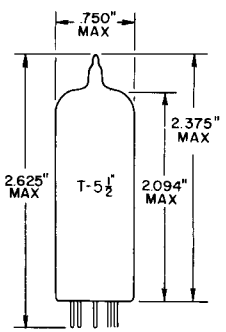


TUNG-SOL

MINIATURE TYPE

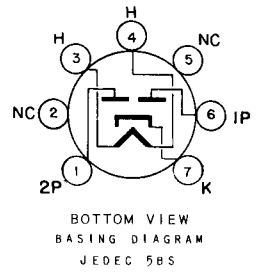


GLASS BULB
MINIATURE BUTTON
7 PIN BASE E7-1
OUTLINE DRAWING
JEDEC 5-3

COATED UNIPOTENTIAL CATHODE

FULL WAVE RECTIFIER

ANY MOUNTING POSITION



THE 12X4 IS A HEATER-CATHODE TYPE POWER RECTIFIER IN THE MINIATURE CONSTRUCTION. ITS LOW VOLTAGE DROP AND SMALL SIZE ADAPT IT TO USE WITH VIBRATOR-TYPE INVERTERS IN AUTOMOBILE RECEIVERS.

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	12.6 VOLTS	300	MA.
TUBE VOLTAGE DROP (MEASURED WITH TUBE CONDUCTING 70 MA EACH PLATE)		22	VOLTS
HEATER SUPPLY LIMITS:			
VOLTAGE OPERATION ^A		12.6±0.6	VOLTS
MAXIMUM HEATER CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE			
DC	450		VOLTS
TOTAL DC AND PEAK	450		VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC	100		VOLTS
TOTAL DC AND PEAK	200		VOLTS

→ MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

PEAK INVERSE PLATE VOLTAGE	1250	VOLTS
AC PLATE SUPPLY VOLTAGE EACH PLATE (RMS)	SEE CHART I	
DC OUTPUT CURRENT EACH PLATE	SEE CHART I	
STEADY STATE PEAK PLATE CURRENT EACH PLATE (SEE CHART II)	245	MA.
TRANSIENT PEAK PLATE CURRENT EACH PLATE (SEE CHART III)	1.1	AMP.
VIBRATOR OPERATION (MINIMUM DUTY CYCLE OF 75%)		
DC OUTPUT VOLTAGE (AT FILTER INPUT)	350	VOLTS
DC OUTPUT CURRENT EACH PLATE	45	MA.

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CONTINUED FROM PRECEDING PAGE

→ TYPICAL OPERATING CHARACTERISTICS
FULL-WAVE RECTIFIER

	SINE WAVE OPERATION INPUT TO FILTER		VIBRATOR OPERATION INPUT TO FILTER	
	CAPACITOR	CHOKE	CAPACITOR	
AC PLATE SUPPLY VOLTAGE EACH PLATE (RMS) ^B	325	400	---	VOLTS
INPUT CAPACITOR	10	---	10	μ f
INPUT CHOKE	---	10	---	HENRYS
EFFECTIVE PLATE SUPPLY IMPEDANCE EACH PLATE	525	---		OHMS
DC OUTPUT CURRENT	70	70	70	MA.
DC OUTPUT VOLTAGE AT FILTER INPUT (APPROX.)	310	340	240	VOLTS

A
WHEN USED IN AUTOMOTIVE SERVICE FROM A 12 VOLT BATTERY SOURCE, THE PERMISSIBLE RANGE IN HEATER VOLTAGE IS FROM 10.0 TO 15.9 VOLTS.

B
AC PLATE SUPPLY VOLTAGE IS MEASURED WITHOUT LOAD.

→ INDICATES A CHANGE.

SIMILAR TYPE REFERENCE: Except for heater ratings, the 12X4 is identical to the 6X4.

