# GU-74b

## Tetrode

The GU-74b tetrode is used in wideband nontunable amplifiers and for single-sideband power amplification in stationary and mobile RF equipment. It is useful at full ratings through 250MHz. The GU-74b tetrode is generally considered to be similar to the 4CX800A, although some users report that it acts more like a tube having 900 or 1000W anode dissipation.

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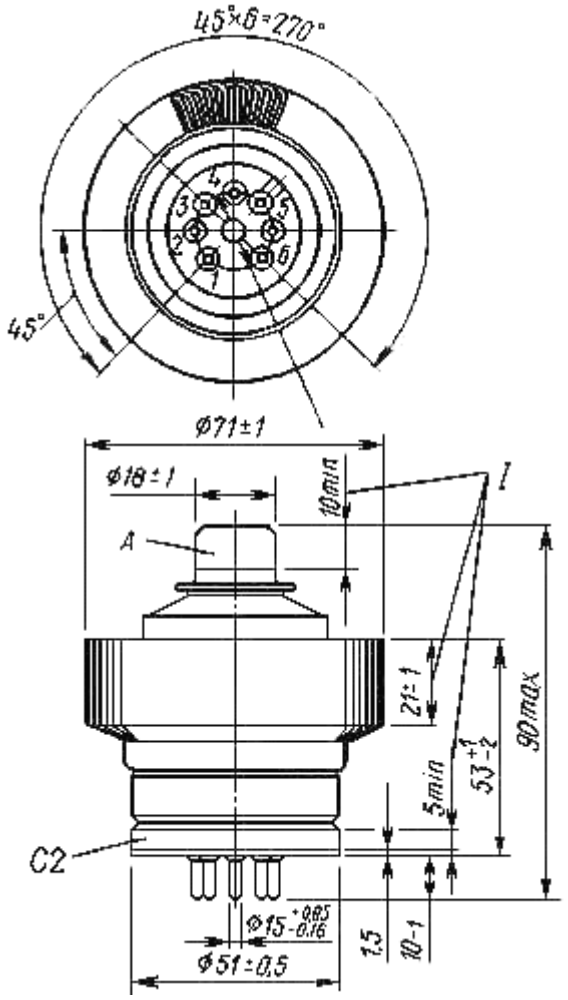
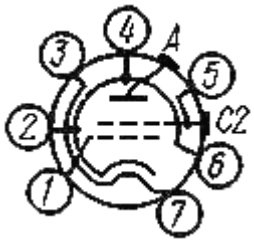
| GENERAL | |
|---|---|
| Cathode: indirectly heated, dispenser, oxide-coated. | |
| Envelope: metal-ceramic. | |
| Cooling: forced air. | |
| Height, mm, at most: | 90 |
| Diameter, mm, at most: | 71 |
| Mass, gm, at most: | 550 |








***I*** **- contact surfaces;** ***1*** **- grid 1;** ***2, 4, 6*** **- cathode;** ***3, 7*** **- heater;** ***5, C2*** **- grid 2;** ***A*** **- anode**

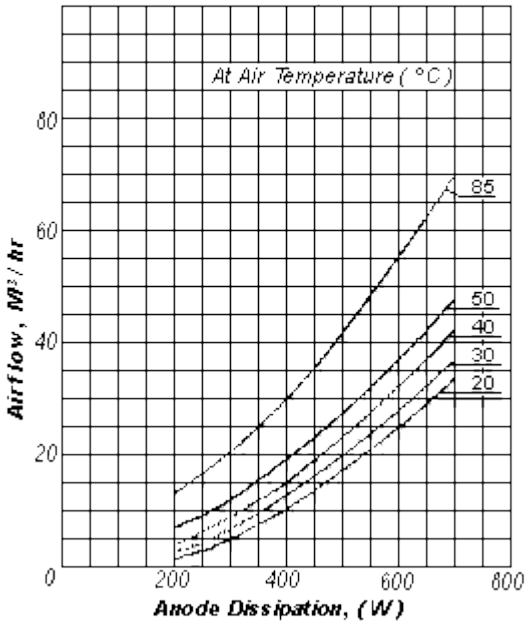
| ENVIRONMENTAL OPERATING CONDITIONS | |
|---|---|
| Vibration loads: | |
| frequency, Hz | 1-200 |
| acceleration, m/s² | 49 |
| Multiple impacts with acceleration, m/s² | 392 |
| Ambient Conditions: | |
| Temperature, °C | -10 to +55 |
| Relative humidity at up to +35 °C, % | 98 |

