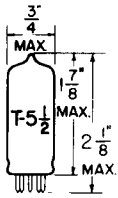
TUNG-SOL

PENTODE

MINIATURE TYPE

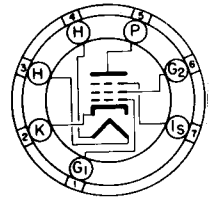


GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER
3.15 VOLTS 0.6 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
MINIATURE BUTTON
7 PIN BASE
7CM

THE 3BZ6 IS A HIGH TRANSCONDUCTANCE, SEMI-REMOTE CUT-OFF, PENTODE AMPLIFIER. IT IS DESIGNED FOR SERVICE AS AN AUTOMATIC GAIN CONTROLLED IF AMPLIFIER IN 600 MA. SERIES HEATER OPERATED TELEVISION RECEIVERS. THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED. WITH THE EXCEPTION OF HEATER RATINGS, ITS CHARACTERISTICS ARE IDENTICAL TO THE 6BZ6.

DIRECT INTERELECTRODE CAPACITANCES

	WITH SHIELD[A]	WITHOUT SHIELD	
GRID TO PLATE: G_1 TO P (MAX.)	0.015	0.02	μμf
INPUT: G_1 TO $(H+K+G_2+G_3+IS)$	7.5	7.5	μμf
OUTPUT: P TO $(H+K+G_2+G_3+IS)$	2.8	1.8	μμf

[A] EXTERNAL SHIELD #316 CONNECTED TO CATHODE AT SOCKET.

RATINGS[B]

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

HEATER VOLTAGE	3.15	VOLTS
MAXIMUM HEATER CATHODE VOLTAGE:		
HEATER NEGATIVE WITH RESPECT TO CATHODE[C] →		
TOTAL DC AND PEAK	300	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE		
DC	100	VOLTS
TOTAL DC AND PEAK	200	VOLTS
MAXIMUM PLATE VOLTAGE	300	VOLTS
MAXIMUM GRID #2 VOLTAGE	SEE RATING CURVE	
MAXIMUM PLATE DISSIPATION	2.5	WATTS
MAXIMUM GRID #2 DISSIPATION	0.5	WATT
MAXIMUM GRID #2 SUPPLY VOLTAGE	300	VOLTS
MAXIMUM GRID #1 CIRCUIT RESISTANCE:		
FIXED BIAS OPERATION	0.25	MEGOHM
SELF BIAS OPERATION	1.0	MEGOHM
HEATER WARM-UP TIME (APPROX.)*	11.0	SECOND

*HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

→ INDICATES A CHANGE.

CONTINUED ON FOLLOWING PAGE

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CONTINUED FROM PRECEDING PAGE

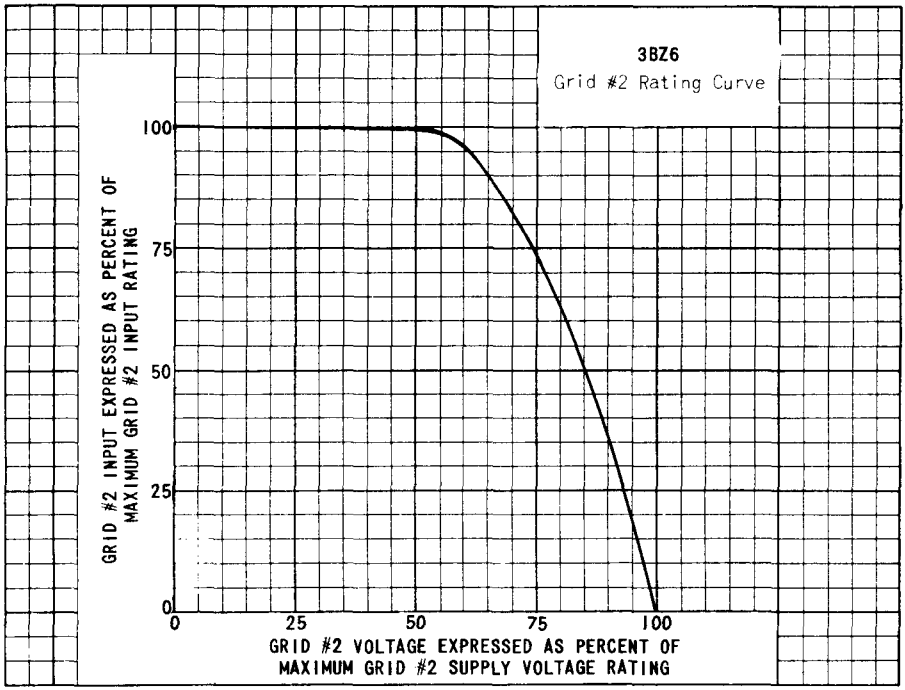
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

