

TUNG-SOL

PRODUCT BULLETIN

INDUSTRIAL ELECTRON TUBE TYPE 7792

JULY 1964

HYDROGEN DIODE

DESCRIPTION — The 7792 is an indirectly heated, hydrogen filled, half-wave diode designed for use in high-voltage rectifier circuits. The 7792 is a rugged diode that can handle higher voltage than comparable xenon-filled tubes, and is more efficient than vacuum rectifiers. An internally-connected hydrogen generator prevents gas clean-up.

Contrasted with a solid state rectifier, the 7792 can withstand high current and inverse voltage surges. This diode also has the advantage of being temperature free and has a wide range of mounting positions as compared with mercury-vapor tubes. The 7792 is capable of delivering 2.0 amperes average at 25 kilovolts peak inverse voltage.

In many cases, the 7792 will function as a low impedance, direct plug-in replacement for the X80 vacuum rectifier tube.

ELECTRICAL DATA

	Min	Bogey	Max	
Heater Voltage	11.0	11.5	12.0	Volts
Heater Current — $E_f = 11.5$ Volts.....	6.9	8.5	10.5	Amperes
Cathode Heating Time.....	3	—	—	Minutes
Anode Voltage Drop.....	30	—	60	Volts
Initial Firing Voltage.....	—	—	100	Volts
Recurrent Firing Voltage.....	30	—	75	Volts

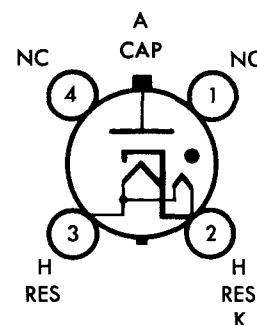
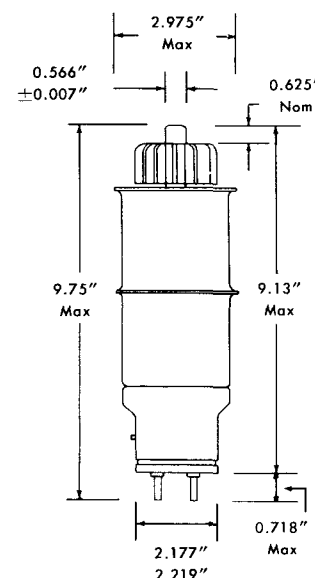
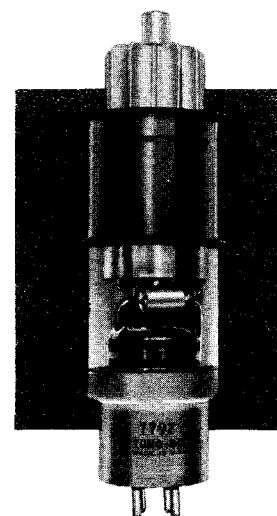
MECHANICAL DATA

Type of Cooling.....	See Rating Graph. Convection or Forced Air — 50 cfm directed at top of radiator
Mounting Position	Horizontal or Vertical (Base Down)
Average Net Weight.....	1 Pound 14 Ounces
Dimensions	See Outline Drawing
Base	Super Jumbo, 4-pin With Bayonet, JEDEC A4-106
Anode Connection	Cap, See Outline Drawing

RATINGS, ABSOLUTE VALUES

	Minimum	Maximum	
Peak Inverse Anode Voltage.....	—	25,000	Volts
Cathode Current			
Peak	—	8	Amperes
Average	—	2	Amperes
Surge — Maximum Duration 0.1 Second.....	—	60	Amperes
Averaging Time	—	15	Seconds
Ambient Temperature	—55	+75	Degrees Centigrade

CAUTION — The Cathode connection should be made to Pin 2 in order not to damage tube.



(SEE CAUTION NOTE)

BOTTOM VIEW

MAXIMUM RATING CHART

FIG.	CIRCUIT	TRANSFORMER	NO. OF TUBES	*	A-C SECONDARY VOLTAGE E _{RMS} Kilovolts	D-C OUTPUT — APPROX		RIPPLE	
						E _{DC} Kilovolts	I _{DC} AMPS	KILOVOLTS RMS	FREQ
1	Half-wave 1-phase	1-phase	1	A	10.5	4.75	1.5	5.25	f
				B	17.5	8.0	1.0	8.8	
				C	12.5	5.75	2.0	6.25	
2	Full-wave 1-phase	1-phase C-T	2	A	5.25	4.75	3.0	2.25	2f
				B	8.8	8.0	2.0	3.75	
				C	6.25	5.75	4.0	2.8	
3	Bridge circuit 1-phase	1-phase	4	A	10.5	9.5	3.0	4.5	2f
				B	17.5	15.8	2.0	7.5	
				C	12.5	11.5	4.0	5.6	
4	Half-wave 3-phase	Delta-Wye	3	A	6.15	7.2	4.5	1.3	3f
				B	10.0	12.0	3.0	2.2	
				C	7.35	8.6	6.0	1.55	
5	Full-wave 3-phase	Delta-Wye	6	A	6.15	14.3	4.5	0.6	6f
				B	10.0	23.9	3.0	1.0	
				C	7.35	17.2	6.0	0.72	
6	Full-wave 3-phase	Delta-Delta	6	A	10.5	14.3	4.5	0.6	6f
				B	17.5	23.9	3.0	1.0	
				C	12.5	17.2	6.0	0.72	
7	Half-wave 6-phase (3-phase supply)	Delta-Star	6	A	5.25	7.2	9.0	0.29	6f
				B	8.8	12.0	6.0	0.48	
				C	6.25	8.6	12.0	0.35	

*See RATING GRAPH

A: Convection cooled, at maximum tube ratings

B: Forced air cooled at maximum voltage ratings

C: Forced air cooled at maximum current ratings

For figure references see STANDARD RECTIFIER CIRCUITS AND RATINGS sheet.

The 7792 should be protected from transient voltages in excess of the maximum rating by spark gaps installed either directly across the tube or across each plate transformer secondary leg.

RATING GRAPH

