



NATIONAL

KT88

Beam Power Pentode

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The KT-88 is a beam power amplifier rigidly designed primarily for low intermodular distortion audio service. The KT-88 carries a 42 watt plate dissipation rating for push-pull amplifier designs up to 100 watts output.

Direct Interelectrode Capacitances Without Shield

Grid 1 to Plate	1.2 pF
Input	16 pF
Output	12 pF

Heater Characteristics

Voltage	6.3 V
Current	1.6 A
Maximum Heater-Cathode Voltage	
Heater Negative	300 V
Heater Positive	200 V

Maximum Ratings

Plate Voltage, DC	800 V
Grid 2 Voltage, DC	
Pentode Connection	600 V
Triode & Ultra-Linear Connection	600 V
Grid 1 Voltage, DC	- 300 to 0 V
Plate Dissipation	42 W
Grid 2 Dissipation	
Continuous	6.0 W
Intermittent-Music or Speech Peaks	10.0 W
Cathode Current, DC	230 mA
Grid 1 Circuit Resistance	
Fixed Bias	50 k Ω
Self Bias	250 k Ω
Bulb Temperature	250 °C



Average Characteristics PENTODE CONNECTION

Plate Voltage, DC	250 v
Grid 2 Voltage	250 V
Grid 1 Voltage	-14 V
Plate Current	140 mA
Grid 2 Current	12 mA
Transconductance	11,000 μ mhos
Plate Resistance, approx.	15,000 Ω
Triode Amplification Factor	8
Grid Voltage for 1mA Plate Current	-40 V

Typical Operating Conditions CLASS A1 AUDIO AMPLIFIER-SINGLE TUBE

Plate Voltage, DC	250	400 V
Grid 2 Voltage, DC	250	225 V
Grid 1 Voltage, DC	-14	-16.5 V
Peak Signal Voltage	14	16.5 V
Zero-Signal Plate Current, DC	140	87 mA
Max-Signal Plate Current, DC	150	105 mA
Zero-Signal Grid 2 Current, DC	12	4 mA
Max-Signal Grid 2 Current, DC	22	14 mA
Load Resistance	1500	3000 Ω
Total Harmonic Distortion, approx.	7	13.5 %
Max-Signal Power Output	12.5	20 W

PUSH-PULL CLASS AB1 AUDIO AMPLIFIER PENTODE CONNECTION Average Values for Two Matched Tubes *

	Self Bias		Fixed Bias	
Plate Voltage, DC	400	400	450	600 V
Grid 2 Voltage, DC	310	270	310	300 V
Grid 1 Voltage, DC	-	-23	-29.5	-32.5 V
Common Cathode Resistor Bypassed	140	-	-	- Ω
Peak Grid-Grid Signal Voltage	43	46	58	65 V
Zero-Signal Plate Current, DC	170	170	150	100 mA
Max-Signal Plate Current, DC	185	275	295	270 mA
Zero-Signal Grid 2 Current, DC	10	9	9	5 mA
Max-Signal Grid 2 Current, DC	25	35	38	33 mA
Effective Load, Plate to Plate	5000	3500	3500	5000 Ω
Total Harmonic Distortion, approx.	0.7	0.6	1.5	3.0 %
Max-Signal Power Output	40	60	77	100 W

* A small resistor in series with each cathode is recommended for better maintenance of balance between tubes.



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Typical Operating Conditions

PUSH-PULL AUDIO AMPLIFIER, ULTRA-LINEAR OPERATION

Average Values for Two Matched Tubes *

Grid 2 tapped at 40% of Primary turns

	Self Bias Class A1	Fixed Bias Class AB1
Plate Voltage, DC	395	450 V
Grid 2 Voltage, DC	395	450 V
Grid 1 Voltage, DC	-	-48 V
Common Cathode Resistor Bypassed	200	- Ω
Peak Grid-Grid Signal Voltage	70	96 V
Zero-Signal Plate Current, DC	170	150 mA
Max-Signal Plate Current, DC	174	265 mA
Zero-Signal Grid 2 Current, DC	12.5	12 mA
Max-Signal Grid 2 Current, DC	23	38 mA
Effective Load, Plate to Plate	5600	4000 Ω
Total Harmonic Distortion, approx.	1.5	2.4 %
Max-Signal Power Output	34	70 W

