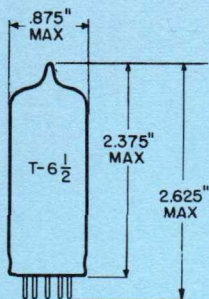


TUNG-SOL**BEAM PENTODE**

MINIATURE TYPE



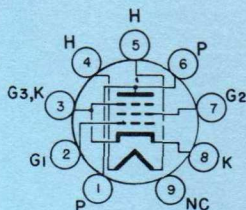
GLASS BULB

MINIATURE
9 PIN BASE E9-1
OUTLINE DRAWING
JEDEC 6-3

COATED UNIPOTENTIAL CATHODE

FOR MOBILE AND
AIRCRAFT APPLICATIONS

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM
JEDEC 9CE

THE 6216 IS A BEAM PENTODE POWER AMPLIFIER IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS EXTREMELY RESISTANT TO THE VIBRATIONS ENCOUNTERED IN PRESENT HIGH-SPEED MILITARY AIRCRAFT.

THE 6216 MAY BE USED IN CLASS A, CLASS B, AND CLASS C AMPLIFIER APPLICATIONS, AS A PASSING TUBE IN ELECTRONIC VOLTAGE-REGULATED POWER SUPPLIES, IN WIDE BAND VIDEO AMPLIFIERS, AND IN PASSIVE SWITCHING APPLICATIONS.

DIRECT INTERELECTRODE CAPACITANCES

WITHOUT SHIELD

GRID TO PLATE: (G1 TO P), MAX.

0.370 pf

INPUT: G1 TO (H+K+G2+G3+B.P.+B.S.+I.S.)

12.3 pf

OUTPUT: P TO (H+K+G2+G3+B.P.+B.S.+I.S.)

6.7 pf

HEATER CHARACTERISTICS AND RATINGS

DESIGN CENTER VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS:

VOLTAGE

6.3 VOLTS

CURRENT

1200 MA.

MAXIMUM HEATER-CATHODE VOLTAGE

150 VOLTS

MAXIMUM RATINGS

DESIGN CENTER VALUES - SEE EIA STANDARD RS-239

PLATE VOLTAGE

300 VOLTS

GRID #2 VOLTAGE

200 VOLTS

POSITIVE DC GRID #1 VOLTAGE

0 VOLTS

PLATE DISSIPATION

10 WATTS

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TUNG-SOL

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MAXIMUM RATINGS - CONT'D.

DESIGN CENTER VALUES - SEE EIA STANDARD RS-239

GRID #2 DISSIPATION	1.0	WATTS
CATHODE CURRENT	110	MA.
BULB TEMPERATURE AT ANY POINT	210	°C
GRID #1 CIRCUIT RESISTANCE (FIXED BIAS)	0.1	MEGOHM
GRID #1 CIRCUIT RESISTANCE (SELF BIAS)	0.5	MEGOHM

AVERAGE CHARACTERISTICS

FILTER REACTOR

PLATE VOLTAGE	100	VOLTS
GRID #2 VOLTAGE	100	VOLTS
GRID #1 VOLTAGE	-3	VOLTS
GRID #1 RESISTOR	0.1	MEGOHM
PLATE RESISTANCE (APPROX.)	18 500	OHMS
TRANSCONDUCTANCE	12 800	μMHOS
PLATE CURRENT	72	MA.
GRID #2 CURRENT	3	MA.
GRID #1 VOLTAGE (APPROX.) FOR $I_b = 50 \mu A$	-25	VOLTS

TYPICAL OPERATION

FILTER REACTOR (SEE CIRCUIT)

DC PLATE SUPPLY VOLTAGE (INPUT TO FILTER)	400	VOLTS
DC PLATE VOLTAGE (PLATE TO CATHODE)	60	VOLTS
DC GRID #2 VOLTAGE	100	VOLTS
DC GRID #1 VOLTAGE	-1	VOLTS
DC OUTPUT VOLTAGE (OUTPUT FROM FILTER)	335	VOLTS
DC CATHODE CURRENT	110	MA DC
RMS RIPPLE VOLTAGE (IN OUTPUT) (NOTE 1)	210	MV.

