Westinghouse

6HM5
4HM5
3HM5
2HM5

August 20, 1963

SHARP-CUTOFF TRIODE 2HM5, 3HM5, 4HM5 AND 6HM5

The 2HM5, 3HM5, 4HM5 and 6HM5 are sharp-cutoff, seven-pin miniature triode types designed particularly for service in V.H.F. television tuners as grounded cathode r-f amplifiers. These types are electrically and mechanically similar to the 2HA5, 3HA5, 4HA5 and 6HA5 except for bulb length.

The 2HM5, 3HM5 and 4HM5 have been designed for use in receivers which employ series connected heaters, especially in television receivers where the picture-tube heater is in series with other heaters. When each is employed in this type of circuit with other tubes similarly designed having the same heater current rating, heater voltage surges across individual tubes are minimized inasmuch as heater warm-up characteristic is controlled.

ELECTRICAL:

Heater Characteristics:	2HM5	3HM5	4HM5	6HM5	
Voltage (ac or dc)	2.4	2.9	4.0	6.3	Volts
Current	0.60	0.45	0.30	0.185	Ampere
Warm-up Time (Note 1)	11	11	11	–	Seconds
Direct Interelectrode Capacitances: (Shielded) (Note 2)					
Grid to Plate			0.34 max.		μμf
Input			4.5		μμf
Output			3.0		μμf
Heater to Cathode			2.5		μμf

MECHANICAL:

Cathode	Coated Unipotential
Bulb	T-5-½
Base	Miniature 7-Pin (JEDEC E7-1)
Outline	5-2
Basing	7GM
Mounting Position	Any

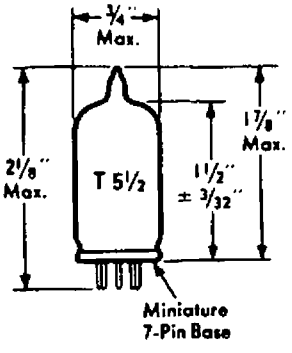
RATINGS:

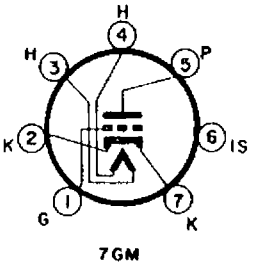
Design Maximum Values

Plate Voltage				200 max.	Volts
Plate Dissipation				2.2 max.	Watts
Grid Voltage:					
Negative Value				50 max.	Volts
Cathode Current				20 max.	Ma.
Grid Circuit Resistance (Self Bias)				1.0 max.	Megohm
Heater Ratings:					
Allowable Heater Voltage	2HM5	3HM5	4HM5	6HM5	
Maximum	–	–	–	6.9 max.	Volts
Minimum	–	–	–	5.7 min.	Volts
Allowable Heater Current:					
Maximum	640	480	320	– max.	Ma.
Minimum	560	420	280	– min.	Ma.
Heater-Cathode Voltage:					
Heater Negative with Respect to Cathode DC	100	100	100	max.	Volts
Heater Positive with Respect to Cathode DC	100	100	100	max.	Volts

CHARACTERISTICS & TYPICAL OPERATION:

Plate Voltage	120	135	Volts
Grid Voltage	0	–1	Volts
Grid Resistance	0.1	0	Megohm
Transconductance	18,000	14,500	μmhos
Grid Cutoff Bias	See Note 6	See Note 3	
Plate Current	15.0	12.5	Ma.
Amplification Factor	82	78	–
Hot Input Resistance (Note 4)	–	1000	Ohms
Hot Input Capacitance (Note 4)	–	8.5	μμf
Noise Figure (Note 5)	4.0	4.2	db





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NOTES

1. Heater Warm-up Time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three times rated heater voltage divided by rated heater current.
2. With JEDEC shield No. 316 connected to ~~Pin 1~~ cathode.
3. Grid Volts for gm = 150 μmhos: –5.7
   Grid Volts for gm = 1500 μmhos: –2.7
4. Measured at 200 Mc. with plate at signal ground. Ect = –1.5 Volt.
5. In a 200 Mc. noise-matched, optimized, neutralized, grounded-cathode triode amplifier stage.
6. Grid volts for gm = 150 μmhos: –5.1

WESTINGHOUSE ELECTRIC CORPORATION, ELECTRONIC TUBE DIVISION, ELMIRA, NEW YORK

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