 \text{ k}\Omega$ , $I_a = I_a' = 0.1 \text{ mA}$ ) | -                   | 2    | -                               | 2 volts          |
| Cathode to Heater current<br>(cathode positive, $R_{\text{series}} = 1 \text{ meg}$ ,<br>$V_{hk} = 100 \text{ V}$ )                                                                        | -                   | 15   | -                               | 30 $\mu\text{A}$ |
| Plate resistor current (see Fig. 1)                                                                                                                                                        | 5.1                 | 5.9  | 4.75                            | - mA             |
| Transconductance<br>( $E_b = 150 \text{ V}$ , $R_k = 200 \Omega$ )                                                                                                                         | 4500                | 7500 | -                               | - micromhos      |
| Insulation Resistance<br>(between two arbitrary electrodes)                                                                                                                                | 20                  | -    | 20                              | - megohms        |

## Direct Interelectrode Capacitances

| <u>Triode No. 1</u>     | Min  | Max                |
|-------------------------|------|--------------------|
| Input                   | 2.2  | 4.0 $\mu\text{f}$  |
| Output                  | 0.28 | 0.48 $\mu\text{f}$ |
| Plate to grid           | 1.7  | 2.5 $\mu\text{f}$  |
| <u>Triode No. 2</u>     |      |                    |
| Input                   | 2.2  | 4.0 $\mu\text{f}$  |
| Output                  | 0.22 | 0.42 $\mu\text{f}$ |
| Plate to grid           | 1.8  | 2.6 $\mu\text{f}$  |
| <u>Between Sections</u> |      |                    |
| Grid to grid            | -    | 0.29 $\mu\text{f}$ |
| Plate to plate          | -    | 2.0 $\mu\text{f}$  |

<sup>1</sup> Conditions of life test (see Figure 1)

|                      |           |                                        |           |
|----------------------|-----------|----------------------------------------|-----------|
| Heater voltage       | 6.3 volts | Heater-cathode voltage                 |           |
| Plate supply voltage | 165 volts | (cathode negative)                     | 100 volts |
| Plate voltage        | 100 volts | Input voltage at frequency ca. 300 c/s |           |

S = 1:10

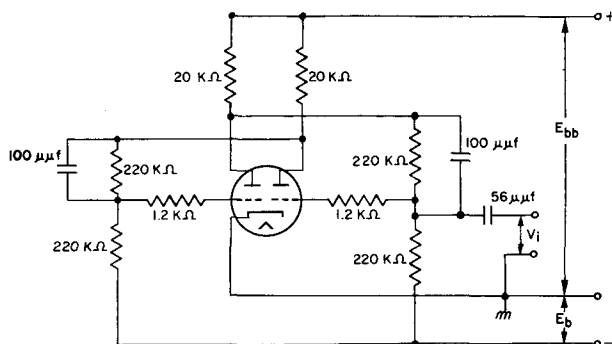
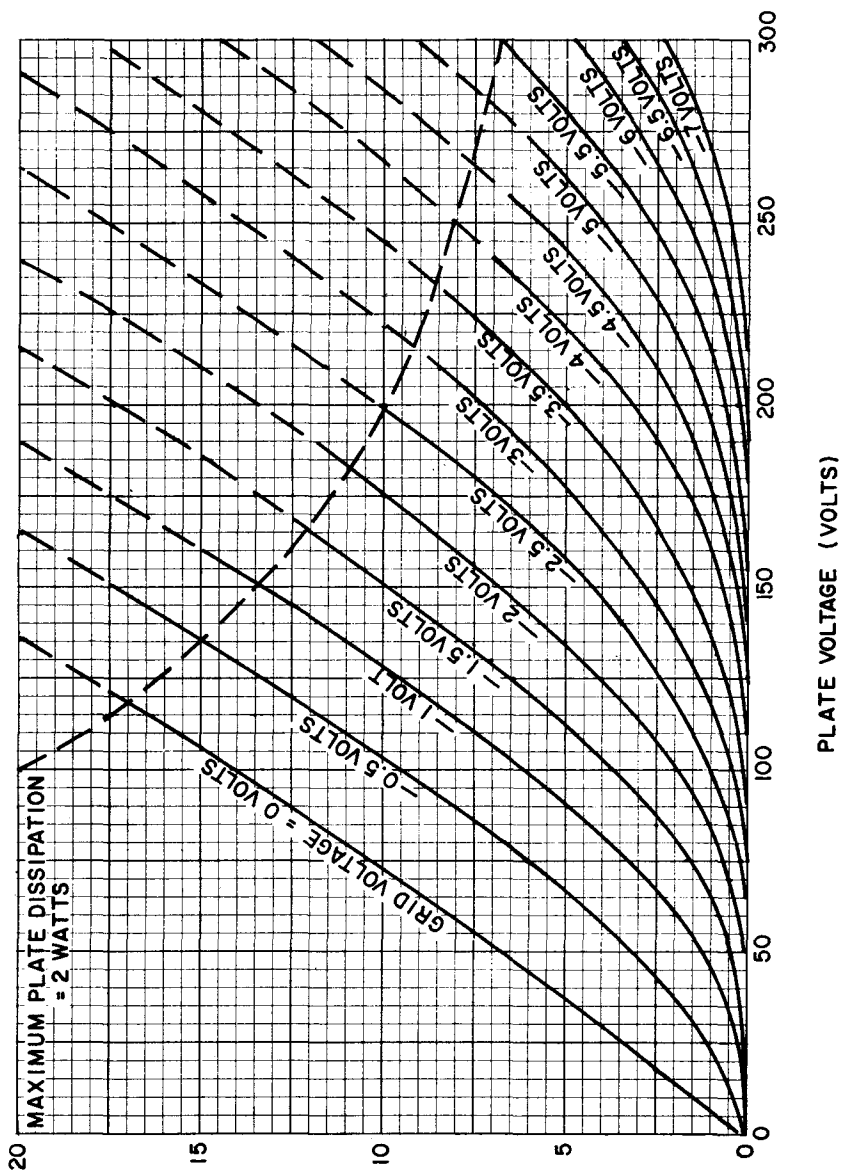


FIG. 1

## PLATE CURRENT CHARACTERISTICS



## TRANSFER CHARACTERISTICS