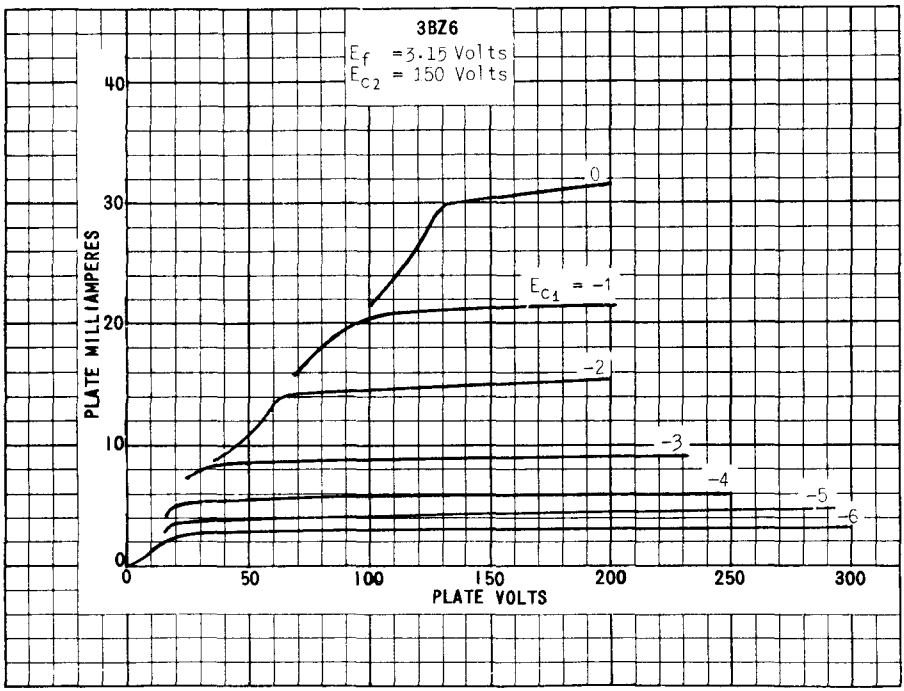
CLASS A_1 AMPLIFIER

HEATER VOLTAGE	3.15	VOLTS
HEATER CURRENT	0.6	AMP.
PLATE VOLTAGE	200	VOLTS
GRID #2 VOLTAGE	150	VOLTS
GRID #3 VOLTAGE	PIN #7 CONNECTED TO PIN #2 AT SOCKET	
CATHODE BIAS RESISTOR	180	OHMS
PLATE RESISTANCE (APPROX.)	0.6	MEGOHM
TRANSCONDUCTANCE	6 100	µMHOS
PLATE CURRENT	11	MA.
GRID #2 CURRENT	2.6	MA.
GRID #1 VOLTAGE (APPROX.) FOR G_m = 50 µMHOS	-23	VOLTS

