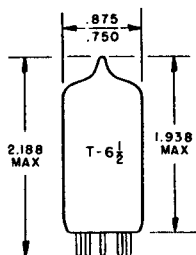


TUNG-SOL

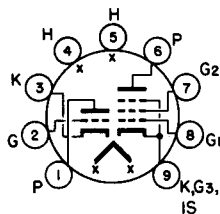
TRIODE-PENTODE

MINIATURE TYPE

MEDIUM MU TRIODE AND
SHARP CUTOFF PENTODE

COATED UNIPOTENTIAL CATHODES

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM

JEDEC 9DA

GLASS BULB
MINIATURE BUTTON
9 PIN BASE E9-1
OUTLINE DRAWING
JEDEC 6-2

THE 8489 CONTAINS A MEDIUM MU TRIODE AND A SHARP CUTOFF PENTODE IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS INTENDED FOR USE IN CIRCUITS WITH HIGH VALUES OF CONTROL GRID RESISTANCE. LEAKAGE IS MINIMIZED BY USE OF SPECIAL MATERIALS AND PROCESSING; MAINTENANCE OF THIS CHARACTERISTICS IS ASSURED BY SPECIAL LIFE TESTS.

DIRECT INTERELECTRODE CAPACITANCES

PENTODE

GRID 1 TO PLATE: G1 TO P (MAX.)	0.04	pf
INPUT: G1 TO (H + KP + G2 + G3 + I.S.)	7.0	pf
OUTPUT: P TO (H + KP + G2 + G3 + I.S.)	2.4	pf

TRIODE

GRID TO PLATE: G TO P	1.5	pf
INPUT: G TO (H + KT + KP + I.S.)	2.0	pf
OUTPUT: P TO (H + KT + KP + I.S.)	1.5	pf

COUPLING

TRIODE GRID TO PENTODE PLATE	MAX.	0.02	pf
PENTODE GRID TO TRIODE PLATE	MAX.	0.02	pf
PENTODE PLATE TO TRIODE PLATE	MAX.	0.15	pf

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE VALUES - VOLTAGE	6.3	VOLTS
- CURRENT	450	MA.
LIMITS OF APPLIED HEATER VOLTAGE	6.3±0.6	VOLTS
HEATER CATHODE VOLTAGE:		
HEATER NEGATIVE WITH RESPECT TO CATHODE		
TOTAL DC AND PEAK (MAX.)	200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE		
DC (MAX.)	100	VOLTS
TOTAL DC AND PEAK (MAX.)	200	VOLTS

MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

	TRIODE	PENTODE	
PLATE VOLTAGE	330	330	VOLTS
GRID 2 SUPPLY VOLTAGE	-----	330	VOLTS
GRID 2 VOLTAGE		See Rating Chart J5-C4-2	
POSITIVE GRID 1 VOLTAGE	0	0	VOLTS
PLATE DISSIPATION	2.8	2.3	WATTS
GRID 2 DISSIPATION (UP TO 165 VOLTS)		0.55	WATTS
GRID 1 CIRCUIT RESISTANCE	1.0	1.0	MEGOHMS
AT 10% OR LESS OF MAXIMUM			
PLATE AND SCREEN DISSIPATION	5	10	MEGOHMS

AVERAGE CHARACTERISTICS

	TRIODE	PENTODE	
PLATE VOLTAGE	150	125	VOLTS
GRID 2 VOLTAGE	-----	125	VOLTS
GRID 1 VOLTAGE	-3.0	-1.0	VOLTS
PLATE CURRENT	15	12	MA.
GRID 2 CURRENT	-----	3.8	MA.
TRANSCONDUCTANCE	4,500	7,000	μMHOS
AMPLIFICATION FACTOR	21	-----	
PLATE RESISTANCE (APPROX.)	4,700	170,000	OHMS
GRID VOLTAGE (APPROX.) FOR $I_b = 50 \mu A$	-15	-----	VOLTS
GRID 1 VOLTAGE (APPROX.) FOR $I_b = 100 \mu A$	-----	-7	VOLTS