

ELECTRONIC TUBE REFERENCE

# GMI32B1

Specialized - Switching Tube electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION  
CONSTRUCTION  
TETRODE

Russian high-power tetrode designed for pulse-modulator or pulse-power switching service in RF equipment, controlling high-voltage, high-current pulses rather than continuous linear amplification.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | —                 | BASE PINS            | —             |
| NOMINAL HEATER      | 27 V / —          | PARALLEL HEATER      | — / —         |
| HEATING             | Indirect          | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

## SECTION RATINGS

|                                                                                                                              |         |
|------------------------------------------------------------------------------------------------------------------------------|---------|
| SECTION1 Tetrode                                                                                                             |         |
| MAXIMUM PLATE VOLTAGE                                                                                                        | 40000 V |
| Promoted-field audit performed from English ratings/characteristics; detailed electrical values retained in parameter table. |         |

The GMI-32B-1 tetrode is used as a pulse power switch in RF equipment and is forced-air cooled.

## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

# 1968 Electronintorg

Published test conditions and operating points. Values on this page are preserved as reported by this source.

## 1968 ELECTRONINTORG

## Section 1 · Tetrode

| OTHER                   |                 |                                                                                              |
|-------------------------|-----------------|----------------------------------------------------------------------------------------------|
| PARAMETER               | PUBLISHED VALUE | CONDITION / NOTE                                                                             |
| pulse N [1]             | 32              | The TMWN-32B6-1 tetrode is used as a pulse N                                                 |
| pulse N [2]             | -1              | The TMWN-32B6-1 tetrode is used as a pulse N                                                 |
| cathode and [1]         | 25              | B125+ z5 1 - grid 2; 2 - cathode and                                                         |
| cathode and [2]         | 1               | B125+ z5 1 - grid 2; 2 - cathode and                                                         |
| cathode and [3]         | 2               | B125+ z5 1 - grid 2; 2 - cathode and                                                         |
| cathode and [4]         | 2               | B125+ z5 1 - grid 2; 2 - cathode and                                                         |
| grid [1]                | 3               | heater; 3 — heater; 4 — grid                                                                 |
| grid [2]                | 4               | heater; 3 — heater; 4 — grid                                                                 |
| anode                   | 1               | 1; A-anode                                                                                   |
| temperature, °C [1]     | 392 C           | C yCKOpeHnem, m/c? 392 Ambient temperature, °C . . . . . —60to +85                           |
| temperature, °C [2]     | -60 C           | C yCKOpeHnem, m/c? 392 Ambient temperature, °C . . . . . —60to +85                           |
| temperature, °C [3]     | 85 C            | C yCKOpeHnem, m/c? 392 Ambient temperature, °C . . . . . —60to +85                           |
| voltage (ACorDC), V [1] | 27 V            | HanpsxeHnve Hakana (~ vunu =), B 27 Heater voltage (ACorDC), V . . . . . 27                  |
| voltage (ACorDC), V [2] | 27 V            | HanpsxeHnve Hakana (~ vunu =), B 27 Heater voltage (ACorDC), V . . . . . 27                  |
| grid [1]                | 4 A             | Tok aHoAa B MMynbce (NP HaNPSXKeHWsX aHoga Peak anode current (at anode voltage 4 kV, grid 2 |
| grid [2]                | 2 A             | Tok aHoAa B MMynbce (NP HaNPSXKeHWsX aHoga Peak anode current (at anode voltage 4 kV, grid 2 |
| voltage [1]             | 4 kV            | 4 kB, ceTkun BTOpOM 2,75 KB, CcMeLeHnn voltage 2.75 kV, bias voltage —850 V,                 |

