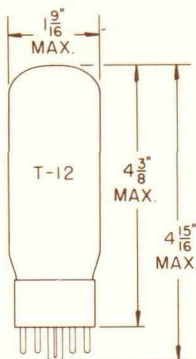


TUNG-SOL

TWIN DIODE



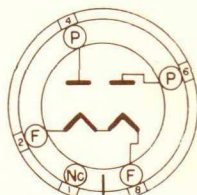
GLASS BULB

COATED FILAMENT

5.0 VOLTS 2.0 AMP.

AC OR DC

VERTICAL MOUNTING POSITION

HORIZONTAL OPERATION PERMITTED IF
PINS 1 & 4 ARE IN A VERTICAL PLANE.

BOTTOM VIEW

MEDIUM SHELL
5 PIN OCTALWITH
EXTERNAL BARRIERS

5T

THE 5R4GYA IS A FULL-WAVE HIGH-VACUUM RECTIFIER DESIGNED FOR USE IN POWER SUPPLIES OF HIGH CURRENT REQUIREMENTS. THE TUBE INCORPORATES A LOW-LOSS BASE AND IS CAPABLE OF WITHSTANDING HIGH PEAK INVERSE PLATE VOLTAGES. ELECTRICALLY, THE 5R4GYA IS A REPLACEMENT FOR THE 5R4GY; IT DIFFERS PRIMARILY FROM THE 5R4GYA BY EMPLOYING A STRAIGHT-SIDED T-12 CONSTRUCTION.

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

RECTIFIER SERVICE

FILAMENT VOLTAGE*	5.0	5.0	5.0	VOLTS
MAXIMUM PEAK INVERSE PLATE VOLTAGE NO-LOAD CONDITION ^A	2100	2400	2800	VOLTS
MAXIMUM STEADY-STATE PEAK PLATE CURRENT PER PLATE	650	650	650	MA.
MAXIMUM DC OUTPUT CURRENT WITH CAPACITOR-INPUT FILTER	250	175	150	MA.
WITH CHOKE-INPUT FILTER	250	250 ^B	175 ^C	MA.
MAXIMUM BULB TEMPERATURE (AT HOTTEST POINT)	210	210	210	°C

* SEE RATING CHART 1 FOR RESTRICTIONS ON APPLYING THE PLATE AND FILAMENT VOLTAGES SIMULTANEOUSLY.

^A OPERATION WITH PEAK INVERSE PLATE VOLTAGES UP TO 2400 VOLTS MAXIMUM IS PERMITTED AT ALTITUDES UP TO 40000 FEET. OPERATION WITH PEAK INVERSE PLATE VOLTAGES GREATER THAN 2400 AND UP TO 2800 VOLTS IS PERMITTED ONLY WHEN THE ALTITUDE DOES NOT EXCEED 20000 FEET AND THE DC OUTPUT CURRENT IS REDUCED TO THE VALUE INDICATED IN THE MAXIMUM RATINGS.

^B INPUT CHOKE OF 5 HENRYS MINIMUM REQUIRED FOR 60-CYCLE POWER SUPPLY.

^C INPUT CHOKE OF 10 HENRYS MINIMUM REQUIRED FOR 60-CYCLE POWER SUPPLY.