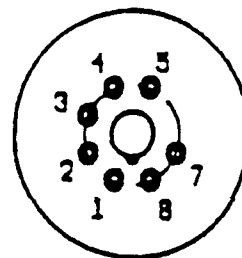
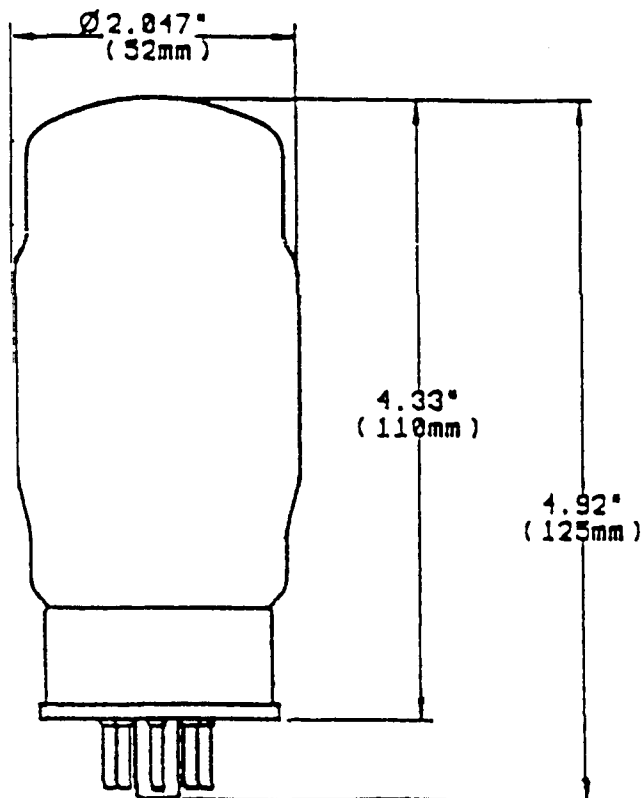
* A small resistor in series with each cathode is recommended for better maintenance of balance between tubes.

Physical Characteristics

Tube Envelope: T16 Glass Bulb

Base: Large low loss phenolic wafer with barriers. 7-pin #B7-99.

Installation: Tubes may be mounted in any position. It is recommended that tube socket centres are not less than 4" (10cm) apart. Tubes should not be mounted directly above another. Free air circulation around tube is desirable.