| PARAMETER                      | PUBLISHED VALUE | CONDITION / NOTE                                                                      |
|--------------------------------|-----------------|---------------------------------------------------------------------------------------|
| voltage [2]                    | <b>275 kV</b>   | 4 kB, ceTkun BTOpOM 2,75 KB, CcMeLeHnn voltage 2.75 kV, bias voltage —850 V,          |
| voltage [3]                    | <b>2.75 kV</b>  | 4 kB, ceTkun BTOpOM 2,75 KB, CcMeLeHnn voltage 2.75 kV, bias voltage —850 V,          |
| voltage [4]                    | <b>-850 kV</b>  | 4 kB, ceTkun BTOpOM 2,75 KB, CcMeLeHnn voltage 2.75 kV, bias voltage —850 V,          |
| voltage [1]                    | <b>850 pF</b>   | mMuHyc 850 B, ceTku nepsoid B MMNynbce peak grid 1 voltage 270 V, reservoir capacitor |
| voltage [2]                    | <b>1 pF</b>     | mMuHyc 850 B, ceTku nepsoid B MMNynbce peak grid 1 voltage 270 V, reservoir capacitor |
| voltage [3]                    | <b>270 pF</b>   | mMuHyc 850 B, ceTku nepsoid B MMNynbce peak grid 1 voltage 270 V, reservoir capacitor |
| anode circuit), A, atleast [1] | <b>270</b>      | 270 B, HakonuTenbHO% eMKOCTH B Lienu 5 uF in anode circuit), A, atleast ..... 100     |
| anode circuit), A, atleast [2] | <b>5</b>        | 270 B, HakonuTenbHO% eMKOCTH B Lienu 5 uF in anode circuit), A, atleast ..... 100     |
| anode circuit), A, atleast [3] | <b>100</b>      | 270 B, HakonuTenbHO% eMKOCTH B Lienu 5 uF in anode circuit), A, atleast ..... 100     |
| voltage [1]                    | <b>5 A</b>      | aHoga 5 Mk®), A, He MeHee 100 Peak grid 1 current (at anode voltage 4 kV,             |
| voltage [2]                    | <b>100 A</b>    | aHoga 5 Mk®), A, He MeHee 100 Peak grid 1 current (at anode voltage 4 kV,             |
| voltage [3]                    | <b>1 A</b>      | aHoga 5 Mk®), A, He MeHee 100 Peak grid 1 current (at anode voltage 4 kV,             |
| voltage [4]                    | <b>4 A</b>      | aHoga 5 Mk®), A, He MeHee 100 Peak grid 1 current (at anode voltage 4 kV,             |
| voltage [1]                    | <b>2 kV</b>     | Tok CeTKV NepBoit B UMMY nbce grid 2 voltage 2.75 kV, bias voltage —850 V,            |
| voltage [2]                    | <b>2.75 kV</b>  | Tok CeTKV NepBoit B UMMY nbce grid 2 voltage 2.75 kV, bias voltage —850 V,            |
| voltage [3]                    | <b>-850 kV</b>  | Tok CeTKV NepBoit B UMMY nbce grid 2 voltage 2.75 kV, bias voltage —850 V,            |
| voltage [1]                    | <b>4 pF</b>     | (Npw Hanpsbxehusix aHoaa 4 KB, peak grid 1 voltage 270 V, reservoir capacitor         |
| voltage [2]                    | <b>1 pF</b>     | (Npw Hanpsbxehusix aHoaa 4 KB, peak grid 1 voltage 270 V, reservoir capacitor         |
| voltage [3]                    | <b>270 pF</b>   | (Npw Hanpsbxehusix aHoaa 4 KB, peak grid 1 voltage 270 V, reservoir capacitor         |
| anode circuit), A,atmost [1]   | <b>275</b>      | ceTku BTOnon 2,75 kB, cmeweHns 5 uF in anode circuit), A,atmost . ..... 15            |

| PARAMETER                    | PUBLISHED VALUE | CONDITION / NOTE                                                                        |
|------------------------------|-----------------|-----------------------------------------------------------------------------------------|
| anode circuit), A,atmost [2] | <b>5</b>        | ceTku BTOPon 2,75 kB, cmeweHns 5 uF in anode circuit), A,atmost . ..... 15              |
| anode circuit), A,atmost [3] | <b>15</b>       | ceTku BTOPon 2,75 kB, cmeweHns 5 uF in anode circuit), A,atmost . ..... 15              |
| grid [1]                     | <b>850 A</b>    | MuHyc 850 B, ceTku nepBoi B Peak grid 2 current (at anode voltage 4 kV, grid 2          |
| grid [2]                     | <b>2 A</b>      | MuHyc 850 B, ceTku nepBoi B Peak grid 2 current (at anode voltage 4 kV, grid 2          |
| grid [3]                     | <b>4 A</b>      | MuHyc 850 B, ceTku nepBoi B Peak grid 2 current (at anode voltage 4 kV, grid 2          |
| grid [4]                     | <b>2 A</b>      | MuHyc 850 B, ceTku nepBoi B Peak grid 2 current (at anode voltage 4 kV, grid 2          |
| grid [1]                     | <b>270 kV</b>   | nmnyrsce 270 B, HakonuTensHON eMKOCTH voltage 2.75 kV, bias voltage —850 V, peak grid 1 |
| grid [2]                     | <b>2.75 kV</b>  | nmnyrsce 270 B, HakonuTensHON eMKOCTH voltage 2.75 kV, bias voltage —850 V, peak grid 1 |
| grid [3]                     | <b>-850 kV</b>  | nmnyrsce 270 B, HakonuTensHON eMKOCTH voltage 2.75 kV, bias voltage —850 V, peak grid 1 |
| grid [4]                     | <b>1 kV</b>     | nmnyrsce 270 B, HakonuTensHON eMKOCTH voltage 2.75 kV, bias voltage —850 V, peak grid 1 |
| anode [1]                    | <b>5 pF</b>     | B Lenu aHoaa 5 Mkd), A, He bonee voltage 270 V, reservoir capacitor 5 uF in anode       |
| anode [2]                    | <b>270 pF</b>   | B Lenu aHoaa 5 Mkd), A, He bonee voltage 270 V, reservoir capacitor 5 uF in anode       |
| anode [3]                    | <b>5 pF</b>     | B Lenu aHoaa 5 Mkd), A, He bonee voltage 270 V, reservoir capacitor 5 uF in anode       |
| voltage [1]                  | <b>4 kV</b>     | (npu HanpsixxeHnax aHoga 4 kB, Negative cutoff voltage (at anode voltage 44 kV,         |
| voltage [2]                  | <b>44 kV</b>    | (npu HanpsixxeHnax aHoga 4 kB, Negative cutoff voltage (at anode voltage 44 kV,         |
| voltage [1]                  | <b>275 pF</b>   | CeTKU BTOPOW 2,75 KB, cmelleHns grid 2 voltage 2.75 kV, reservoir capacitor 0.25 u      |
| voltage [2]                  | <b>2 pF</b>     | CeTKU BTOPOW 2,75 KB, cmelleHns grid 2 voltage 2.75 kV, reservoir capacitor 0.25 u      |
| voltage [3]                  | <b>2.75 pF</b>  | CeTKU BTOPOW 2,75 KB, cmelleHns grid 2 voltage 2.75 kV, reservoir capacitor 0.25 u      |
|                              |                 |                                                                                         |