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TUNG-SOL

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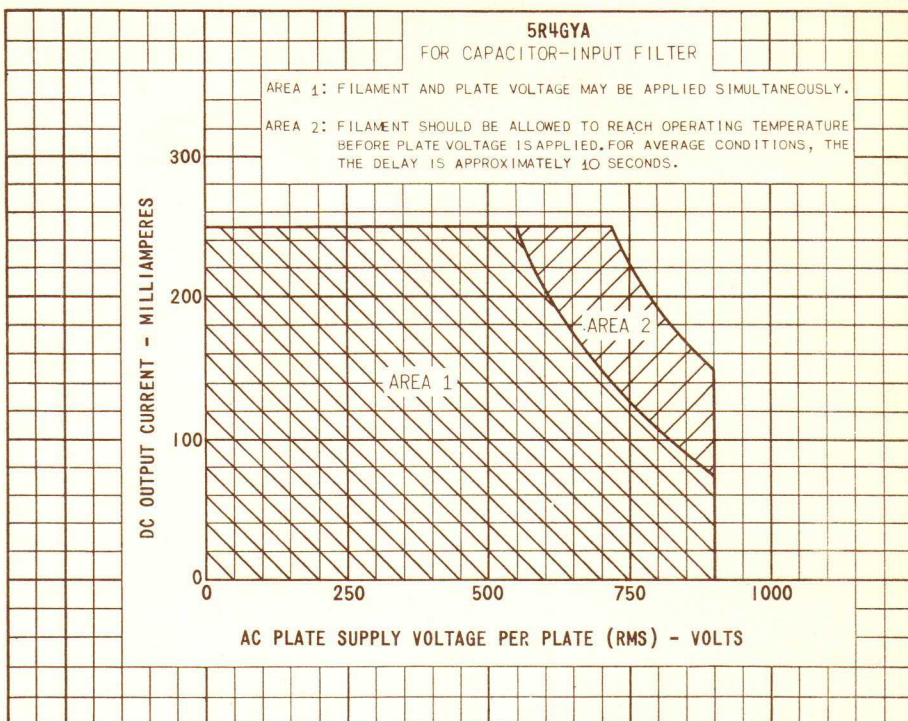
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