CLASS A AUDIO AMPLIFIER

PLATE VOLTAGE	200	VOLTS
GRID #2 (SCREEN) VOLTAGE	100	VOLTS
GRID #1 (CONTROL GRID) VOLTAGE	-6	VOLTS
PEAK AF GRID #1 VOLTAGE	6	VOLTS
ZERO SIGNAL PLATE CURRENT	47	MA.
MAX. SIGNAL PLATE CURRENT	51	MA.
ZERO SIGNAL GRID #2 CURRENT	2.0	MA.
MAX. SIGNAL GRID #2 CURRENT	4.0	MA.
PLATE RESISTANCE	38 800	OHMS
TRANSCONDUCTANCE	8 800	μMHOS
LOAD RESISTANCE	4 500	OHMS
TOTAL HARMONIC	10	PERCENT
MAX. SIGNAL POWER OUTPUT	3.8	WATTS

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TUNG-SOL

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TYPICAL OPERATION - CONT'D.

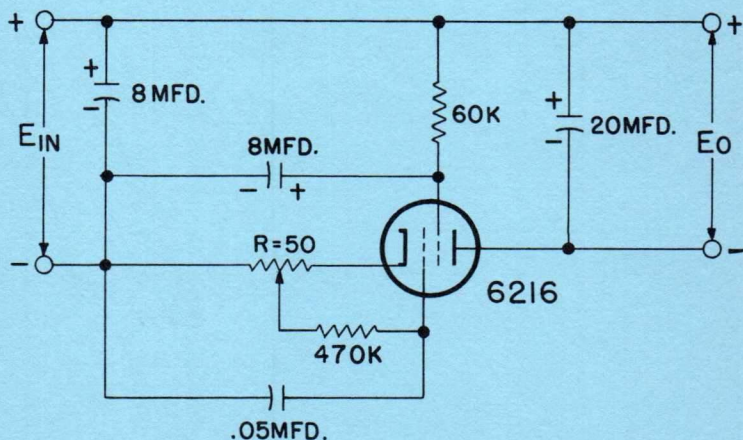
CLASS C OSCILLATOR-AMPLIFIER - 50 MC

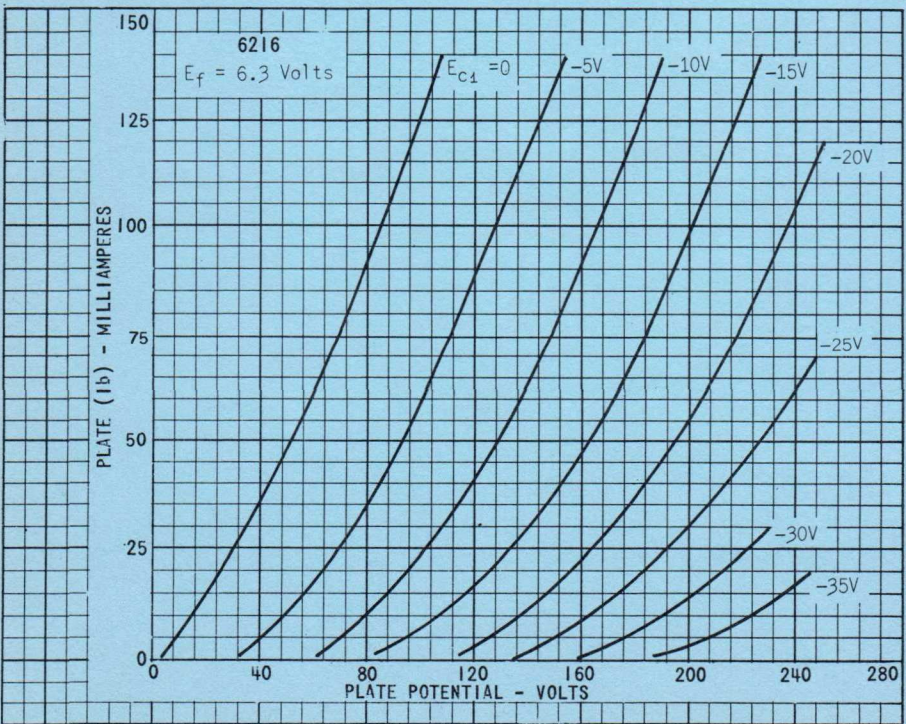
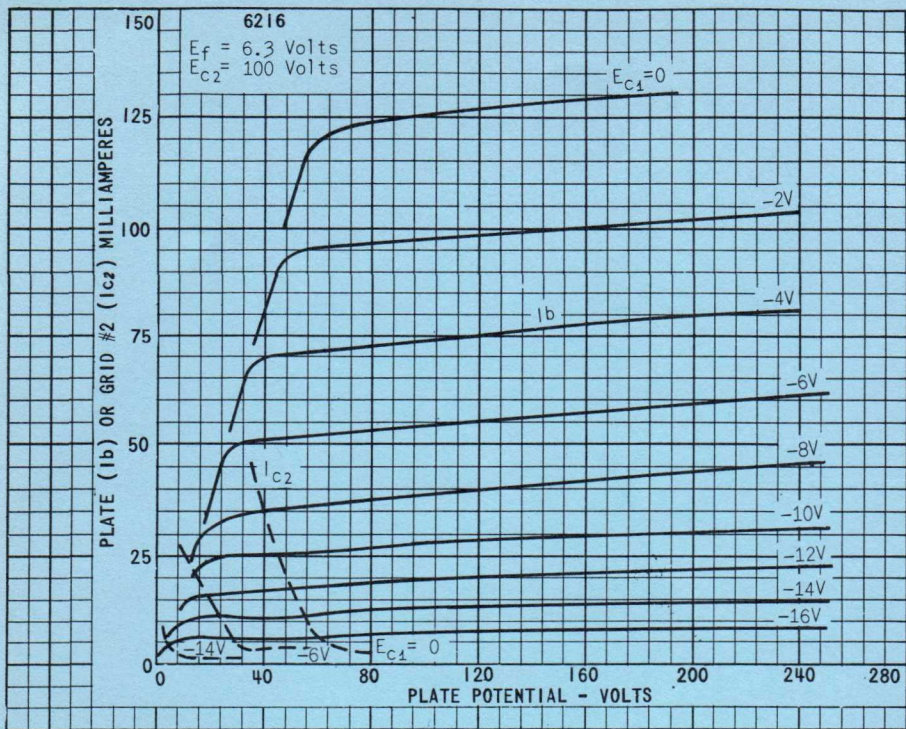
DC PLATE VOLTAGE	300	VOLTS