| PARAMETER                      | PUBLISHED VALUE | CONDITION / NOTE                                                                        |
|--------------------------------|-----------------|-----------------------------------------------------------------------------------------|
| voltage [4]                    | <b>0.25 pF</b>  | CeTKU BTOPOW 2,75 KB, cmelleHns grid 2 voltage 2.75 kV, reservoir capacitor 0.25 u      |
| anode circuit), atmost [1]     | <b>850</b>      | MuHyc 850 B, ceTku nepBoit B umnynbce 270 B, in anode circuit), atmost . . . ..         |
| anode circuit), atmost [2]     | <b>270</b>      | MuHyc 850 B, ceTku nepBoit B umnynbce 270 B, in anode circuit), atmost . . . ..         |
| heating time, s,atmost [1]     | <b>5 s</b>      | HaKoNUTebHOM eMKOCTU B Lieny aHoAa 5 MkD), Cathode heating time, s,atmost ..... 180     |
| heating time, s,atmost [2]     | <b>180 s</b>    | HaKoNUTebHOM eMKOCTU B Lieny aHoAa 5 MkD), Cathode heating time, s,atmost ..... 180     |
| Interelectrode capacitance, pF | <b>6 pF</b>     | A, He 6onee Interelectrode capacitance, pF:                                             |
| input [1]                      | <b>3</b>        | HanpsbkeHue 3anupaHus oTpuLarenibHoe input .. .. 140-180                                |
| input [2]                      | <b>140</b>      | HanpsbkeHue 3anupaHus oTpuLarenibHoe input .. .. 140-180                                |
| input [3]                      | <b>-180</b>     | HanpsbkeHue 3anupaHus oTpuLarenibHoe input .. .. 140-180                                |
| output [1]                     | <b>44</b>       | (npu HanpshkeHunx aHoaa 44 kB, ceTku output .. ... 20-33                                |
| output [2]                     | <b>20</b>       | (npu HanpshkeHunx aHoaa 44 kB, ceTku output .. ... 20-33                                |
| output [3]                     | <b>-33</b>      | (npu HanpshkeHunx aHoaa 44 kB, ceTku output .. ... 20-33                                |
| voltage (ACorDC),V [1]         | <b>243 V</b>    | Hanpsbkenve Hakana (~wnm =),B ..... 24,3-29,7 Heater voltage (ACorDC),V ..... 24.3-29.7 |
| voltage (ACorDC),V [2]         | <b>-297 V</b>   | Hanpsbkenve Hakana (~wnm =),B ..... 24,3-29,7 Heater voltage (ACorDC),V ..... 24.3-29.7 |
| voltage (ACorDC),V [3]         | <b>24.3 V</b>   | Hanpsbkenve Hakana (~wnm =),B ..... 24,3-29,7 Heater voltage (ACorDC),V ..... 24.3-29.7 |
| voltage (ACorDC),V [4]         | <b>-29.7 V</b>  | Hanpsbkenve Hakana (~wnm =),B ..... 24,3-29,7 Heater voltage (ACorDC),V ..... 24.3-29.7 |
| voltage, KV ..... i [1]        | <b>40 kV</b>    | Haubonblwee nanpsxenue aHoga, kB ..... 40 Anode voltage, KV ..... i 40                  |
|                                |                 |                                                                                         |