| NOMINAL ELECTRICAL PARAMETERS | |
|---|---|
| Heater voltage, V | 12.6 |
| Heater current, A | 3.6 |
| Mutual conductance ($V_a$ = 1KV, $V_{g2}$ = 300V, $I_a$ = 600mA, change in $V_{g1}$ = 2.5V), mA/V: | 32.5 |
| Anode current ($I_a$) with $V_a$ = 2.5KV, $V_{g2}$ = 300V, A: | >1.4 |
| Negative bias ($V_{g1}$) with $V_a$ = 1KV, $V_{g2}$ = 300V, $I_a$ = 600mA, V: | 18-32 |
| Negative cutoff bias ($V_{g1}$) with $V_a$ = 1KV, $V_{g2}$ = 300V, $I_a$ = 15mA, V: | 90 |
| input capacitance, pF | 51 |
| output capacitance, at most, pF | 11 |
| transfer capacitance, pF | <0.09 |
| Warm up time, s: | <150 |
| $AB_1$ Output power, $V_a$ = 2KV, $V_{g1}$ = -60V, $V_{g2}$ = 300V, $I_{g2}$ < 50mA, Freq. 0.1-1.0 MHz, W: | >550 |
| 3rd-order energy relative to carrier, $V_a$ = 2KV, $V_{g2}$ = 300V, $I_{g2}$ < 50mA, $V_{g1}$ = -70V, dB: | -28 |
| 5th-order energy relative to carrier, $V_a$ = 2KV, $V_{g2}$ = 300V, $I_{g2}$ < 50mA, $V_{g1}$ = -70V, dB: | -28 |
| Designed Tube Life (hours) | >1500 |

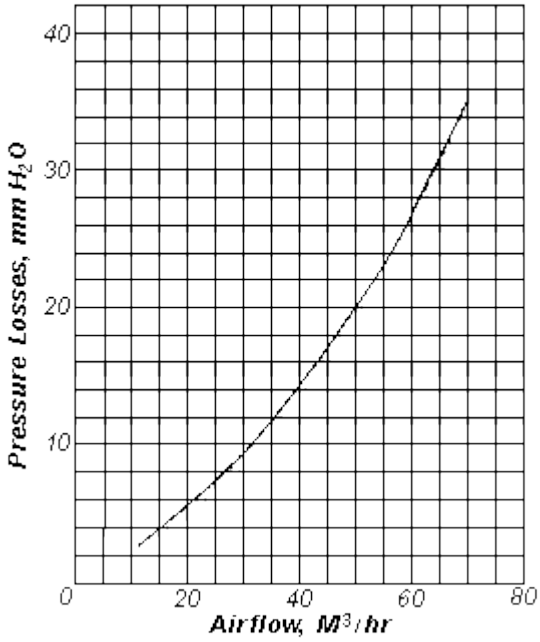
| ELECTRICAL PARAMETER LIMITS | |
|---|---|
| Heater voltage, V | 11.9-13.3 |
| Heater current, A | 3.3-3.9 |
| input capacitance, pF | 46-56 |
| output capacitance, pF | 9-13 |
| Maximum CW Anode voltage ($V_a$), KV: | 2 |
| Maximum Instantaneous value Anode voltage ($V_a$), KV: | 4 |
| "Maximum" Control Grid voltage ($V_{g1}$), V | -150 |
| Maximum Screen Grid voltage ($V_{g2}$), V | 300 |
| CW cathode current ($I_c$), A: | 0.75 |
| Peak cathode current ($I_c$), A: | 2.5 |
| Anode Dissipation, W: | 600 |
| Screen Grid (G2) Dissipation, W: | 15 |
| Control Grid (G1) Dissipation, W: | 2 |
| Frequency, MHz: | <250 |

