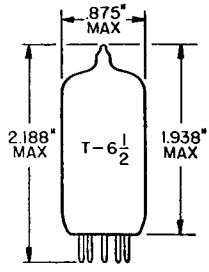
TUNG-SOL

TWIN TRIODE

MINIATURE TYPE

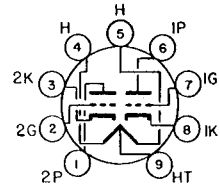


GLASS BULB
SMALL BUTTON
9 PIN BASE E9-1
OUTLINE DRAWING
JEDEC 6-2

FOR
MOBILE COMMUNICATIONS
EQUIPMENT

COATED UNIPOTENTIAL CATHODE

ANY MOUNTING POSITION



BOTTOM VIEW
BASING DIAGRAM
JEDEC 9A

THE 6679 IS A HIGH-MU TWIN TRIODE IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS SUITABLE FOR USE AS A GROUNDED-GRID AMPLIFIER OR AS A FREQUENCY CONVERTER AT FREQUENCIES BELOW APPROXIMATELY 300 MEGACYCLES.

THE 6679 MAY BE OPERATED WITHOUT SERIOUS DEGRADATION UNDER NORMAL VARIATIONS IN SUPPLY VOLTAGE AS ENCOUNTERED WITH AUTOMOTIVE ELECTRICAL SYSTEMS. ALSO, THE TUBE WILL TOLERATE LARGE HEATER VOLTAGE VARIATIONS FOR SHORT PERIODES, BUT HIGHER EQUIPMENT RELIABILITY CAN BE ACHIEVED WITH IMPROVED SUPPLY-VOLTAGE REGULATION.

THE ELECTRICAL CHARACTERISTICS OF THE 6679 ARE EQUIVALENT TO THE 12AT7.

DIRECT INTERELECTRODE CAPACITANCES

	WITH SHIELD[A]	WITHOUT SHIELD	
GRID TO PLATE, EACH SECTION	1.5	1.5	pf
INPUT, EACH SECTION	2.2	2.2	pf
OUTPUT, SECTION 1	1.2	0.5	pf
OUTPUT, SECTION 2	1.5	0.4	pf
HEATER TO CATHODE, EACH SECTION	2.4[B]	2.4	pf
PLATE TO CATHODE, EACH SECTION	0.2	0.2	pf
GROUNDED GRID INPUT, EACH SECTION	4.6	4.6	pf
GROUNDED GRID OUTPUT, EACH SECTION	2.6	1.8	pf

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

SUPPLY CONNECTED TO PINS	4 AND 5	9 AND 4+5	
AVERAGE VALUES - VOLTAGE	12.6	6.3	VOLTS
CURRENT	150	300	MA.
HEATER SUPPLY LIMITS:			
VOLTAGE OPERATION	12.6±2.5	6.3±1.3	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE	100		VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE	100		VOLTS

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MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

EACH SECTION

PLATE VOLTAGE	330	VOLTS
POSITIVE DC GRID VOLTAGE	0	VOLTS
NEGATIVE DC GRID VOLTAGE	55	VOLTS
PLATE DISSIPATION	2.8	WATTS

TYPICAL OPERATING CHARACTERISTICS

CLASS A1 AMPLIFIER - EACH SECTION

PLATE VOLTAGE	250	VOLTS
CATHODE-BIAS RESISTOR	200	OHMS
PLATE CURRENT	10	MA.
TRANSCONDUCTANCE	5500	μMHOS
AMPLIFICATION FACTOR	60	
PLATE RESISTANCE, APPROX.	10,900	OHMS
GRID VOLTAGE, APPROX. Ib = 10 μAMPS.	-12	VOLTS

[A] WITH EXTERNAL SHIELD 315 CONNECTED TO HEATER UNLESS OTHERWISE SPECIFIED.

[B] WITH EXTERNAL SHIELD 315 CONNECTED TO GROUND.