| PARAMETER                         | PUBLISHED VALUE | CONDITION / NOTE                                                                                  |
|-----------------------------------|-----------------|---------------------------------------------------------------------------------------------------|
| voltage, KV .....<br>... i [2]    | <b>40 kV</b>    | Haubonblwee nanpsxenue aHoga, kB ..... 40<br>Anode voltage, KV ..... i 40                         |
| voltage, absolute value, V<br>[1] | <b>275 V</b>    | BTOPOW, KB ... .. 2,75 Bias voltage,<br>absolute value, V. ... -850                               |
| voltage, absolute value, V<br>[2] | <b>-850 V</b>   | BTOPOW, KB ... .. 2,75 Bias voltage,<br>absolute value, V. ... -850                               |
| voltage, V                        | <b>1 V</b>      | Hanbonbluee HanpsXXeHne CMeLeHUs Grid 1<br>excessvoltage, V. ....                                 |
| Dissipation, W                    | <b>-850 W</b>   | (no abconioTHoM BenmumnKe), B ... -850<br>Dissipation, W:                                         |
| anode [1]                         | <b>2</b>        | Haubonbluee Hanps>xeHue NpesbiLLeHnst<br>anode ... 2:10°                                          |
| anode [2]                         | <b>10</b>       | Haubonbluee Hanps>xeHue NpesbiLLeHnst<br>anode ... 2:10°                                          |
| grid [1]                          | <b>1</b>        | PacceuBaemas HaunbonbLIas MOWHOCTb, BT:<br>grid 1 .. 7                                            |
| grid [2]                          | <b>7</b>        | PacceuBaemas HaunbonbLIas MOWHOCTb, BT:<br>grid 1 .. 7                                            |
| current, A,atmost [1]             | <b>2 A</b>      | aHOAOM . ..... P 2:10° Heater starting current,<br>A,atmost ..... 20                              |
| current, A,atmost [2]             | <b>10 A</b>     | aHOAOM . ..... P 2:10° Heater starting current,<br>A,atmost ..... 20                              |
| current, A,atmost [3]             | <b>20 A</b>     | aHOAOM . ..... P 2:10° Heater starting current,<br>A,atmost ..... 20                              |
| current at [1]                    | <b>35 A</b>     | CETKOM BTOPOM ..o vetvi i e i aniass 35 Peak<br>cathode current at 1/duty factor 200, A .. ... 59 |
| current at [2]                    | <b>1 A</b>      | CETKOM BTOPOM ..o vetvi i e i aniass 35 Peak<br>cathode current at 1/duty factor 200, A .. ... 59 |
| current at [3]                    | <b>200 A</b>    | CETKOM BTOPOM ..o vetvi i e i aniass 35 Peak<br>cathode current at 1/duty factor 200, A .. ... 59 |
| current at [4]                    | <b>59 A</b>     | CETKOM BTOPOM ..o vetvi i e i aniass 35 Peak<br>cathode current at 1/duty factor 200, A .. ... 59 |
| anode                             | <b>1</b>        | Haubonbwuii TOk kaToaa B UMNynLce<br>Minimum 1/duty factor at peak anode                          |
| current [1]                       | <b>200 A</b>    | NPU CKBAXKHOCTN 200, A .. ... 59<br>current 100 A ... .. e 500                                    |
| current [2]                       | <b>59 A</b>     | NPU CKBAXKHOCTN 200, A .. ... 59<br>current 100 A ... .. e 500                                    |
| current [3]                       | <b>100 A</b>    | NPU CKBAXKHOCTN 200, A .. ... 59<br>current 100 A ... .. e 500                                    |

| PARAMETER                    | PUBLISHED VALUE | CONDITION / NOTE                                                   |
|------------------------------|-----------------|--------------------------------------------------------------------|
| current [4]                  | <b>500 A</b>    | NPU CKBAXKHOC TN 200, A .. ... .. 59<br>current 100 A ... .. e 500 |
| anode, bulb and stem, °C [1] | <b>180 C</b>    | . 180 Temperature at anode, bulb and stem, °C<br>..... 150         |
| anode, bulb and stem, °C [2] | <b>150 C</b>    | . 180 Temperature at anode, bulb and stem, °C<br>..... 150         |
| Grid                         | <b>1</b>        | '1's Averaged Characteristic Curves Showing<br>Grid 1 N            |
| Voltage [1]                  | <b>18 V</b>     | I Cutoff Voltage versus Anode Voltage 18 750 \\\<br>173            |
| Voltage [2]                  | <b>750 V</b>    | I Cutoff Voltage versus Anode Voltage 18 750 \\\<br>173            |
| Voltage [3]                  | <b>173 V</b>    | I Cutoff Voltage versus Anode Voltage 18 750 \\\<br>173            |