**Airflow Rate vs Anode Dissipation**

**Maximum anode Temperature 200°C**



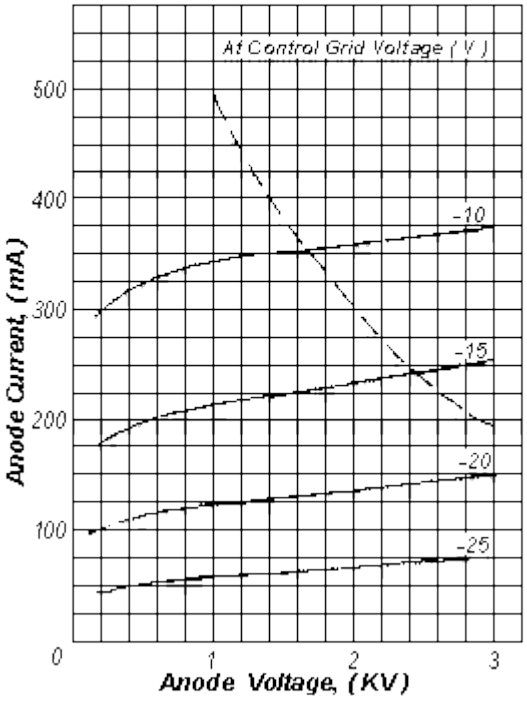

**Pressure Losses in Radiator vs Airflow Rate**




**Averaged Anode Charactreristics**
**(for voltage regulation application)**

— — — Maximum Anode Dissipation

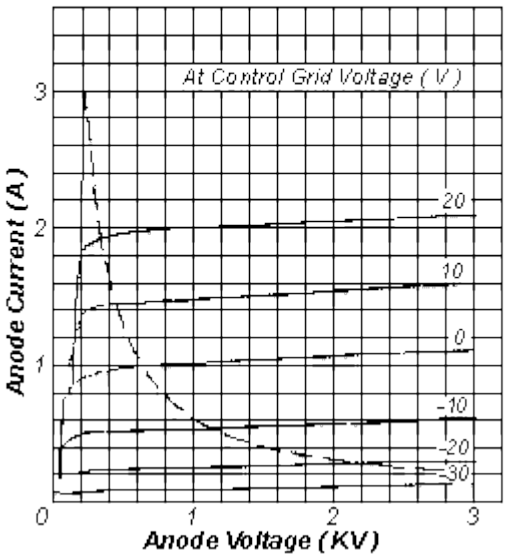
Filament @ 12.6 V, Screen Grid @ 150 V




**Averaged Anode characteristics:**

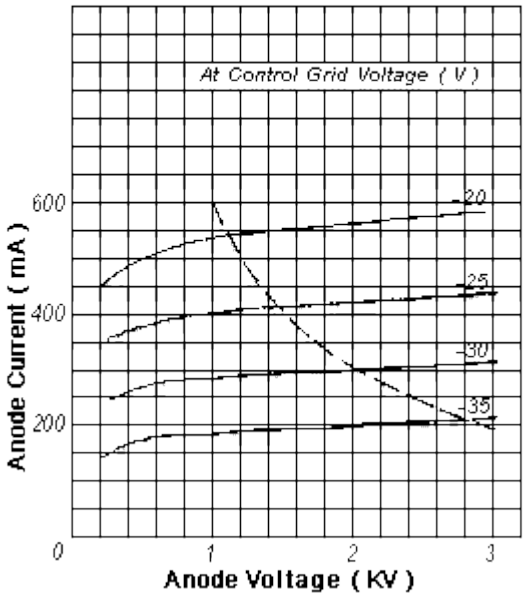
— — — Maximum anode dissipation

Filament @ 12.6 V, Screen Grid @ 200 V



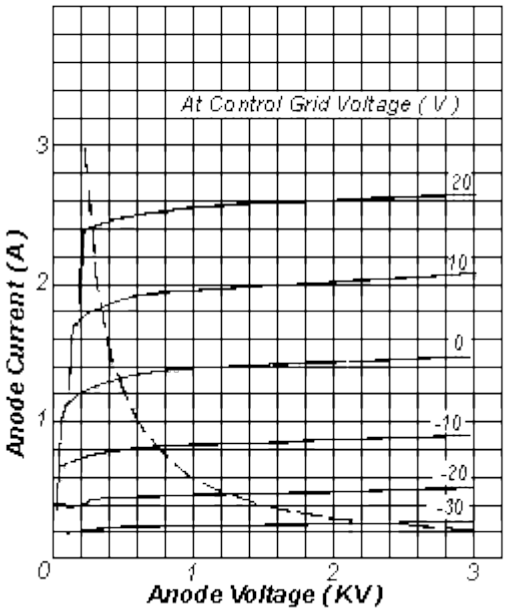
**Averaged Anode Charactreristics**
**(for voltage regulation application)**