CLASS A RESISTANCE-COUPLED AMPLIFIER

EACH SECTION

LOW IMPEDANCE DRIVE (APPROXIMATELY 200 OHMS)										
R_L	R_{gf}	Ebb = 90 Volts			Ebb = 180 Volts			Ebb = 300 Volts		
		R_k	E_o	Gain	R_k	E_o	Gain	R_k	E_o	Gain
0.10	0.10	1600	5.3	26	1100	12	31	1000	22	32
0.10	0.24	1800	7.8	29	1400	17	33	1200	30	33
0.24	0.24	3800	7.2	28	2800	16	32	2300	28	34
0.24	0.51	4200	9.4	30	3300	20	33	2800	35	33
0.51	0.51	8000	8.3	28	5600	18	31	4900	31	33
0.51	1.0	9600	10	29	6700	23	32	6000	38	33

HIGH IMPEDANCE DRIVE (APPROXIMATELY 100K OHMS)										
R_L	R_{gf}	Ebb = 90 Volts			Ebb = 180 Volts			Ebb = 300 Volts		
		R_k	E_o	Gain	R_k	E_o	Gain	R_k	E_o	Gain
0.10	0.10	2000	9.9	25	1200	17	31	900	35	33
0.10	0.24	2400	13	27	1400	28	33	1200	47	33
0.24	0.24	4700	12	27	2900	25	32	2300	42	34
0.24	0.51	5300	15	28	3600	31	33	2900	52	34
0.51	0.51	9300	13	27	6000	27	31	5000	45	33
0.51	1.0	11000	16	28	7100	33	32	6400	55	34

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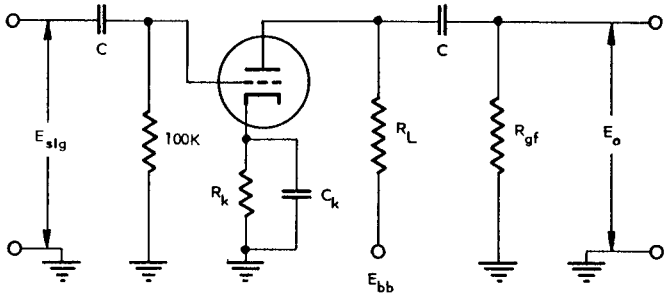
NOTES:

1. E_o IS MAXIMUM RMS VOLTAGE OUTPUT FOR APPROXIMATELY 5% TOTAL HARMONIC DISTORTION.
2. GAIN IS MEASURED FOR AN OUTPUT VOLTAGE OF TWO VOLTS RMS.
3. R_k IS IN OHMS; R_L AND R_{gf} ARE IN MEGOHMS.



COUPLING CAPACITORS (C) SHOULD BE SELECTED TO GIVE DESIRED FREQUENCY RESPONSE. R_k SHOULD BE ADEQUATELY BY-PASSED.