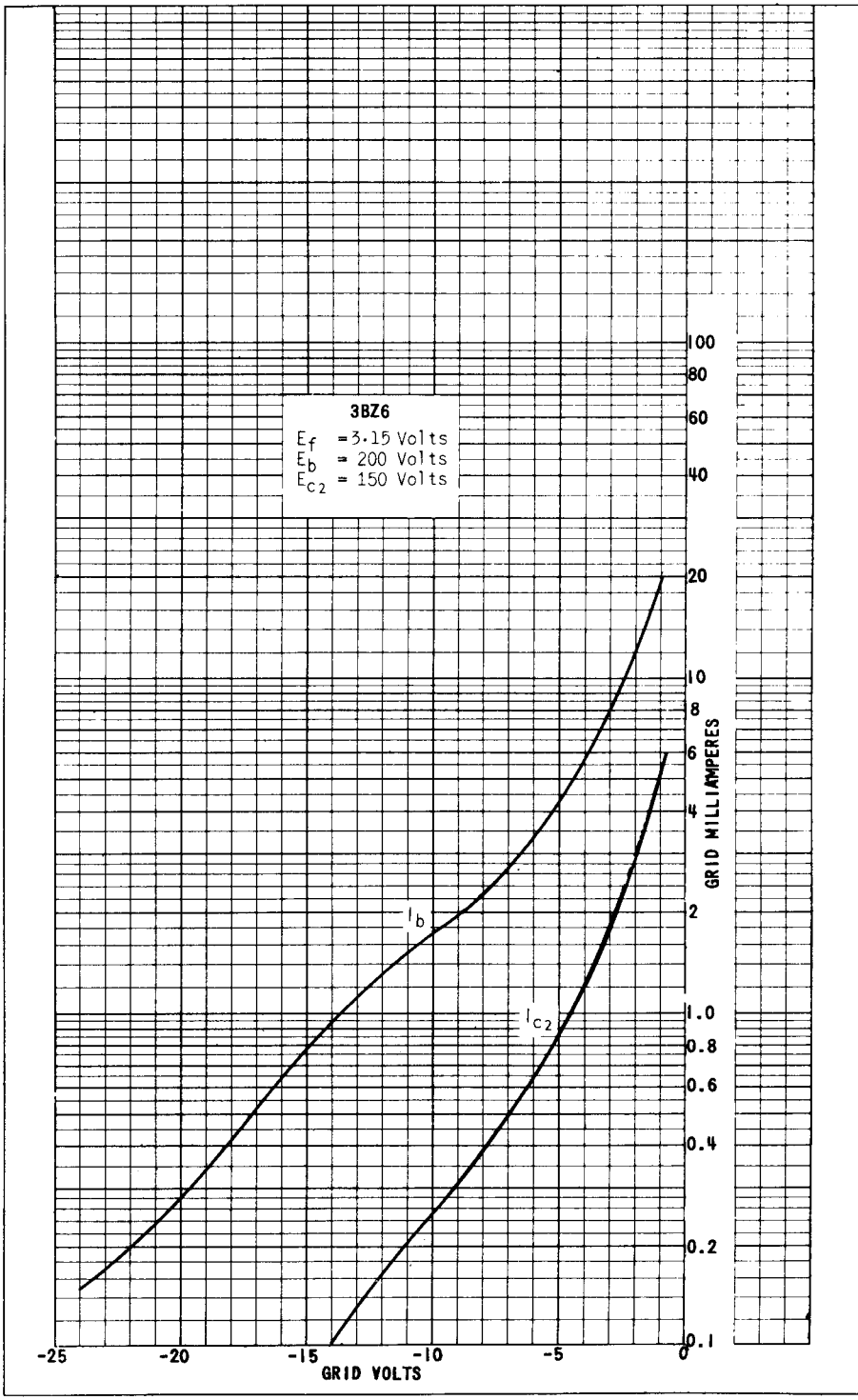
[B] DESIGN MAXIMUM RATINGS ARE THE LIMITING VALUES EXPRESSED WITH RESPECT TO BOGIE TUBES AT WHICH SATISFACTORY TUBE LIFE CAN BE EXPECTED TO OCCUR IN THE TYPES OF SERVICE FOR WHICH THE TUBE IS RATED. THEREFORE, THE EQUIPMENT DESIGNER MUST ESTABLISH THE CIRCUIT DESIGN SO THAT INITIALLY AND THROUGHOUT EQUIPMENT LIFE NO DESIGN MAXIMUM VALUE IS EXCEEDED WITH A BOGIE TUBE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, AND ENVIRONMENTAL CONDITIONS.