BOTTOM VIEW

PIN #: 1 BASE SHELL
2 h
3 a
4 g2
5 g1
6 NP
7 h
8 k, bp

DIMENSIONS ARE MAXIMUM



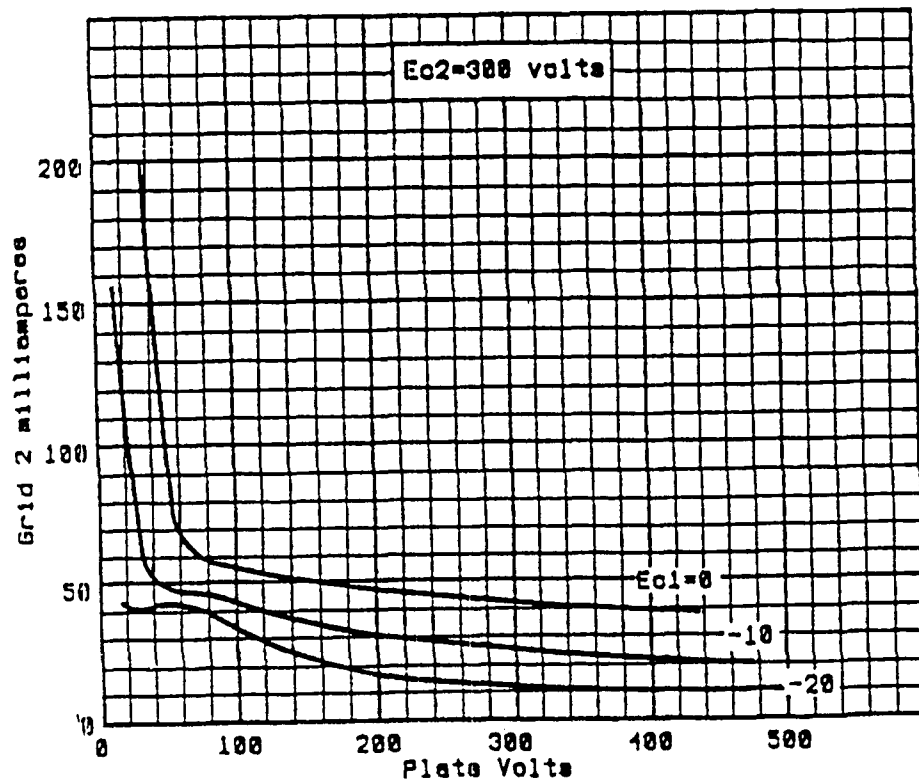
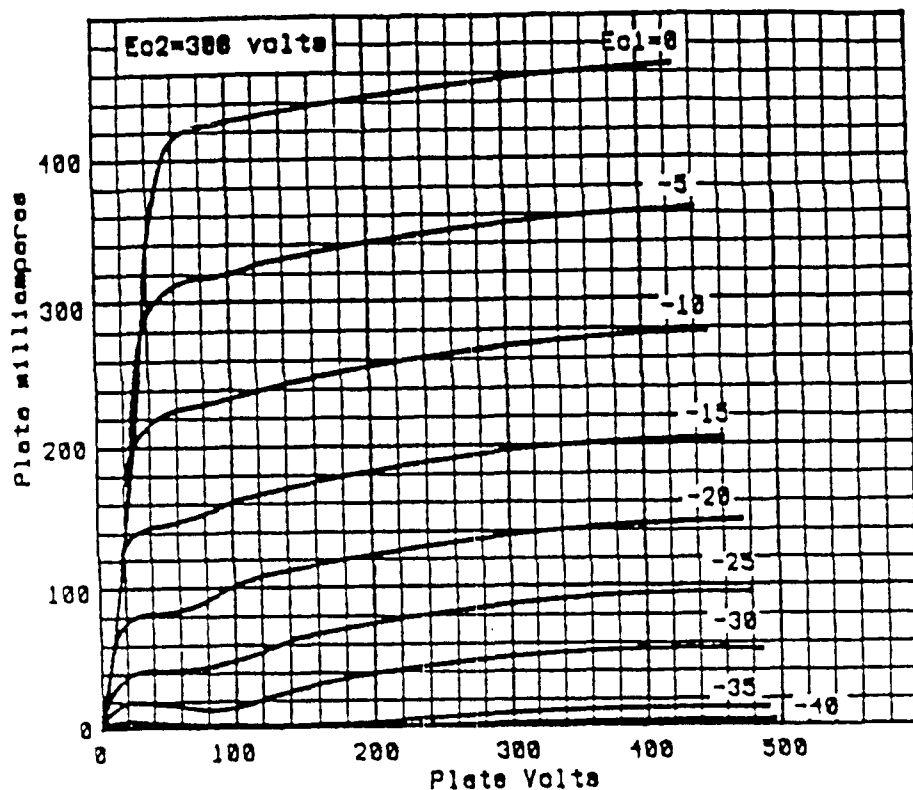
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Average Characteristic Curves





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Output Current Scales for Matching

No:		No:	
1.	86.0 mA - 89.0 mA	6.	101.1 mA - 104.0 mA
2.	89.1 mA - 92.0 mA	7.	104.1 mA - 107.0 mA
3.	92.1 mA - 95.0 mA	8.	107.1 mA - 110.0 mA
4.	95.1 mA - 98.0 mA	9.	110.1 mA - 113.0 mA
5.	98.1 mA - 101.0 mA	10.	113.1 mA - 116.0 mA