— — — Maximum Anode Dissipation
Filament @ 12.6 V, Screen Grid @ 250 V



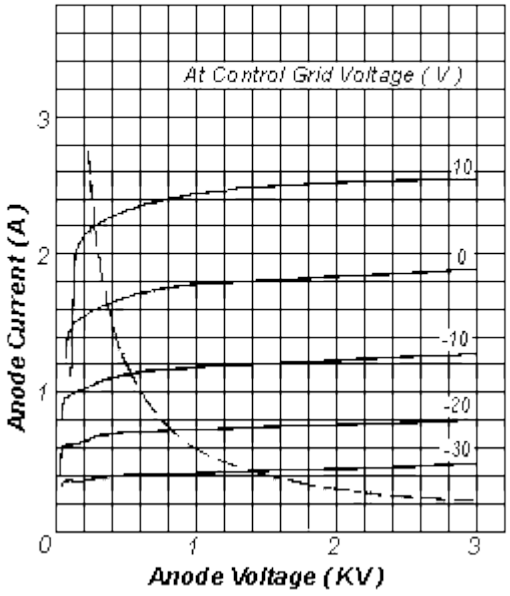

**Averaged Anode characteristics:**

— — — Maximum anode dissipation
Filament @ 12.6 V, Screen Grid @ 250 V



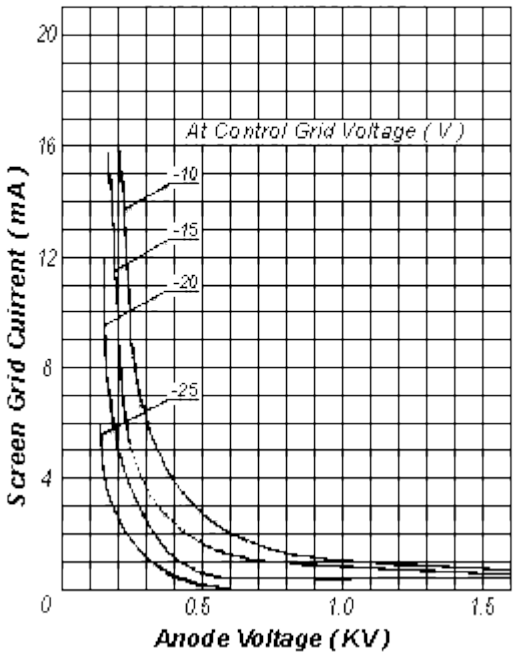

**Averaged Anode characteristics:**

— — — Maximum anode dissipation
Filament @ 12.6 V, Screen Grid @ 300 V

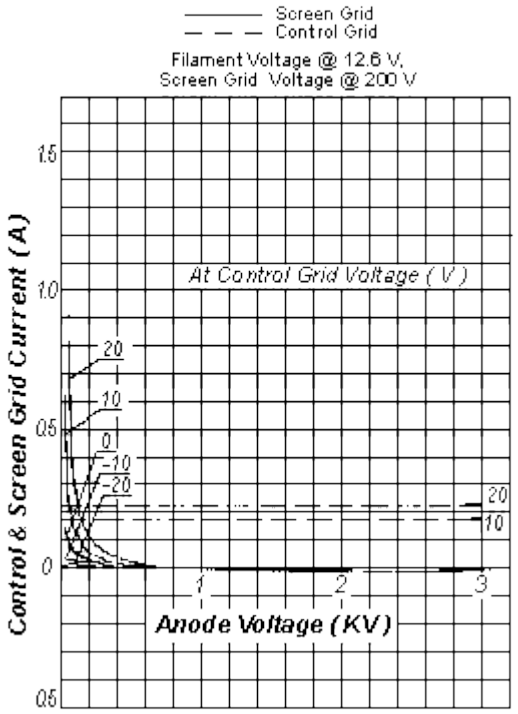



**Averaged Grid-Anode Characteristics**
**(for voltage regulation applications):**

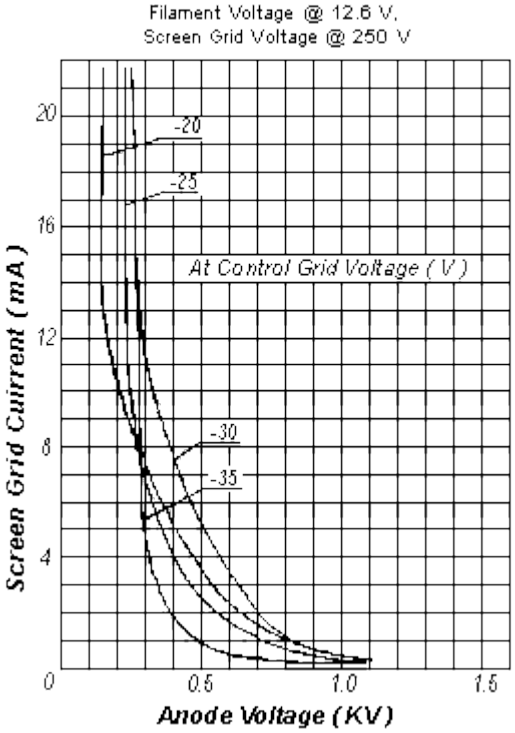
Filament Voltage @ 12.6 V,
Screen Grid Voltage @ 150 V



**Averaged Grid-Anode Characteristics:**




**Averaged Grid-Anode Characteristics (for voltage regulation applications):**




**Averaged Grid-Anode Characteristics:**