

## 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 (G <sub>3</sub> )
BULB T-9 GLASS		PIN 3 PLATE	
MAXIMUM DIAMETER 1 5/16"		PIN 4 SCR. (G <sub>2</sub> & G <sub>4</sub> )	MOUNTING POS. ANY
MAXIMUM OVERALL LENGTH 3 5/16"		PIN 5 OSC. GRID (G <sub>1</sub> )	
MAXIMUM SEATED HEIGHT 2 3/4"		PIN 6 K, G <sub>5</sub> , S1	

#### RATINGS

INTERPRETED ACCORDING TO RMA STANDARD MG-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 (G <sub>3</sub> TO P) <sup>B</sup>	0.2 $\mu$ f (MAX.)
K TO ALL OTHER ELECTRODES EXCEPT G <sub>1</sub>	30 $\mu$ f
SIGNAL GRID TO OSC. GRID (G <sub>3</sub> TO G <sub>1</sub> ) <sup>B</sup>	0.2 $\mu$ f (MAX.)
OSC. GRID TO MIXER PLATE (G <sub>1</sub> TO P) <sup>B</sup>	0.2 $\mu$ f (MAX.)
SIGNAL INPUT (G <sub>3</sub> TO ALL OTHER ELECTRODES) <sup>B</sup>	11 $\mu$ f
OSC. INPUT (G <sub>1</sub> TO ALL OTHER ELECTRODES) <sup>B</sup>	8.0 $\mu$ f
G <sub>1</sub> TO ALL OTHER ELECTRODES EXCEPT K	5 $\mu$ f
MIXER OUTPUT (P TO ALL OTHER ELECTRODES) <sup>B</sup>	12 $\mu$ f
G <sub>1</sub> TO K	3.0 $\mu$ f

<sup>B</sup> WITH BASE SHELL AND STANDARD TUBE SHIELD CONNECTED TO CATHODE

#### TYPICAL 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 (G <sub>5</sub> )	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 G<sub>2</sub> & G<sub>4</sub> CONNECTED TO PLATE (100 VOLTS) AND SIGNAL APPLIED TO G<sub>1</sub> (0 VOLTS BIAS); THE TRANSCONDUCTANCE IS 4500  $\mu$ MHOS, THE PLATE CURRENT IS 2.7 MA., AND THE AMPLIFICATION IS 13. G<sub>3</sub> IS CONNECTED TO GROUND DURING THIS TEST.

PLATE  
1712  
APRIL 15  
1946