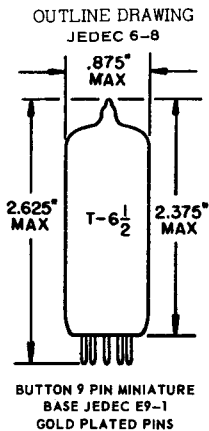
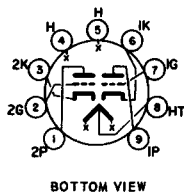


## TUNG-SOL

TWIN TRIODE  
MINIATURE TYPE

FOR  
PULSE APPLICATIONS  
IN MISSILES, AIRCRAFT  
AND MILITARY AND INDUSTRIAL  
INSTALLATIONS.

TUNGSTEN HEATER  
ANY MOUNTING POSITION

BASING DIAGRAM  
JEDEC 9H

THE 6900 IS A MEDIUM- $\mu$  TWIN TRIODE IN THE 9 PIN MINIATURE HARD GLASS CONSTRUCTION. IT IS DESIGNED SPECIFICALLY FOR PULSE APPLICATIONS IN MISSILES, AIRCRAFT AND OTHER MILITARY AND INDUSTRIAL INSTALLATIONS. REQUISITES IN SUCH APPLICATIONS INCLUDE FREEDOM FROM EARLY FAILURES, LONG AVERAGE SERVICE LIFE AND UNIFORM OPERATING CHARACTERISTICS.

DIRECT INTERELECTRODE CAPACITANCES  
WITHOUT EXTERNAL SHIELD

GRID TO PLATE	4.0	pf
INPUT	MAX. 6.5	pf
OUTPUT-SECTION 1	0.8	pf
OUTPUT-SECTION 2	0.61	pf
HEATER TO CATHODE	3.0	pf

HEATER CHARACTERISTICS AND RATINGS  
DESIGN CENTER VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	6.3 VOLTS	1.0	AMPS
	12.6 VOLTS	0.5	AMPS
LIMITS OF APPLIED VOLTAGE	6.3 $\pm$ 0.3		VOLTS
	12.6 $\pm$ 0.6		VOLTS
HEATER - CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE		500	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE		500	VOLTS

CONTINUED ON FOLLOWING PAGE

**TUNG-SOL**

CONTINUED FROM PRECEDING PAGE

**MAXIMUM RATINGS**

DESIGN CENTER VALUES - SEE EIA STANDARD RS-239

PLATE VOLTAGE	600	VOLTS
PEAK GRID VOLTAGE		
POSITIVE VALUE	100	VOLTS
NEGATIVE VALUE	200	VOLTS
PEAK CATHODE CURRENT <sup>⊗</sup> SEE CHART	4.5	AMPS
PLATE DISSIPATION PER PLATE	4.25	WATTS
GRID CIRCUIT RESISTANCE	1.0	MEGOHM
AVERAGE WARM-UP TIME	45	SEC.

**AVERAGE CHARACTERISTICS - EACH SECTION**

PLATE VOLTAGE	120	VOLTS
GRID VOLTAGE	-2.0	VOLTS
PLATE CURRENT	36	mA
TRANSCONDUCTANCE	11,500	μMHOS
AMPLIFICATION FACTOR	18.5	

**TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS - PULSE**

BOTH SECTIONS IN PARALLEL

PLATE VOLTAGE	500	VOLTS
GRID PULSE (μgk)	+50	VOLTS
GRID VOLTAGE	-100	VOLTS
PLATE BIAS VOLTAGE	4.25	AMPS.
GRID CURRENT	0.50	AMP
PULSE TIME	10	μSEC
PULSE REPETITION RATE	250	PPS

**SPECIAL TESTS AND RATINGS**

ALTITUDE <sup>⊗</sup> SEE APPLICATION NOTE	80,000	FT.
BULB TEMPERATURE AT HOTTEST POINT ON BULB	300	°C
IMPACT SHOCK	500	G
VIBRATIONAL ACCELERATION	50	G
LIFE		
HEATER CYCLING LIFE		
FATIGUE		
SHOCK		
GLASS STRAIN		

<sup>⊗</sup> TO OBTAIN GREATEST LIFE EXPECTANCY FROM TUBE, AVOID DESIGNS WHERE THE TUBE IS SUBJECT TO ALL MAXIMUM RATINGS SIMULTANEOUSLY.

## TUNG-SOL

## APPLICATION NOTES

SPECIAL ATTENTION SHOULD BE GIVEN TO THE TEMPERATURES AT WHICH THE TUBES ARE TO BE OPERATED. RELIABILITY WILL BE SERIOUSLY IMPAIRED IF MAXIMUM BULB TEMPERATURE IS EXCEEDED. THE LIFE EXPECTANCY WILL BE REDUCED APPRECIABLY IF ABSOLUTE MAXIMUM RATINGS ARE EXCEEDED. BOTH RELIABILITY AND PERFORMANCE WILL BE JEOPARDIZED IF FILAMENT VOLTAGE RATINGS ARE EXCEEDED. LIFE AND RELIABILITY OF PERFORMANCE ARE DIRECTLY RELATED TO THE DEGREE THAT REGULATION OF THE HEATER VOLTAGE IS MAINTAINED AT ITS CENTER RATED VALUE.

THIS TUBE IS CONSTRUCTED USING NONEX GLASS AND THUS CAN WITHSTAND HIGHER AMBIENT TEMPERATURES IN OPERATION. HOWEVER, THE BULB TEMPERATURE SHOULD NEVER EXCEED 300°C AT ITS HOTTEST POINT AND COOLING SHOULD BE EMPLOYED IF NECESSITATED BY THE ADDITIVE EFFECTS OF OPERATION AT HIGH ALTITUDES AND HIGH DISSIPATION SIMULTANEOUSLY OR BY OTHER SOURCES OF HEAT IN THE EQUIPMENT.

THE PLATE VOLTAGE RATING AND HIGH-PERVEANCE OF THE 6900 MAKE IT READILY ADAPTABLE TO VARIED PULSE APPLICATIONS. IN ORDER TO INSURE MAXIMUM RELIABILITY IN PULSE SERVICE THE PEAK CATHODE CURRENT SHOULD NOT EXCEED THE VALUE SHOWN IN PULSE RATING CHART FOR THE REQUIRED DUTY FACTOR.