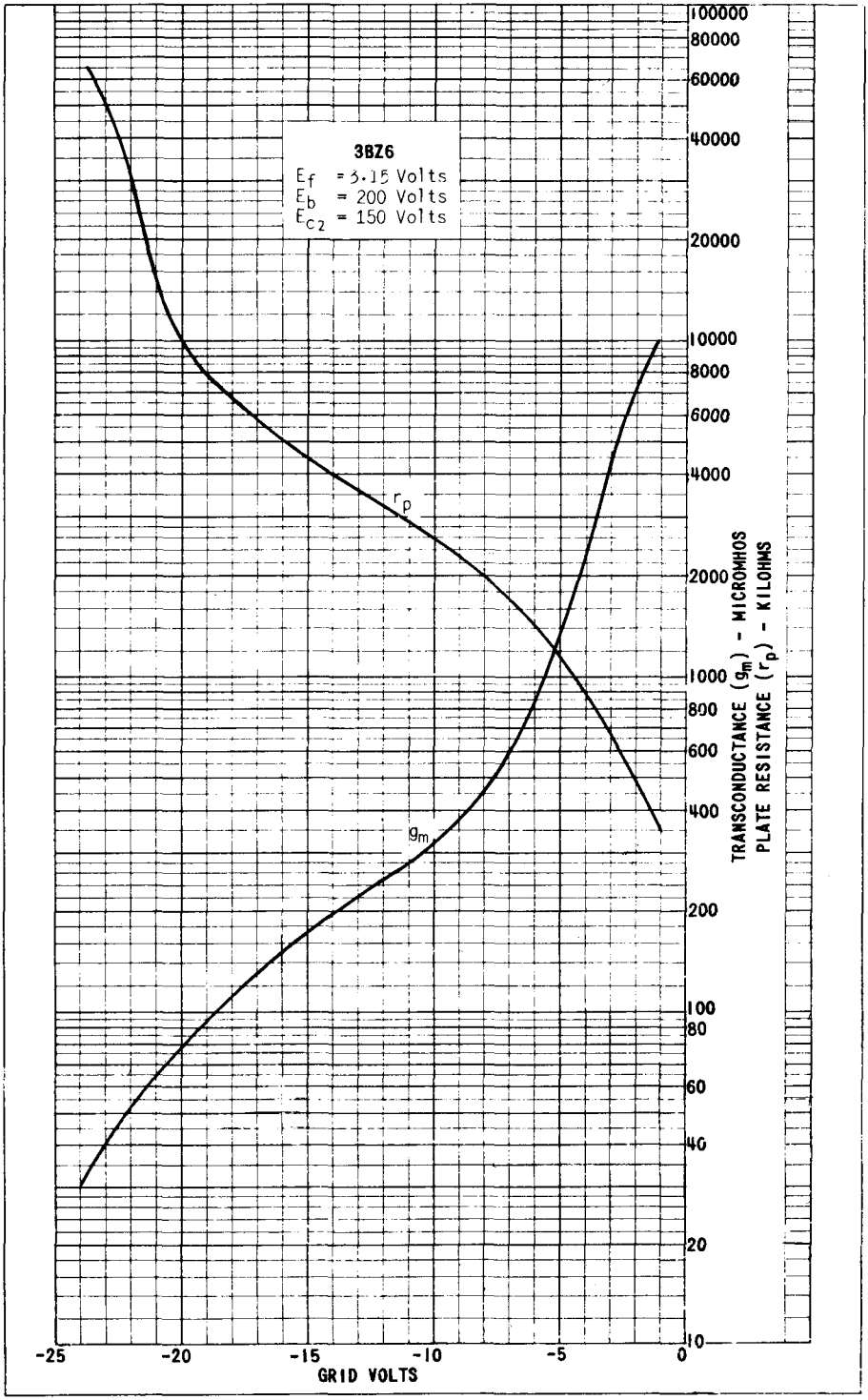
[C] THE DC COMPONENT MUST NOT EXCEED 200 VOLTS.


3BZ6
Grid #2 Rating Curve
GRID #2 INPUT EXPRESSED AS PERCENT OF MAXIMUM GRID #2 INPUT RATING
100
75
50
25
0
0
25
50
75
100
GRID #2 VOLTAGE EXPRESSED AS PERCENT OF MAXIMUM GRID #2 SUPPLY VOLTAGE RATING


3BZ6
Ef =3.15 Volts
Ec2 = 150 Volts
PLATE MILLIAMPERES
40
30
20
10
0
0
50
100
150
200
250
300
PLATE VOLTS
0
Ec1 = -1
-2
-3
-4
-5
-6

3BZ6


3BZ6
Ef = 3.15 Volts
Eb = 200 Volts
Ec2 = 150 Volts
Ib
Ic2
100
80
60
40
20
10
8
6
4
2
1.0
0.8
0.6
0.4
0.2
0.1
GRID MILLIAMPERES
-25
-20
-15
-10
-5
0
GRID VOLTS


3BZ6
E_f = 3.15 Volts
E_b = 200 Volts
E_{c2} = 150 Volts
r_p
g_m
100000
80000
60000
40000
20000
10000
8000
6000
4000
2000
1000
800
600
400
200
100
80
60
40
20
10
TRANSCONDUCTANCE (g_m) - MICROMHOS
PLATE RESISTANCE (r_p) - KILOHMS
-25
-20
-15
-10
-5
0
GRID VOLTS