DUAL-CONTROL HEPTODE TYPES 3CS6, 4CS6 AND 6CS6

The 3CS6, 4CS6 and 6CS6 are 7-pin miniature dual-control heptode types designed for service as combined sync separator and sync clipper tubes. In a well-designed circuit they, develop a constant sync output as the sharp cutoff characteristics of grid 3 are particularly suitable to this type of operation.

The 3CS6 and 4CS6 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 characteristics is controlled.

ELECTRICAL:

Cathode	Coated Unipotential			
Heater:	3CS6	4CS6	6CS6	
Voltage	3.15	--	6.3	Volts
Current	0.60	0.45	0.30	Ampere
Warm-up Time♦	11	11	--	Seconds
Direct Interelectrode Capacitances (Unshielded):				
Grid 1 to Plate	0.07	max.		μμf
Grid 3 to Plate	0.36	max.		μμf
Grid 1 Input	5.5			μμf
Grid 3 Input	7.0			μμf
Output	7.5			μμf
Coupling (Grid 1 to Grid 3)	0.22	max.		μμf

MECHANICAL:

Bulb	T-5½
Base	Miniature 7-Pin (JEDEC E7-1)
Outline	5-2
Basing	7CH
Mounting Position	Any

MAXIMUM RATINGS

Design Center Values

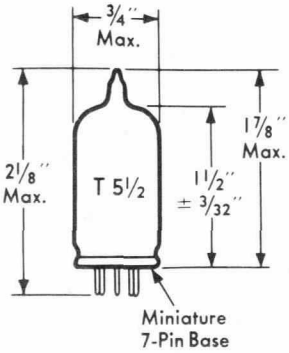
Plate Voltage	300	max.	Volts
Plate Dissipation	1.0	max.	Watt
Grid 2 and Grid 4 Voltage	100	max.	Volts
Grid 2 and Grid 4 Supply Voltage	300	max.	Volts
Grid 2 and Grid 4 Dissipation	1.0	max.	Watt
Cathode Current	14	max.	Ma.
Grid 1 Circuit Resistance	0.47	max.	Megohm
Grid 3 Circuit Resistance	2.2	max.	Megohm
Peak Heater-Cathode Voltage:			
Heater Negative with Respect to Cathode			
Total DC + Peak	200	max.	Volts
Heater Positive with Respect to Cathode			
DC Component	100	max.	Volts
DC + Peak	200	max.	Volts