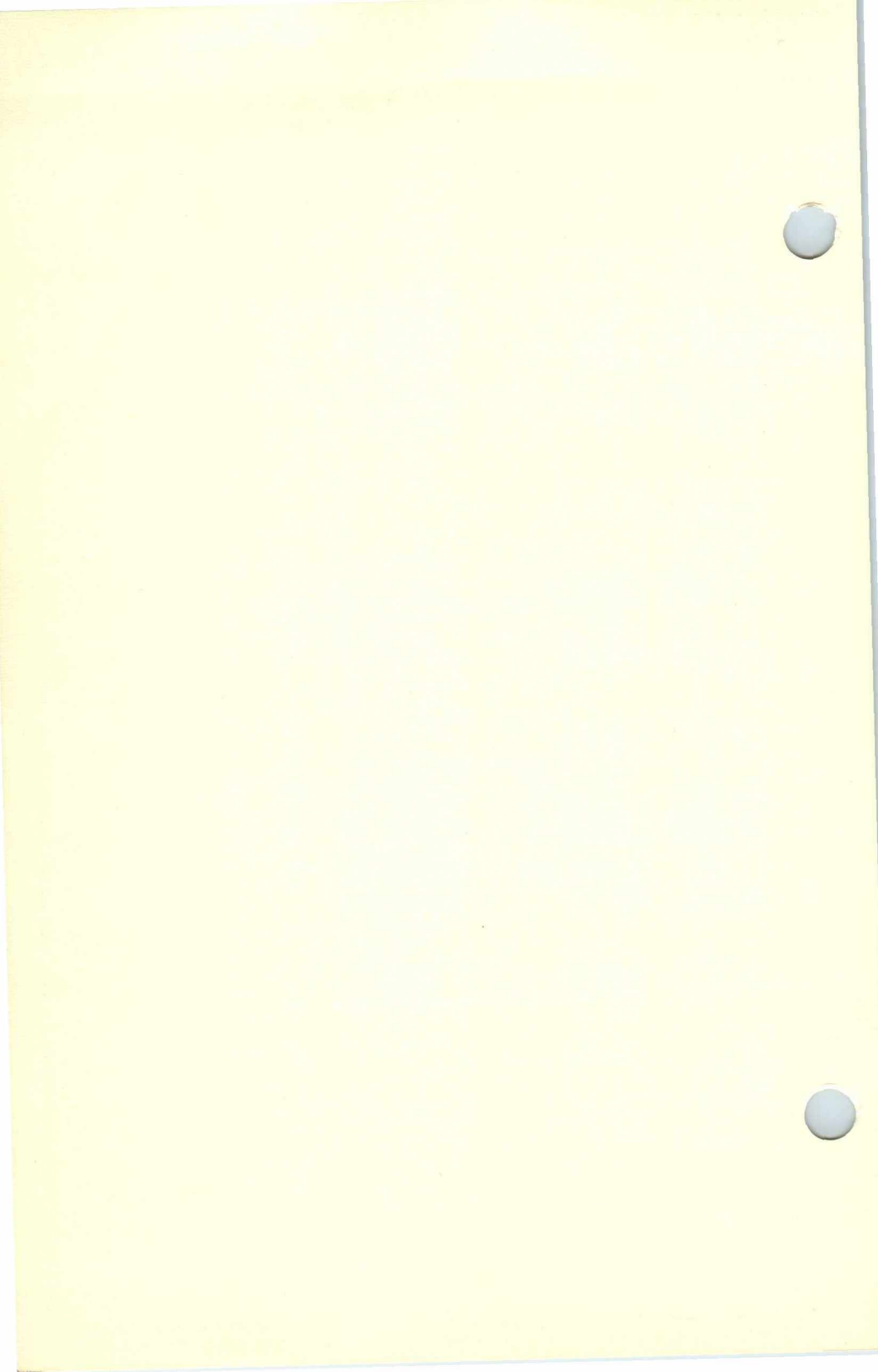
FULL-WAVE RECTIFIER WITH CAPACITOR-INPUT FILTER

FILAMENT VOLTAGE	5.0	5.0	5.0	VOLTS
FILAMENT CURRENT	2.0	2.0	2.0	AMP.
AC PLATE-SUPPLY VOLTAGE PER PLATE, RMS				
FULL LOAD	700	750	900	VOLTS
NO LOAD	750	850	1000	VOLTS
FILTER INPUT CAPACITOR	4	4	4	μ FD.
TOTAL EFFECTIVE PLATE-SUPPLY IMPEDANCE				
PER PLATE	125	500	575	OHMS
DC OUTPUT CURRENT	250	150	150	MA.
DC OUTPUT VOLTAGE AT FILTER INPUT				
FOR DC OUTPUT CURRENT OF 75 MA.	---	900	1060	VOLTS
FOR DC OUTPUT CURRENT OF 125 MA.	790	---	---	VOLTS
FOR DC OUTPUT CURRENT OF 150 MA.	---	810	950	VOLTS
FOR DC OUTPUT CURRENT OF 250 MA.	700	---	---	VOLTS

FULL-WAVE RECTIFIER WITH CHOKE-INPUT FILTER

FILAMENT VOLTAGE	5.0	5.0	VOLTS
FILAMENT CURRENT	2.0	2.0	AMP.
AC PLATE-SUPPLY VOLTAGE PER PLATE, RMS			
FULL LOAD	750	950	VOLTS
NO LOAD	850	1000	VOLTS
FILTER INPUT CHOKE	5	10	HENRYS
DC OUTPUT CURRENT	250	175	MA.
DC OUTPUT VOLTAGE AT FILTER INPUT			
FOR DC OUTPUT CURRENT OF 87.5 MA.	---	810	VOLTS
FOR DC OUTPUT CURRENT OF 125 MA.	590	---	VOLTS
FOR DC OUTPUT CURRENT OF 175 MA.	---	750	VOLTS
FOR DC OUTPUT CURRENT OF 250 MA.	550	---	VOLTS
TUBE VOLTAGE DROP			
I _b =250 MA. DC PER PLATE		67	VOLTS





TUNG-SOL

TRIPLE-DIODE TRIODE

MINIATURE TYPE

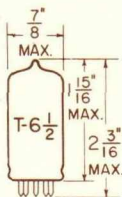
COATED UNIPOTENTIAL CATHODES

HEATER

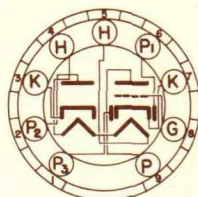
4.7 VOLTS 0.6 AMP.