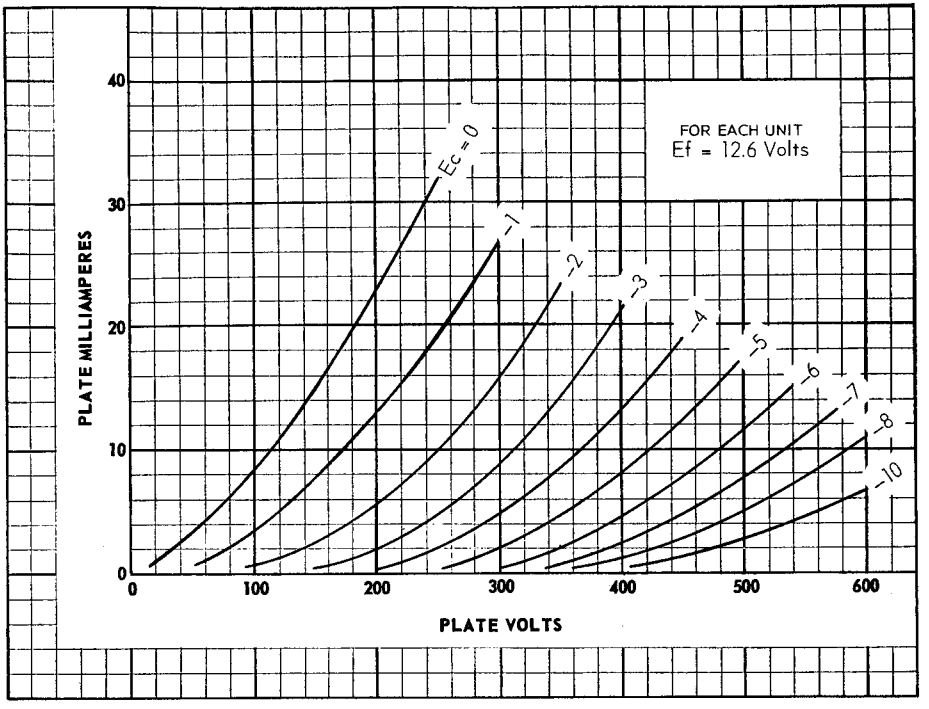
SPECIAL TESTS AND RATINGS

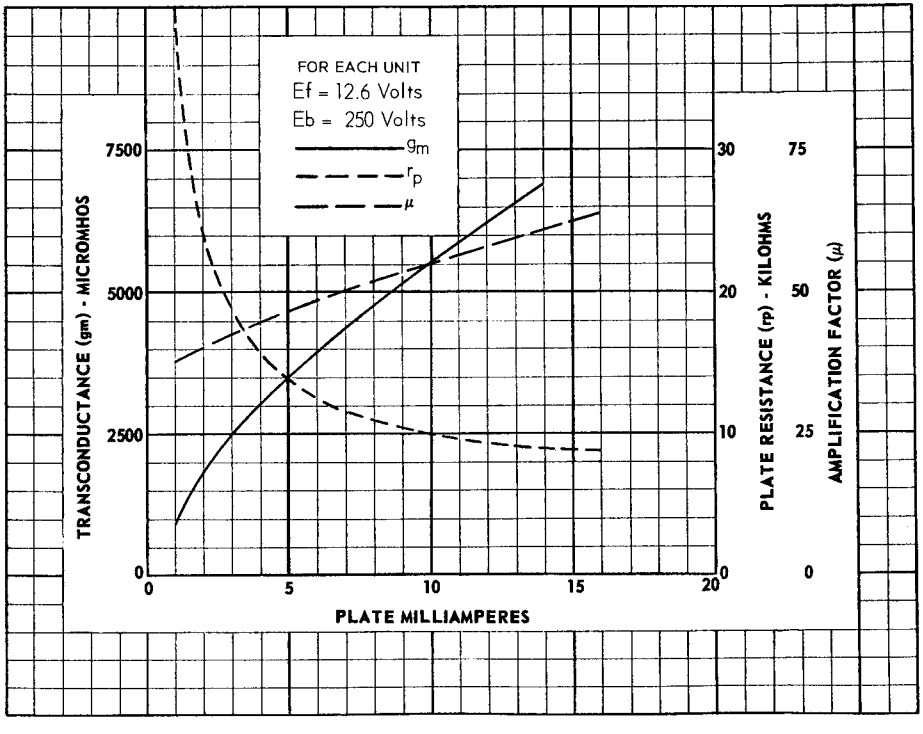
HEATER-CYCLING LIFE TEST

AVERAGE TRANSCONDUCTANCE

AT REDUCED HEATER VOLTAGE, EACH SECTION	4400	μMHOS
E_f = 10.0 VOLTS, E_b = 250 VOLTS, R_k = 200 OHMS (BYPASSED)		

6679


FOR EACH UNIT
Ef = 12.6 Volts
Ec = 0
-1
-2
-3
-4
-5
-6
-7
-8
-10
PLATE MILLIAMPERES
PLATE VOLTS
0
10
20
30
40
0
100
200
300
400
500
600


FOR EACH UNIT
Ef = 12.6 Volts
Eb = 250 Volts
gm
rp
μ
TRANSCONDUCTANCE (gm) - MICROMHOS
PLATE RESISTANCE (rp) - KILOHMS
AMPLIFICATION FACTOR (μ)
PLATE MILLIAMPERES
0
2500
5000
7500
0
10
20
30
0
25
50
75
0
5
10
15
20