



## ELECTRONIC TUBE REFERENCE

## 7F64R

Power - Tetrode (NOT beam) (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL  
DATA

**1 SECTION**  
CONSTRUCTION  
**TETRODE**

Forced-air-cooled VHF power tetrode for FM and television amplifier service. Rugged coaxial ceramic-metal construction and a directly heated mesh filament support demanding broadcast operation.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | —                 | BASE PINS            | —             |
| NOMINAL HEATER      | 6 V / 75 A        | PARALLEL HEATER      | — / —         |
| HEATING             | Direct            | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

## SECTION RATINGS

|                                                                                                                           |         |
|---------------------------------------------------------------------------------------------------------------------------|---------|
| <b>SECTION1</b> Tetrode                                                                                                   |         |
| TRANSCONDUCTANCE                                                                                                          | 0.026 S |
| MAXIMUM PLATE VOLTAGE                                                                                                     | 7000 V  |
| MAXIMUM PLATE DISSIPATION                                                                                                 | 4000 W  |
| <i>Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.</i> |         |

The 7F64R is a forced-air-cooled power tetrode for VHF, FM, and television amplifier service, using rugged coaxial ceramic-to-metal construction and a directly heated mesh filament.

## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

## 1971 NEC

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

1971 NEC

## Section 1 · Tetrode

| OTHER                                                  |                 |                                                                |
|--------------------------------------------------------|-----------------|----------------------------------------------------------------|
| PARAMETER                                              | PUBLISHED VALUE | CONDITION / NOTE                                               |
| Filament; Thoriated Tungsten Go : Grid Ne              | 2               | Filament; Thoriated Tungsten Go : Grid Ne.2                    |
| Current two.iiiiiiennecencnans                         | 68 A            | Current two.iiiiiiennecencnans 68 amps                         |
| Maximum Starting Current                               | 140 A           | Maximum Starting Current ... 140 amps                          |
| Anolification Iy actor, Crid No                        | 2               | Anolification Iy actor, Crid No.2 to Grid Ho.) +veeee          |
| Grid No.1 to Plate<br>.....,.....V                     | 0.57            | Grid No.1 to Plate .....V<br>0.57 uF                           |
| Filament to Plate<br>teteerecicreetietasetnsannans     | 0.08            | Filament to Plate<br>teteerecicreetietasetnsannans 0.08 uF     |
| Grid No [1]                                            | 2               | Grid No.2 to Platé i<br>sesesesseereatecseosensans 17 uuF      |
| Grid No [2]                                            | 17              | Grid No.2 to Platé i<br>sesesesseereatecseosensans 17 uuF      |
| Grid No.1 t0 Filament<br>«.oueeeeeesesneeeessnness     | 48              | Grid No.1 t0 Filament<br>«.oueeeeeesesneeeessnness 48 pyF      |
| Grid No.1 to Grid No [1]                               | 2               | Grid No.1 to Grid No.2<br>severinverennnscoonnnonans 70 pp¥    |
| Grid No.1 to Grid No [2]                               | 70              | Grid No.1 to Grid No.2<br>severinverennnscoonnnonans 70 pp¥    |
| Frequency for Maximum Ratings<br>...ceeeecsecseccenose | 250 MHz         | Frequency for Maximum Ratings<br>...ceeeecsecseccenose 250 MHz |
| Maximum incoming air temperature<br>.....cccccieeee    | 40              | Maximum incoming air temperature<br>.....cccccieeee 40         |
| Maximum radiator temperature<br>..... cecnae           | 250             | Maximum radiator temperature .....<br>cecnae 250               |

| PARAMETER                                               | PUBLISHED VALUE | CONDITION / NOTE                                                                   |
|---------------------------------------------------------|-----------------|------------------------------------------------------------------------------------|
| Maximum seal temperature<br>..iiecieeeceeeceesees       | 250             | Maximum seal temperature<br>..iiecieeeceeeceesees 250                              |
| DC Plate voltage [1]                                    | 8 V             | DC Plate voltage 8 0060000000000<br>0000s006000s000s0st00 7000 VoltS               |
| DC Plate voltage [2]                                    | 600000000000 V  | DC Plate voltage 8 0060000000000<br>0000s006000s000s0st00 7000 VoltS               |
| DC Plate voltage [3]                                    | 0 V             | DC Plate voltage 8 0060000000000<br>0000s006000s000s0st00 7000 VoltS               |
| DC Plate voltage [4]                                    | 6000 V          | DC Plate voltage 8 0060000000000<br>0000s006000s000s0st00 7000 VoltS               |
| DC Plate voltage [5]                                    | 0 V             | DC Plate voltage 8 0060000000000<br>0000s006000s000s0st00 7000 VoltS               |
| DC Plate voltage [6]                                    | 0 V             | DC Plate voltage 8 0060000000000<br>0000s006000s000s0st00 7000 VoltS               |
| DC Plate voltage [7]                                    | 7000 V          | DC Plate voltage 8 0060000000000<br>0000s006000s000s0st00 7000 VoltS               |
| DC Grid N'DCZ voltage ® [1]                             | 9 V             | DC Grid N'DCZ voltage ® 9 0 08 0 6 08<br>00 B S E OSSO OO E NSO PN s 1200<br>volts |
| DC Grid N'DCZ voltage ® [2]                             | 0 V             | DC Grid N'DCZ voltage ® 9 0 08 0 6 08<br>00 B S E OSSO OO E NSO PN s 1200<br>volts |
| DC Grid N'DCZ voltage ® [3]                             | 8 V             | DC Grid N'DCZ voltage ® 9 0 08 0 6 08<br>00 B S E OSSO OO E NSO PN s 1200<br>volts |
| DC Grid N'DCZ voltage ® [4]                             | 0 V             | DC Grid N'DCZ voltage ® 9 0 08 0 6 08<br>00 B S E OSSO OO E NSO PN s 1200<br>volts |
| DC Grid N'DCZ voltage ® [5]                             | 6 V             | DC Grid N'DCZ voltage ® 9 0 08 0 6 08<br>00 B S E OSSO OO E NSO PN s 1200<br>volts |
| DC Grid N'DCZ voltage ® [6]                             | 8 V             | DC Grid N'DCZ voltage ® 9 0 08 0 6 08<br>00 B S E OSSO OO E NSO PN s 1200<br>volts |
| DC Grid N'DCZ voltage ® [7]                             | 0 V             | DC Grid N'DCZ voltage ® 9 0 08 0 6 08<br>00 B S E OSSO OO E NSO PN s 1200<br>volts |
| DC Grid N'DCZ voltage ® [8]                             | 1200 V          | DC Grid N'DCZ voltage ® 9 0 08 0 6 08<br>00 B S E OSSO OO E NSO PN s 1200<br>volts |
| Max. Signal DC Plate Current<br>...eciecesseseercsnceoe | 2.8 A           | Max. Signal DC Plate Current<br>...eciecesseseercsnceoe 2.8 amps                   |