AC OR DC

ANY MOUNTING POSITION



GLASS BULB



BOTTOM VIEW

MINIATURE GLASS BUTTON
9 PIN BASE

9E

THE 5T8 COMBINES THREE HIGH PERVEANCE DIODES AND A HIGH- μ TRIODE IN ONE ENVELOPE WITH THE 9 PIN MINIATURE CONSTRUCTION AND IS DESIGNED FOR USE IN 600 MA. SERIES HEATER OPERATED RECEIVERS. ONE OF THE THREE DIODE PLATES HAS AN INDEPENDENT CATHODE PROVIDING SATISFACTORY OPERATION IN BALANCED LOW IMPEDANCE DETECTOR CIRCUITS. THIS TUBE STRUCTURE PERMITS THE CONSTRUCTION OF AM/FM RECEIVERS WITH A MINIMUM OF SWITCHING. THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED. WITH THE EXCEPTION OF HEATER RATINGS, ITS CHARACTERISTICS ARE IDENTICAL TO THE 6T8.

DIRECT INTERELECTRODE CAPACITANCES

	WITHOUT SHIELD	WITH ^A SHIELD	
TRIODE GRID TO PLATE	1.7	1.7	uu f
TRIODE INPUT	1.6	1.7	uu f
TRIODE OUTPUT	1.2	2.4	uu f
GRID TO ANY DIODE PLATE (MAX.)	.034	.034	uu f
INPUT DIODE 1	3.8	3.8	uu f
INPUT DIODE 2	3.8	3.8 ^B	uu f
INPUT DIODE 3	3.4	3.6	uu f
DIODE 2 CATHODE TO ALL	7.5	8.5 ^C	uu f

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

HEATER VOLTAGE	4.7	VOLTS
MAXIMUM PLATE VOLTAGE	330 ←	VOLTS
MAXIMUM POSITIVE DC GRID VOLTAGE	0	VOLTS
MAXIMUM PLATE DISSIPATION	1.1 ←	WATTS
MAXIMUM DIODE CURRENT FOR CONTINUOUS OPERATION (EA. PLATE)	5.5 ←	MA.
MAXIMUM HEATER-CATHODE VOLTAGE		
HEATER NEGATIVE WITH RESPECT TO CATHODE:		
TOTAL DC AND PEAK	200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE:		
DC	100	VOLTS
TOTAL DC AND PEAK	200	VOLTS
HEATER WARM-UP TIME (APPROX.)*	11.0	SECONDS

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TUNG-SOL

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A₁ AMPLIFIER

HEATER VOLTAGE	4.7	4.7	VOLTS
HEATER CURRENT	0.6±6%	0.6±6%	AMP.
PLATE VOLTAGE	100	250	VOLTS
GRID VOLTAGE	-1	-3	VOLTS
AMPLIFICATION FACTOR	70	70	
PLATE RESISTANCE (APPROX.)	54 000	58 000	OHMS
TRANSCONDUCTANCE	1 300	1 200	μMHOS
PLATE CURRENT	0.8	1.0	MA.
AVERAGE DIODE CURRENT: (EACH SECTION)			
MEASURED WITH 5 VOLTS DC APPLIED	20		MA.

TRIODE UNIT AS RESISTANCE COUPLED AMPLIFIER

PLATE SUPPLY VOLTAGE	90	VOLTS
CONTROL GRID VOLTAGE	0	VOLTS
PLATE LOAD RESISTOR	220 000	OHMS
CONTROL GRID RESISTOR	10.0	MEGOHMS
INPUT CONDENSER	0.01	μf
OUTPUT CONDENSER	0.01	μf
GRID RESISTOR OF FOLLOWING STAGE	470 000	OHMS
SIGNAL SOURCE IMPEDANCE (MAX.)	1 000	OHMS
DISTORTION	5	PERCENT
OUTPUT VOLTAGE	8.5	VOLTS
VOLTAGE GAIN AT 400 CPS	35	

^A WITH EXTERNAL SHIELD #315 CONNECTED TO PIN #7.

^B WITH EXTERNAL SHIELD #315 CONNECTED TO PIN #3.

^C WITH EXTERNAL SHIELD #315 CONNECTED TO PINS #4 AND #5.

** HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER, IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

→ INDICATES A CHANGE.