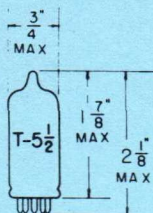


TUNG-SOL

THYRATRON



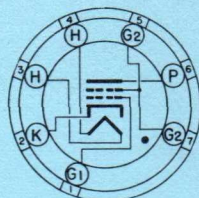
GLASS BULB

HEATER

6.3±10% VOLTS 0.600 AMP.

AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW

MINIATURE BUTTON
7 PIN BASE

7BN

THE 2D21W IS A RUGGEDIZED, XENON FILLED, FOUR ELECTRODE THYRATRON WITH NEGATIVE CONTROL CHARACTERISTICS. THIS TUBE IS ELECTRICALLY EQUIVALENT TO THE POPULAR TYPE 2D21, BUT HAS BEEN RUGGEDIZED THROUGH THE USE OF CERAMIC INSULATORS AND STRONGER ELEMENTS TO PERMIT THE TUBE TO STAND HIGH IMPACT SHOCKS AND VIBRATION. IT HAS FOUND WIDE USAGE AS A SWITCHING TUBE, AS A PULSE MODULATOR, AND IN GRID CONTROLLED RECTIFIER SERVICE. BECAUSE OF ITS SHIELD GRID CONSTRUCTION, THE INPUT OF THE 2D21W WILL WORK DIRECTLY FROM A HIGH IMPEDANCE SOURCE SUCH AS A PHOTOTUBE. THE EFFECTIVE ANODE TO CONTROL GRID CAPACITY MAY BE REDUCED BY CONNECTING PINS #5 & #7 TO #2 AND CONNECTING THE GRID RESISTOR DIRECTLY AT THE SOCKET TERMINAL. THE SMALL SIZE AND LIGHT WEIGHT OF THE 2D21W AND ITS RELATIVE FREEDOM FROM TEMPERATURE RESTRICTIONS MAKE THIS TUBE PARTICULARLY SUITED FOR USE IN COMPACT EQUIPMENT.

ELECTRICAL DATA

HEATER VOLTAGE ^A	6.3±10%	VOLTS
HEATER CURRENT ($E_f = 6.3$ VOLTS)	0.600	AMP.
MINIMUM CATHODE HEATING TIME	10.	SECONDS
ANODE TO CONTROL GRID CAPACITANCE	0.026	μFARADS
CONTROL GRID TO CATHODE (&SHIELD GRID) CAPACITANCE	2.4	μFARADS
ANODE TO CATHODE (&SHIELD GRID) CAPACITANCE	1.6	μFARADS
DE-IONIZATION TIME, APPROX. (SHIELD TIED TO CATHODE)		
WITH GRID VOLTS = -100, GRID RES. = 1000Ω		
ANODE VOLTS = 125, ANODE CUR. = 0.1 AMPS.	35	μSECONDS
WITH GRID VOLTS = -10, GRID RES. = 1000Ω		
ANODE VOLTS = 125, ANODE CUR. = 0.1 AMPS.	75	μSECONDS
IONIZATION TIME, APPROX.	0.5	μSECONDS
ANODE VOLTAGE DROP, APPROX.	8	VOLTS
MAXIMUM CRITICAL GRID CURRENT (AT $E_{bb} = 460V$, RMS)	0.5	μAMPS.

^A±10%, -5% IN PULSE MODULATOR SERVICE.

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

MECHANICAL DATA

MAXIMUM SHOCK RATING	720	G
MOUNTING POSITION	ANY	
MAXIMUM OVERALL LENGTH	2.13	INCHES
MAXIMUM SEATED LENGTH	1.88	INCHES
MAXIMUM DIAMETER	0.75	INCHES
BULB	T-5 1/2	
BASE	MINIATURE BUTTON 7 PIN	
WEIGHT (NET)	0.5	OUNCES

RATINGS

ABSOLUTE VALUES

	RELAY & GRID CONTROLLED RECTIFIER SERVICE	PULSE MODULATOR SERVICE	
MAXIMUM PEAK ANODE VOLTAGE			
INVERSE	1300	100	VOLTS
FORWARD	650	500	VOLTS
MAXIMUM CATHODE CURRENT			
PEAK	0.5	10.	AMPS.
AVERAGE	100.	10.	MA.
SURGE (MAX. DURATION 0.1 SECONDS)	10.	---	AMPS.
MAXIMUM AVERAGE TIME	30.	---	SECONDS
MAXIMUM NEGATIVE CONTROL GRID VOLTAGE			
BEFORE CONDUCTION	-100	-100	VOLTS
DURING CONDUCTION (AVERAGED OVER 30 SEC. MAX.)	-10	-10	VOLTS
MAXIMUM POSITIVE CONTROL GRID CURRENT			
AVERAGE	10	---	MA.
PEAK	---	20	MA.
MAXIMUM NEGATIVE SHIELD GRID VOLTAGE			
BEFORE CONDUCTION	-100	-50	VOLTS
DURING CONDUCTION (AVERAGED OVER 30 SEC. MAX.)	-10	-10	VOLTS
MAXIMUM POSITIVE SHIELD GRID CURRENT			
AVERAGE	10	---	MA.
PEAK	---	20	MA.
MAXIMUM FREQUENCY	---	500	PPS.
MAXIMUM PULSE TIME	---	5	μSECONDS
MAXIMUM RATE OF RISE (AMPS. PER μSECOND)	---	100	
MAXIMUM HEATER CATHODE VOLTAGE			
HEATER NEGATIVE	-100	0	VOLTS
HEATER POSITIVE	25	0	VOLTS
AMBIENT TEMPERATURE LIMITS	-75 TO +90	-75 TO +90	°C
MAXIMUM CONTROL GRID (G1) CIR. RESISTANCE	10	0.5	MEGOHMS
MAXIMUM SHIELD GRID (G2) CIRCUIT RESISTANCE	---	25 000	OHMS
MINIMUM SHIELD GRID (G2) CIRCUIT RESISTANCE	---	2 000	OHMS