DC GRID #2 VOLTAGE	150	VOLTS
DC GRID #1 VOLTAGE ^A	-50	VOLTS
	22 000	OHMS
PEAK RF GRID #1 VOLTAGE	65	VOLTS
DC PLATE CURRENT	63	MA.
DC GRID #2 CURRENT	8.0	MA.
DC GRID #1 CURRENT	2.0	MA.
GRID #1 DRIVING POWER (APPROX.)	0.3	WATTS
USEFUL POWER OUTPUT	8.8	WATTS

^AOBTAINED FROM FIXED SOURCE OF GRID RESISTOR OF VALUE SHOWN.

NOTE

¹WHEN THE 6216 IS USED IN THE CIRCUIT SHOWN BELOW, THE POTENTIOMETER R SHOULD BE ADJUSTED FOR MINIMUM AC OUTPUT VOLTAGE ACROSS THE E_o TERMINALS. THE CURVE SHOWN IN THE APPENDIX REPRESENTS ADJUSTMENT FOR MINIMUM AC OUTPUT VOLTAGE AT 100 MA DC LOAD CURRENT.





6216

COMPARISON OF FILTERING ACTION
VS IRON CORE CHOKE 12H = 150 MA

$E_f = 6.3$ Volts

E_{c2} = Derived from 400V thru 60K

E_c = (Input to Filter): 400 V

E_{c1} = See Graph