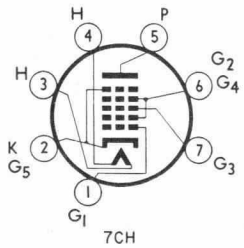
CHARACTERISTICS AND TYPICAL OPERATION

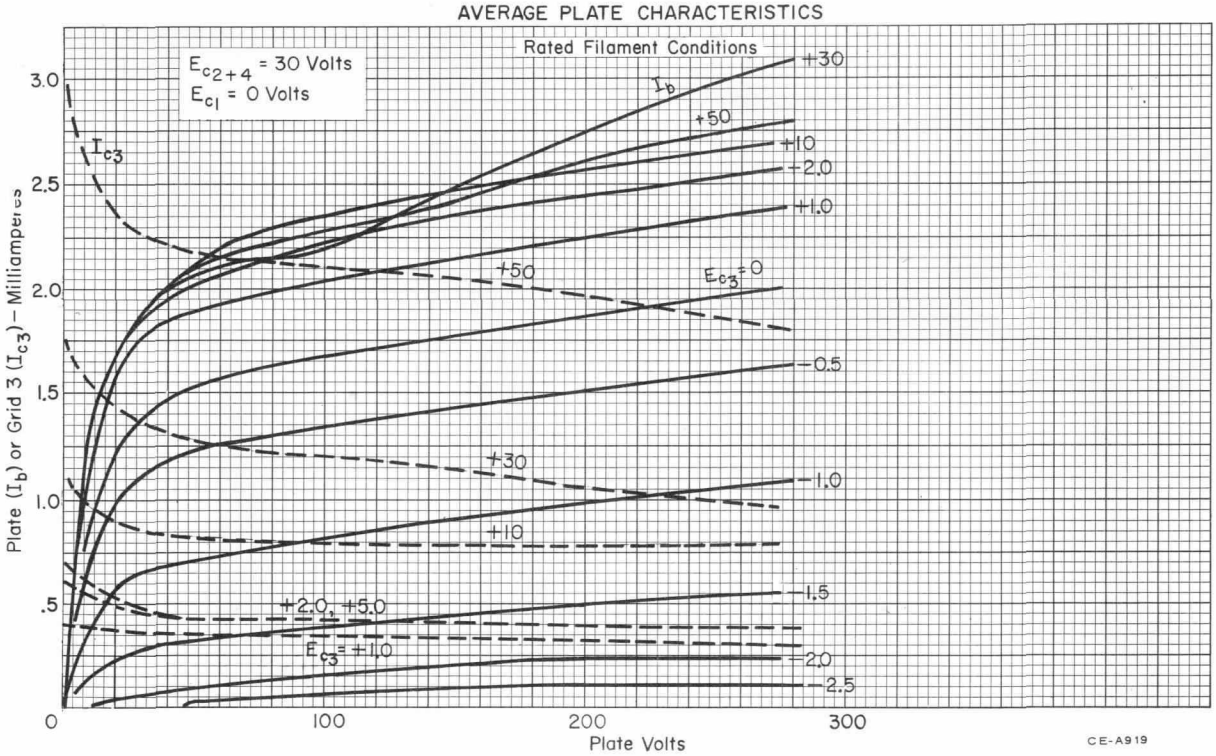
Plate Voltage	10	100	100	Volts
Grid 2 Voltage	30	30	30	Volts
Grid 1 Voltage	0	0	-1.0	Volts
Grid 3 Voltage	0	-1.0	0	Volts
Plate Current	2.0	0.8	1.0	Ma.
Grid 2 Current	4.5	5.5	1.3	Ma.
Transconductance				
Grid 1	--	--	1100	μmhos
Grid 3	--	1500	--	μmhos
Plate Resistance (Approx.)	--	0.7	1.0	Megohm
Grid 1 Cutoff Voltage⊕	--	--	-2.5	Volts
Grid 3 Cutoff Voltage⊕	--	-2.2	--	Volts

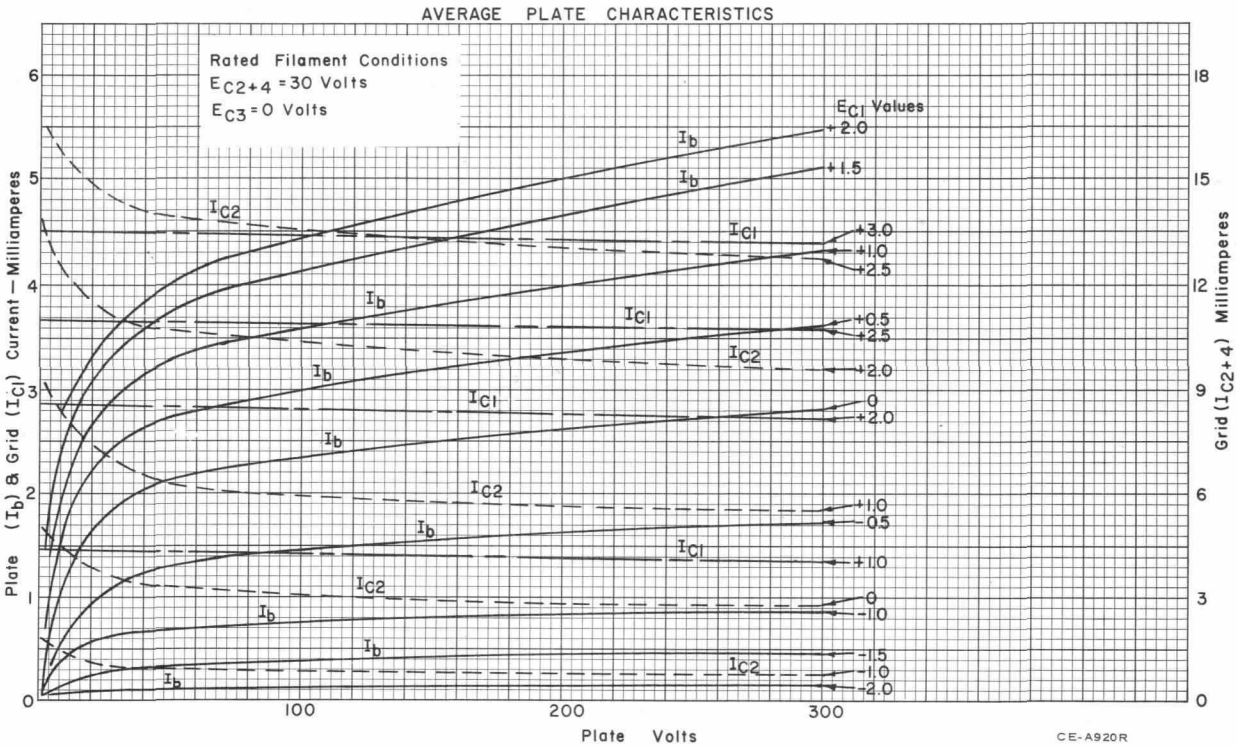
⊕ For plate current of 50 microamperes.

