

## TUNG-SOL

## HEPTODE PENTAGRID CONVERTER

## PHYSICAL SPECIFICATIONS

| EMITTER COATED UNIPOT. CATHODE |         | PIN CONNECTIONS      |                        |
|--------------------------------|---------|----------------------|------------------------|
| BASE SMALL WAFER OCTAL 8-PIN   |         | PIN 1 BASE SHELL     | PIN 7 HEATER           |
| WITH METAL SHELL               |         | PIN 2 HEATER         | PIN 8 SIGNAL GRID (G3) |
| BULB T-9 GLASS                 |         | PIN 3 PLATE          |                        |
| MAXIMUM DIAMETER               | 1 5/16" | PIN 4 SCR. (G2 & G4) | MOUNTING POS. ANY      |
| MAXIMUM OVERALL LENGTH         | 3 5/16" | PIN 5 OSC. GRID (G1) |                        |
| MAXIMUM SEATED HEIGHT          | 2 3/4"  | PIN 6 K, G5, S1      |                        |

## RATINGS

INTERPRETED ACCORDING TO RMA STANDARD MB-210

|                                                        |            |
|--------------------------------------------------------|------------|
| HEATER OR FILAMENT VOLTAGE (AC OR DC)                  | 12.6 VOLTS |
| HEATER OR FILAMENT CURRENT                             | 0.15 AMP.  |
| MAXIMUM PLATE VOLTAGE                                  | 300 VOLTS  |
| MAXIMUM SCREEN VOLTAGE                                 | 100 VOLTS  |
| MAXIMUM SCREEN SUPPLY VOLTAGE                          | 300 VOLTS  |
| MAXIMUM PLATE DISSIPATION                              | 1.0 WATT   |
| MAXIMUM SCREEN DISSIPATION                             | 1.0 WATT   |
| MAXIMUM TOTAL PLATE AND SCREEN DISSIPATION             | WATTS      |
| MAXIMUM TOTAL CATHODE CURRENT                          | 14 MA.     |
| MINIMUM EXTERNAL SIGNAL GRID BIAS VOLTAGE <sup>A</sup> | 0 VOLTS    |
| MAXIMUM ANODE-GRID VOLTAGE                             | VOLTS      |
| MAXIMUM ANODE-GRID SUPPLY VOLTAGE                      | VOLTS      |
| MAXIMUM ANODE-GRID DISSIPATION                         | WATT       |

<sup>A</sup> WITH SELF-EXCITED OSCILLATOR

## CAPACITANCES

|                                                        |                    |
|--------------------------------------------------------|--------------------|
| SIGNAL GRID TO MIXER PLATE (G3 TO P) <sup>B</sup>      | 0.2 $\mu$ f (MAX.) |
| K TO ALL OTHER ELECTRODES EXCEPT G1                    | 30 $\mu$ f         |
| SIGNAL GRID TO OSC. GRID (G3 TO G1) <sup>B</sup>       | 0.2 $\mu$ f (MAX.) |
| OSC. GRID TO MIXER PLATE (G1 TO P) <sup>B</sup>        | 0.2 $\mu$ f (MAX.) |
| SIGNAL INPUT (G3 TO ALL OTHER ELECTRODES) <sup>B</sup> | 11 $\mu$ f         |
| OSC. INPUT (G1 TO ALL OTHER ELECTRODES) <sup>B</sup>   | 8.0 $\mu$ f        |
| G1 TO ALL OTHER ELECTRODES EXCEPT K                    | 5 $\mu$ f          |
| MIXER OUTPUT (P TO ALL OTHER ELECTRODES) <sup>B</sup>  | 12 $\mu$ f         |
| G1 TO K                                                | 3.0 $\mu$ f        |

<sup>B</sup> WITH BASE SHELL AND STANDARD TUBE SHIELD CONNECTED TO CATHODETYPICAL OPERATING CONDITIONS AND CHARACTERISTICS  
CONVERTER SERVICE - SEPARATE EXCITATION

CHARACTERISTICS SHOWN ARE OBTAINED IN THE STANDARD RMA CONVERSION TRANSCONDUCTANCE TEST SET AND CORRESPOND VERY CLOSELY TO THOSE OBTAINED WITH ZERO BIAS IN A SELF-EXCITED OSCILLATOR CIRCUIT.

|                            |        |        |             |
|----------------------------|--------|--------|-------------|
| HEATER OR FILAMENT VOLTAGE | 12.6   | 12.6   | 12.6 VOLTS  |
| HEATER OR FILAMENT CURRENT | 0.15   | 0.15   | 0.15 AMP.   |
| PLATE VOLTAGE              | 28     | 100    | 250 VOLTS   |
| SCREEN VOLTAGE             | 28     | 100    | 100 VOLTS   |
| SIGNAL GRID BIAS           | -1     | -2     | -2 VOLTS    |
| ANODE-GRID VOLTAGE (G5)    | 0      | 0      | 0 VOLTS     |
| PLATE CURRENT              | 0.5    | 3.3    | 3.5 MA.     |
| SCREEN CURRENT             | 1.8    | 8.5    | 8.5 MA.     |
| ANODE-GRID CURRENT         |        |        | MA.         |
| OSCILLATOR-GRID CURRENT    | 0.1    | 0.5    | 0.5 MA.     |
| TOTAL CATHODE CURRENT      | 2.4    | 12.3   | 12.5 MA.    |
| OSCILLATOR-GRID RESISTOR   | 20 000 | 20 000 | 20 000 OHMS |
| PLATE RESISTANCE (APPROX.) | ---    | 0.5    | 1.0 MEGOHM  |

## CONVERSION TRANSCONDUCTANCE:

|                        |     |     |     |                    |
|------------------------|-----|-----|-----|--------------------|
| SIGNAL GRID BIAS = -1  | 250 | --- | --- | $\mu$ MHOS         |
| SIGNAL GRID BIAS = -2  | --- | 425 | 450 | $\mu$ MHOS         |
| SIGNAL GRID BIAS = -6  | 8   | 310 | 325 | $\mu$ MHOS         |
| SIGNAL GRID BIAS = -10 | --- | 75  | 80  | $\mu$ MHOS         |
| SIGNAL GRID BIAS = -35 | --- | 2   | 2   | $\mu$ MHOS APPROX. |

NOTE: WITH G2 & G4 CONNECTED TO PLATE (100 VOLTS), AND SIGNAL APPLIED TO G1 (0 VOLTS BIAS); THE TRANSCONDUCTANCE IS 4500  $\mu$ MHOS, THE PLATE CURRENT IS 2.7 MA., AND THE AMPLIFICATION IS 13. G3 IS CONNECTED TO GROUND DURING THIS TEST.

 PLATE  
1712

 APRIL 15  
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