

TELEVISION DAMPING DIODE TYPES AND 17CQ4

The 6CQ4 and 17CQ4 are octal based indirectly-heated half-wave rectifiers designed for television damping diode service in horizontal deflection circuits. The design incorporates a unique glass button suspension and insulation feature which virtually eliminates plate-cathode mica arcing and permits a peak inverse plate voltage rating which is conservative for 110° autotransformer deflection systems. The heater-cathode design and processing control has been improved to permit a pulse voltage breakdown rating equal to the greatly improved inverse rating. Tube voltage drop and DC plate current ratings have been established which permits single tube operation in low B+ as well as wide deflection angle TV systems.

The 17CQ4 has 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 it is employed in this type of circuit with other tubes having a heater current rating of 600 ma., heater voltage surges across individual tubes are minimized inasmuch as the heater warm-up characteristic is controlled.

ELECTRICAL

Cathode.....	Coated Unipotential		
Heater:	6CQ4	17CQ4	
Voltage (ac or dc)	6.3±0.6	17.0	Volts
Current	1.6	0.6	Ampere
Warm-Up-Time (Note 1)	—	11	Seconds
Direct Interelectrode Capacitances:			
Heater to Cathode	4.0	μμf	
Plate to Cathode and Heater	8.5	μμf	
Cathode to Plate and Heater	11.5	μμf	

MECHANICAL

Bulb	T-9
Base (Note 2) ..	Intermediate-Shell Octal 5-Pin (JEDEC B5-147)
	Short Intermediate-Shell Octal 5-Pin (JEDEC B5-85)
Basing	4CG
Mounting Position	Any

DAMPER SERVICE (Note 3)

MAXIMUM RATINGS

Design Maximum Values

Peak Inverse Voltage	5500	max.	Volts
Peak Plate Current	1200	max.	Ma.
DC Plate Current	190	max.	Ma.

Heater-Cathode Voltage:

Heater Negative with Respect to

Cathode	900	max.	Volts
Total DC and Peak	5500	max.	Volts

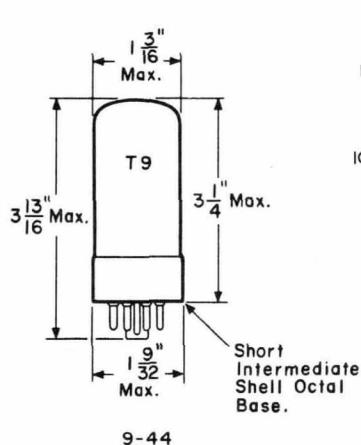
Heater Positive with Respect to

Cathode	100	max.	Volts
Total DC and Peak	300	max.	Volts

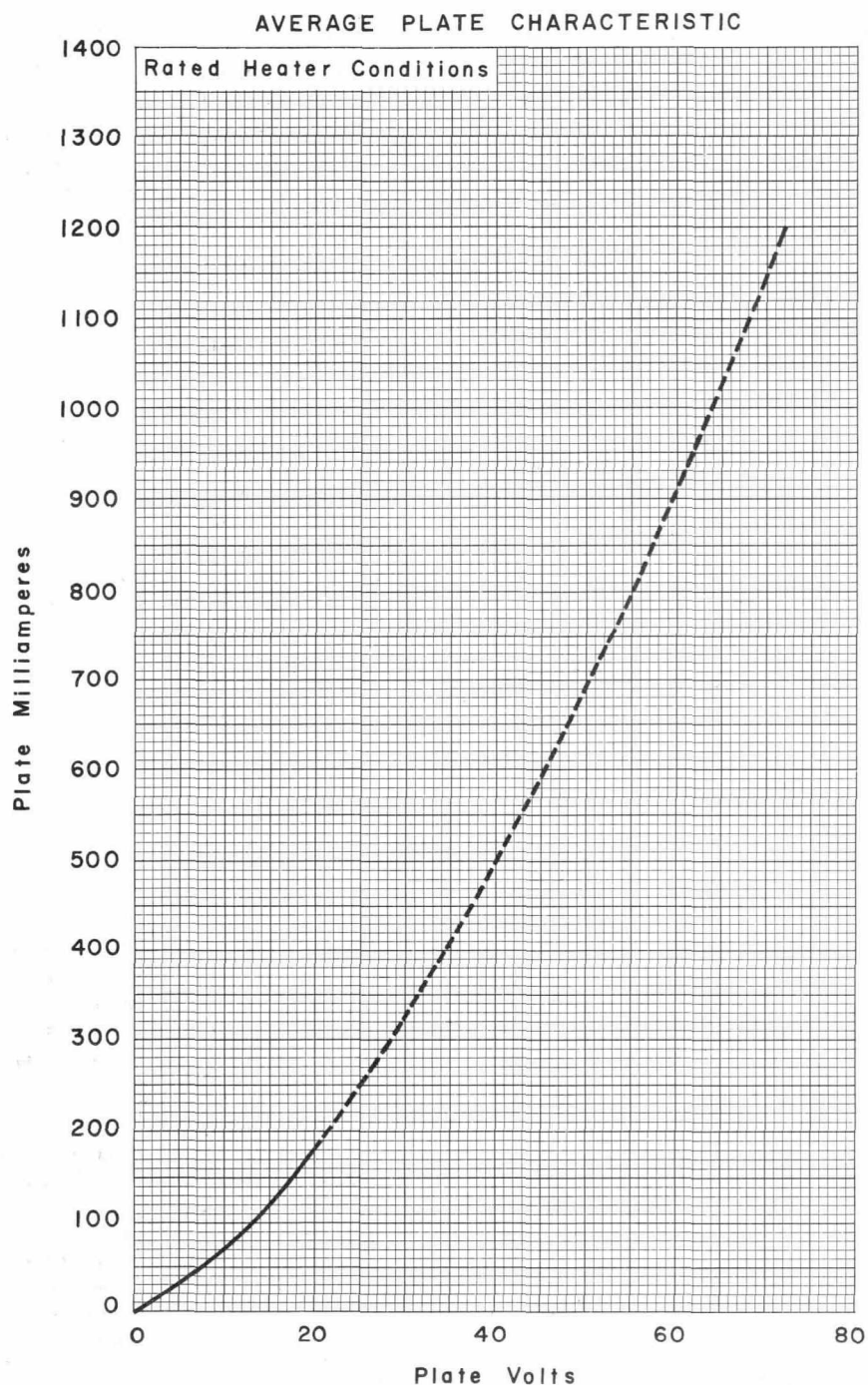
Voltage Drop at $I_b = 250$ Ma.	25	—	Volts
Plate Dissipation	6.5	max.	Watts

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. The JEDEC B5-85 and B5-147 bases specified for use with the above tube type do not have pins in base positions 1, 4, and 6. However positions 1 and 6 have internal connections terminating in stem leads. Base terminal position 2 has a base pin which may be connected to a stem lead. Because of the close proximity of stem leads to the socket pin clips when the tube is seated in the socket, circuit tie points should not be made to socket terminals 1, 2, 4 and 6 unless adequate precautions are taken against voltage breakdown in both the tube base and the socket. To reduce the possibility of arcover, it is recommended socket clips for positions 1, 2, 4 and 6 be removed from the damper tube socket.
3. 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 of the horizontal voltage pulse not to exceed 15% of one scanning cycle.



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