♦ 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 4 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.

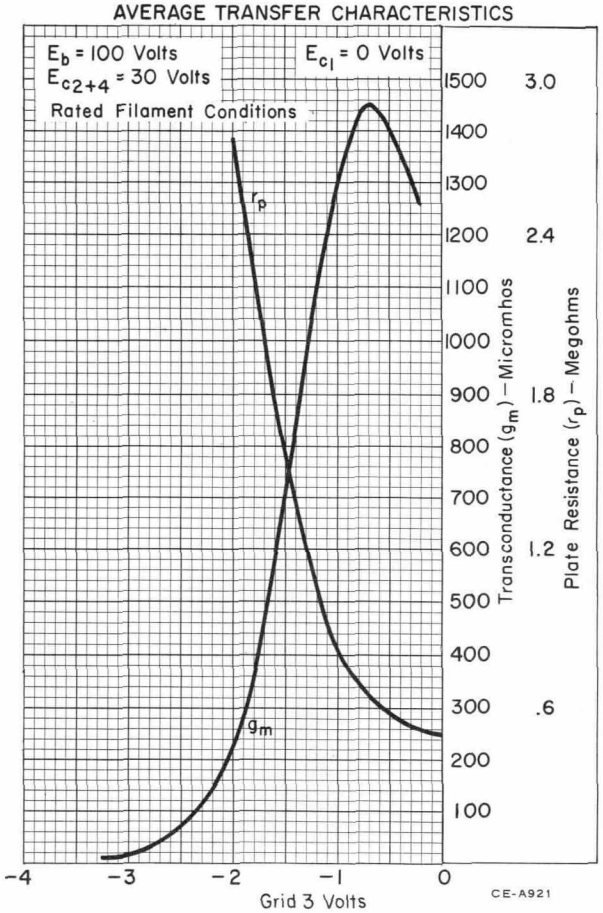




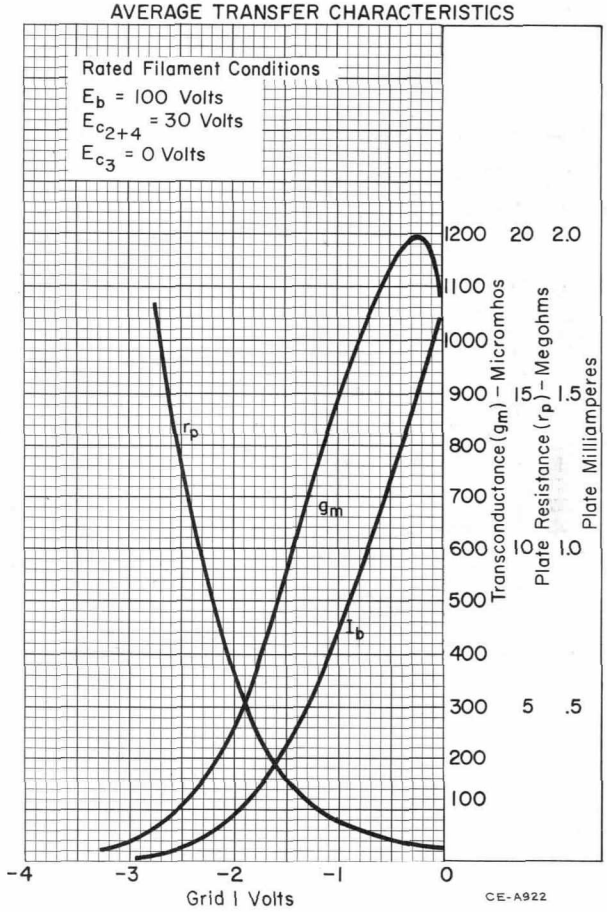
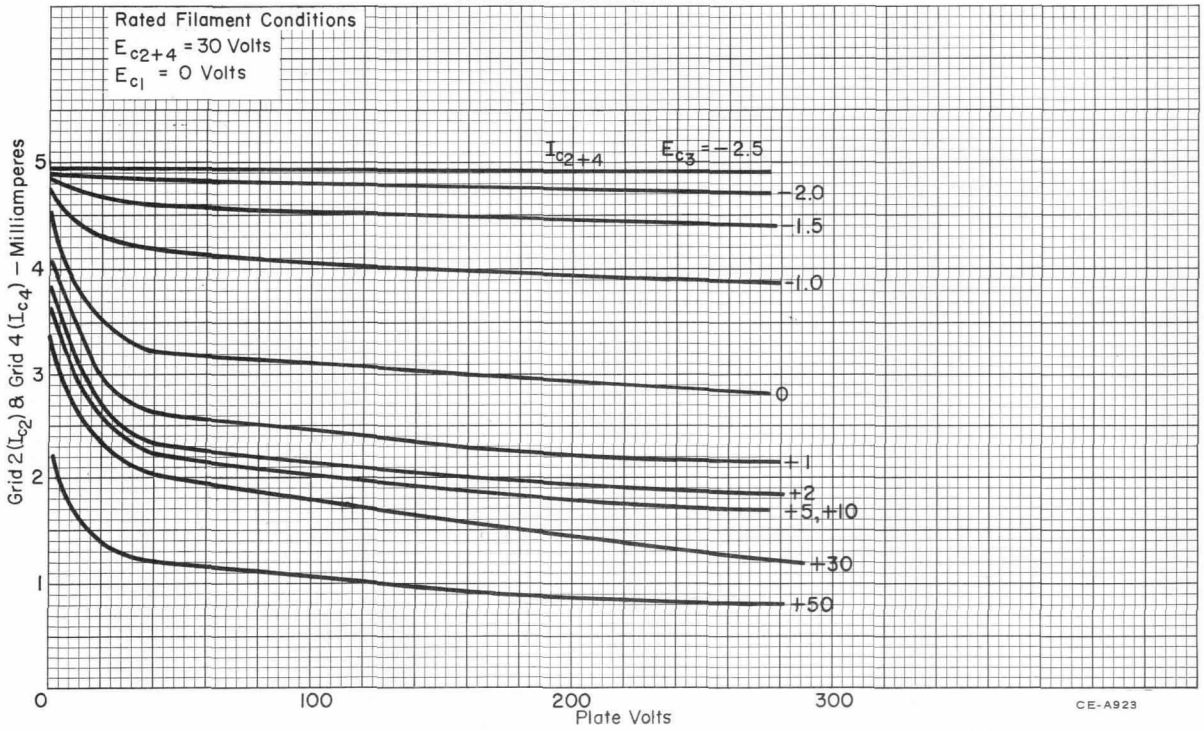

AVERAGE PLATE CHARACTERISTICS
Rated Filament Conditions
E_{c2+4} = 30 Volts
E_{c1} = 0 Volts
Plate (I_b) or Grid 3 (I_{c3}) – Milliamperes
Plate Volts
CE-A919


AVERAGE PLATE CHARACTERISTICS
Rated Filament Conditions
E_{C2+4} = 30 Volts
E_{C3} = 0 Volts
E_{C1} Values
Plate (I_b) & Grid (I_{C1}) Current – Milliamperes
Grid (I_{C2+4}) Milliamperes
Plate Volts
CE-A920R

AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS