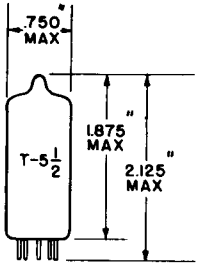
TUNG-SOL

HEPTODE

MINIATURE TYPE



GLASS BULB
SMALL-BUTTON MINIATURE
7 PIN BASE E7-1
OUTLINE DRAWING
JEDEC 5-2

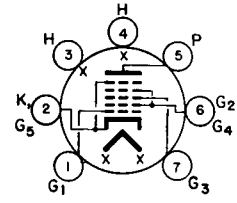
COATED UNIPOTENTIAL CATHODE

FOR USE

AS A GATED AMPLIFIER IN

TELEVISION RECEIVERS

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM
JEDEC 7CH

THE 6BY6 IS A PENTAGRID AMPLIFIER USING THE 7 PIN MINIATURE CONSTRUCTION. IT IS DESIGNED ESPECIALLY FOR USE AS A GATED AMPLIFIER IN TV RECEIVERS. IN SUCH SERVICE, IT MAY BE USED AS A COMBINED SYNC SEPARATOR AND SYNC CLIPPER.

DIRECT INTERELECTRODE CAPACITANCES

WITH NO EXTERNAL SHIELD

GRID #1 TO PLATE (MAX.)	0.08	pf
GRID #3 TO PLATE (MAX.)	0.35	pf
GRID #1 TO GRID #3 (MAX.)	0.22	pf
GRID #1 TO ALL OTHER ELECTRODES AND HEATER	5.4	pf
GRID #3 TO ALL OTHER ELECTRODES AND HEATER	6.9	pf
PLATE TO ALL OTHER ELECTRODES AND HEATER	7.6	pf

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	6.3 VOLTS	300	MA.
HEATER SUPPLY LIMITS:			
VOLTAGE OPERATION		6.3±0.6	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE		200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE		200[B]	VOLTS

MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

GATED AMPLIFIER SERVICE

PLATE VOLTAGE	→ 330	VOLTS
GRID #2 & #4 VOLTAGE	SEE RATING CHART	
GRID #2 & #4 SUPPLY VOLTAGE	→ 330	VOLTS
GRID #3 VOLTAGE:		
NEGATIVE BIAS VALUE	→ 55	VOLTS
POSITIVE BIAS VALUE	0	VOLTS
POSITIVE PEAK VALUE	→ 27	VOLTS

CONTINUED ON FOLLOWING PAGE

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CONTINUED FROM PRECEDING PAGE

MAXIMUM RATINGS - CONT'D.

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

GATED AMPLIFIER SERVICE

GRID #1 VOLTAGE:		
NEGATIVE BIAS VALUE	→110	VOLTS
PLATE DISSIPATION	→2.3	WATTS
GRID #3 INPUT	0.1	WATT
GRIDS #2 & #4 INPUT:*		
FOR GRIDS #2 & #4 VOLTAGES UP TO 165 VOLTS	1.1	WATTS
FOR GRIDS #2 & #4 VOLTAGES BETWEEN 165 VOLTS AND 330 VOLTS	SEE RATING CHART	
GRID #1 INPUT	0.1	WATT
GRID #1 OR GRID #3 CIRCUIT RESISTANCE:		
FIXED BIAS OPERATION	0.5	MEGOHM
CATHODE BIAS OPERATION	1.0	MEGOHM

TYPICAL OPERATING CHARACTERISTICS

CLASS A_1 AMPLIFIER

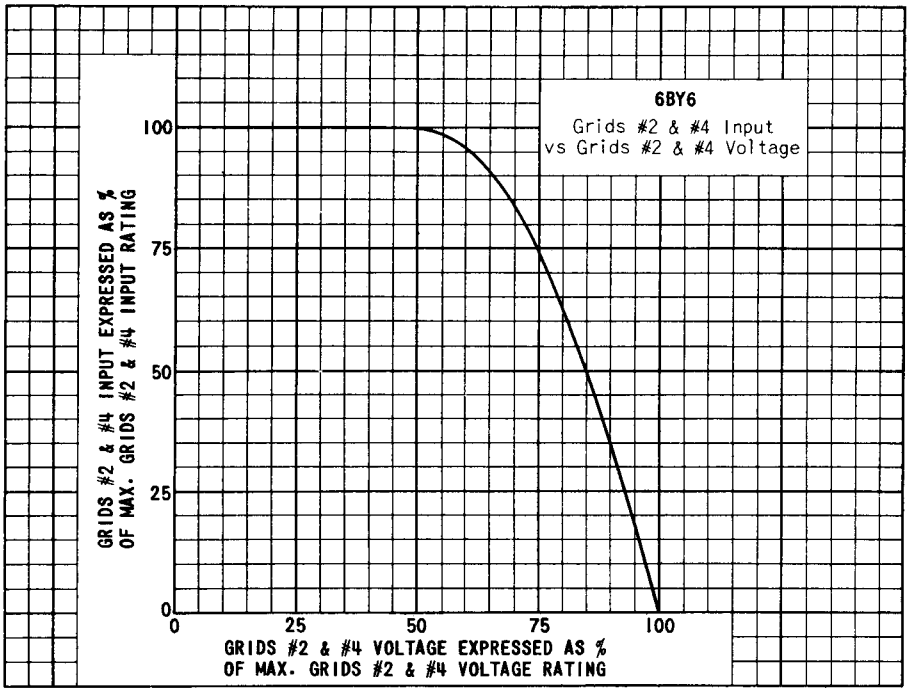
PLATE VOLTAGE	250	VOLTS
GRIDS #2 & #4 VOLTAGE	100	VOLTS
GRID #3 VOLTAGE	-2.5	VOLTS
GRID #1 VOLTAGE	-2.5	VOLTS
GRID #3 TO PLATE TRANSCONDUCTANCE	500	μMHOS
GRID #1 TO PLATE TRANSCONDUCTANCE	1 900	μMHOS
PLATE CURRENT	6.5	MA.
GRID #2 & #4 CURRENT	9	MA.
GRID #3 VOLTS (APPROX.) FOR I_b = 35 μAMP. AND GRID #1 VOLTS = -4	-15	VOLTS
GRID #1 VOLTS (APPROX.) FOR I_b = 35 μAMP. AND GRID #3 VOLTS = 0	-12	VOLTS

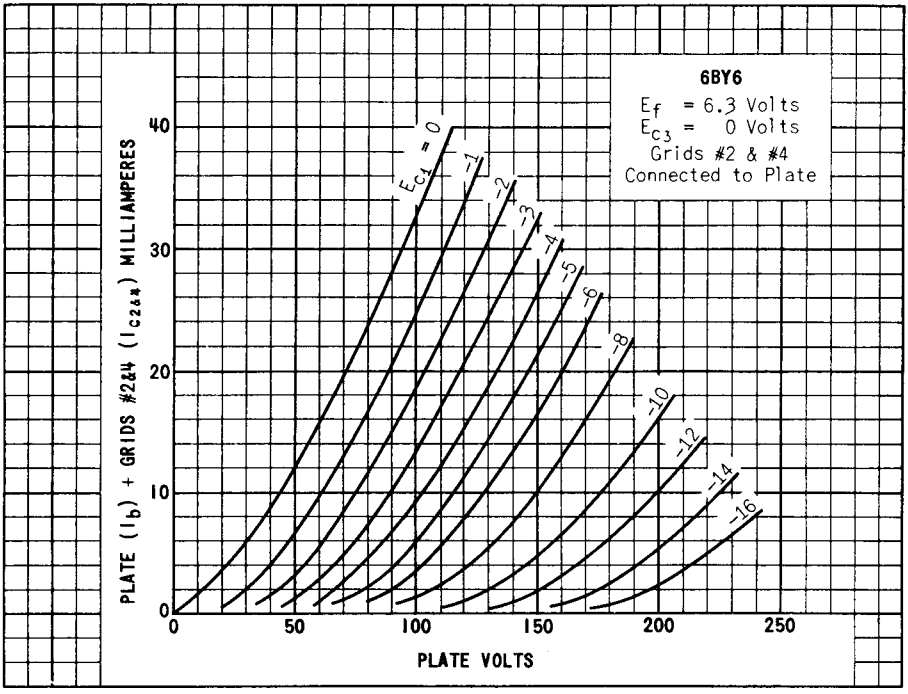
SYNC SEPARATOR AND SYNC CLIPPER

PLATE VOLTAGE	10	VOLTS
GRID #3 VOLTAGE	0	VOLTS
GRID #2 & #4 VOLTAGE	25	VOLTS
GRID #1 VOLTAGE	0	VOLTS
PLATE CURRENT	1.4	MA.
GRIDS #2 & #4 CURRENT	3.5	MA.
GRID #3 BIAS VOLTS (APPROX.) FOR PLATE VOLTAGE OF 25 VOLTS, GRIDS #2 & #4 VOLTAGE OF 25 VOLTS, GRID #1 VOLTAGE OF 0 VOLTS AND PLATE CURRENT OF 50 μAMP.	-2.5	VOLTS
GRID #1 BIAS VOLTAGE (APPROX.) FOR PLATE VOLTAGE OF 25 VOLTS, GRIDS #2 & #4 VOLTAGE OF 25 VOLTS, GRID #3 VOLTAGE OF 0 VOLTS AND PLATE CURRENT OF 50 μAMP.	-2.3	VOLTS

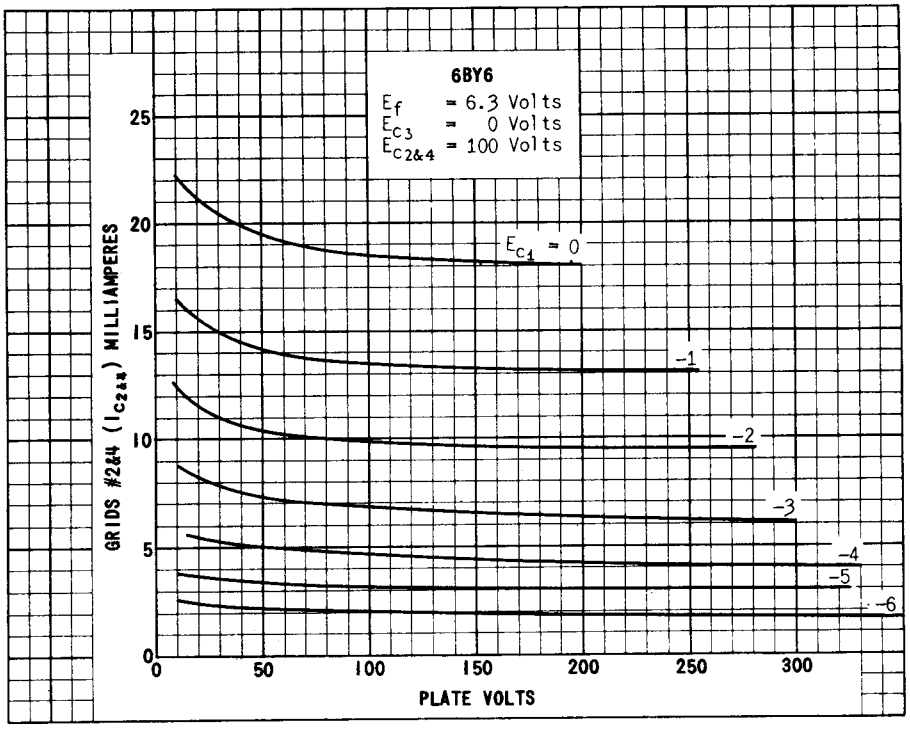
[B] THE DC COMPONENT MUST NOT EXCEED 100 VOLTS.

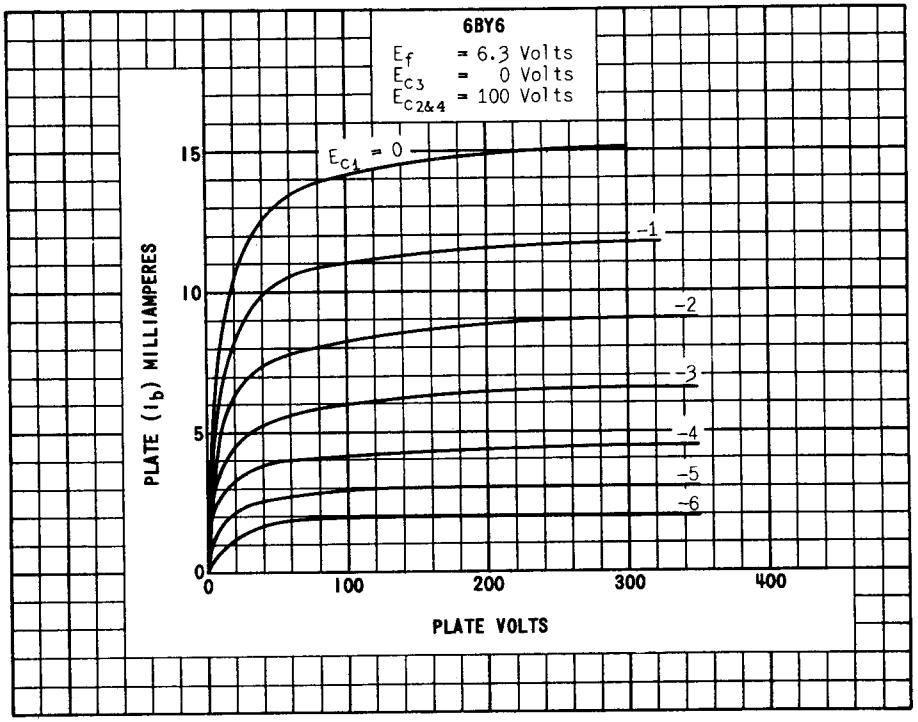
→ INDICATES A CHANGE. * INDICATES AN ADDITION.

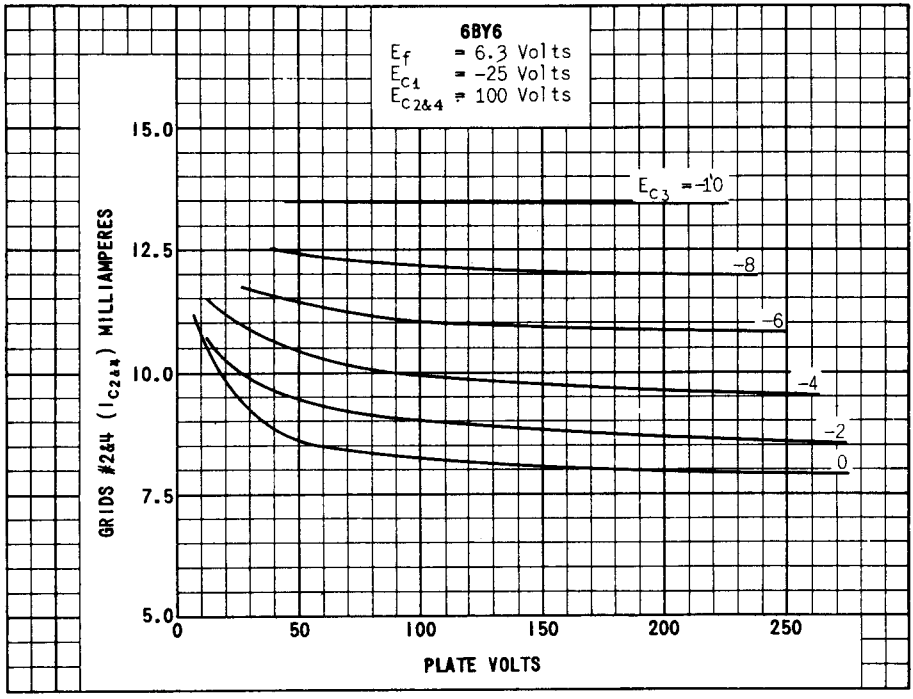


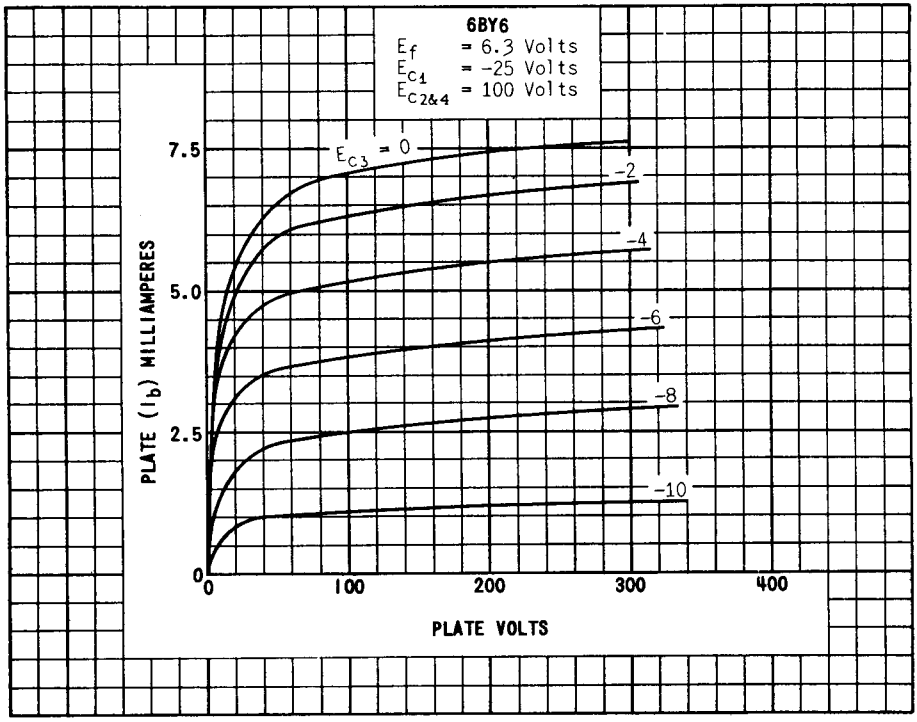


6BY6


6BY6
E_f = 6.3 Volts
E_{c3} = 0 Volts
$E_{c2\&4}$ = 100 Volts
E_{c1} = 0
-1
-2
-3
-4
-5
-6
GRIDS #2&4 ($I_{c2\&4}$) MILLIAMPERES
0
5
10
15
20
25
0
50
100
150
200
250
300
PLATE VOLTS


6BY6
E_f = 6.3 Volts
E_{c3} = 0 Volts
$E_{c2\&4}$ = 100 Volts
E_{c1} = 0
-1
-2
-3
-4
-5
-6
PLATE (I_b) MILLIAMPERES
0
5
10
15
0
100
200
300
400
PLATE VOLTS


6BY6
E_f = 6.3 Volts
E_{c1} = -25 Volts
$E_{c2\&4}$ = 100 Volts
E_{c3} = -10
-8
-6
-4
-2
0
15.0
12.5
10.0
7.5
5.0
0
50
100
150
200
250
GRIDS #2&4 ($I_{c2\&4}$) MILLIAMPERES
PLATE VOLTS


6BY6
E_f = 6.3 Volts
E_{c1} = -25 Volts
$E_{c2\&4}$ = 100 Volts
E_{c3} = 0
-2
-4
-6
-8
-10
7.5
5.0
2.5
0
0
100
200
300
400
PLATE (I_b) MILLIAMPERES
PLATE VOLTS