

TUNG-SOL

DOUBLE TRIODE

MINIATURE TYPE

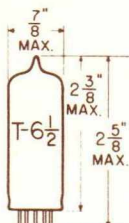
COATED UNIPOTENTIAL CATHODE

HEATER

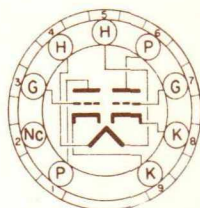
8.4 VOLTS 0.45 AMP.

AC OR DC

ANY MOUNTING POSITION



GLASS BULB


 BOTTOM VIEW
 SMALL BUTTON
 9 PIN BASE

9EF

THE 8CS7 IS A DOUBLE TRIODE IN THE 9 PIN MINIATURE CONSTRUCTION. SECTION #1 IS INTENDED FOR OPERATION AS A VERTICAL DEFLECTION OSCILLATOR AND SECTION #2 AS A VERTICAL DEFLECTION AMPLIFIER. THERMAL CHARACTERISTICS ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED.

DIRECT INTERELECTRODE CAPACITANCES

WITH NO EXTERNAL SHIELD

	TRIODE #1 ^A	TRIODE #2	
GRID TO PLATE (G TO P)	2.6	2.6	μf
INPUT: G TO (K+H)	1.8	3.0	μf
OUTPUT: P TO (K+H)	0.5	0.5	μf

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

VERTICAL DEFLECTION OSCILLATOR AND AMPLIFIER^B

	TRIODE #1 ^A OSCILLATOR	TRIODE #2 AMPLIFIER	
HEATER VOLTAGE		8.4	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE			
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK		200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC		100	VOLTS
TOTAL DC AND PEAK		200	VOLTS
MAXIMUM DC PLATE VOLTAGE	500	500	VOLTS
MAXIMUM PEAK POSITIVE PULSE PLATE VOLTAGE (ABSOLUTE MAX.)		2 200	VOLTS
MAXIMUM PEAK NEGATIVE PULSE GRID VOLTAGE	400	250	VOLTS
MAXIMUM PLATE DISSIPATION ^C	1.25	6.5	WATTS
MAXIMUM AVERAGE CATHODE CURRENT	20	30	MA.
MAXIMUM PEAK CATHODE CURRENT	70	105	MA.
MAXIMUM GRID CIRCUIT RESISTANCE	2.2	2.2	MEG OHMS
HEATER WARM-UP TIME ^D		11	SECONDS

^A TRIODE #1 CONNECTS TO PINS #6, #7 AND #8. TRIODE #2 CONNECTS TO PINS #1, #3 AND #9.

^B FOR OPERATION IN A 525 LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCASTING STATIONS: FEDERAL COMMUNICATIONS COMMISSION". THE DUTY CYCLE OF THE VOLTAGE PULSE MUST NOT EXCEED 15% OF ONE SCANNING CYCLE.

^C IN STAGES OPERATING WITH GRID LEAK BIAS, AN ADEQUATE CATHODE BIAS RESISTOR OR OTHER SUITABLE MEANS IS REQUIRED TO PROTECT THE TUBE IN ABSENCE OF EXCITATION.

^D HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

CONTINUED ON FOLLOWING PAGE

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CONTINUED FROM PRECEDING PAGE

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

	TRIODE #1 ^A	TRIODE #2	
HEATER VOLTAGE	8.4	8.4	VOLTS
HEATER CURRENT	0.45	0.45	AMP.
PLATE VOLTAGE	250	250	VOLTS
GRID VOLTAGE	-8.5	-10.5	VOLTS
PLATE CURRENT	10.5	19.0	MA.
TRANSCONDUCTANCE	2 200	4 500	μMHOS
AMPLIFICATION FACTOR	17.0	15.5	
PLATE RESISTANCE	7 700	3 450	OHMS
PLATE CURRENT AT $E_c = -16$ VOLTS		3.0	MA.
GRID VOLTAGE FOR $I_b = 10\mu A$	-24		VOLTS
GRID VOLTAGE FOR $I_b = 50\mu A$		-22	VOLTS

^A TRIODE #1 CONNECTS TO PINS #6, #7 AND #8. TRIODE #2 CONNECTS TO PINS #1, #3 AND #9.

SIMILAR TYPE REFERENCE: Except for heater ratings the 8CS7 is identical to the 6CS7.