| PARAMETER                                                  | PUBLISHED VALUE | CONDITION / NOTE                                                            |
|------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------|
| Plate Dissipation ® [1]                                    | 5 kW            | Plate Dissipation ® 5 5 0 % 80 00 900E<br>T O SO 000 DL SO 00 OS e RSN 4 kw |
| Plate Dissipation ® [2]                                    | 5 kW            | Plate Dissipation ® 5 5 0 % 80 00 900E<br>T O SO 000 DL SO 00 OS e RSN 4 kw |
| Plate Dissipation ® [3]                                    | 0 kW            | Plate Dissipation ® 5 5 0 % 80 00 900E<br>T O SO 000 DL SO 00 OS e RSN 4 kw |
| Plate Dissipation ® [4]                                    | 80 kW           | Plate Dissipation ® 5 5 0 % 80 00 900E<br>T O SO 000 DL SO 00 OS e RSN 4 kw |
| Plate Dissipation ® [5]                                    | 0 kW            | Plate Dissipation ® 5 5 0 % 80 00 900E<br>T O SO 000 DL SO 00 OS e RSN 4 kw |
| Plate Dissipation ® [6]                                    | 900 kW          | Plate Dissipation ® 5 5 0 % 80 00 900E<br>T O SO 000 DL SO 00 OS e RSN 4 kw |
| Plate Dissipation ® [7]                                    | 4 kW            | Plate Dissipation ® 5 5 0 % 80 00 900E<br>T O SO 000 DL SO 00 OS e RSN 4 kw |
| Grid No [1]                                                | 2 W             | Grid No.2 Dissipation<br>..c.eseeceescscscscscscoensasasn 150<br>watts      |
| Grid No [2]                                                | 150 W           | Grid No.2 Dissipation<br>..c.eseeceescscscscscscoensasasn 150<br>watts      |
| DC Plate VoltaBge<br>c.iveeeceesscecasosansssanscanannsns  | 5000            | DC Plate VoltaBge<br>c.iveeeceesscecasosansssanscanannsns<br>5000 volts     |
| DC Grid No [1]                                             | 2 V             | .DC Grid No.2 Voltage<br>l..... 900 volts                                   |
| DC Grid No [2]                                             | 900 V           | .DC Grid No.2 Voltage<br>l..... 900 volts                                   |
| DC Grid No.1 V0ltAgBEe<br>.cveceesscancnvsencvvanscsanss = | 125             | DC Grid No.1 V0ltAgBEe<br>.cveceesscancnvsencvvanscsanss<br>=125 volts      |
| Peak RF Grid No.1 Voltage<br>..iieeecedenesrecoasecnnsns   | 125 V           | Peak RF Grid No.1 Voltage<br>..iieeecedenesrecoasecnnsns 125 volts          |
| Max. Signal DC Plate Current<br>..eeiveceecsscscacance     | 1.58 A          | Max. Signal DC Plate Current<br>..eeiveceecsscscacance 1.58 amps            |
| Zero-Signal DC Plate Current<br>...cviivviecvnsonsnoces    | 200 A           | Zero-Signal DC Plate Current<br>...cviivviecvnsonsnoces 200 mA              |
| Max. Signal DC Grid Yo [1]                                 | 2 A             | Max. Signal DC Grid Yo.2 Current .....<br>cscteserarsecea 35 mA             |
| Max. Signal DC Grid Yo [2]                                 | 35 A            | Max. Signal DC Grid Yo.2 Current .....<br>cscteserarsecea 35 mA             |
|                                                            |                 |                                                                             |

| PARAMETER                                                | PUBLISHED VALUE | CONDITION / NOTE                                                            |
|----------------------------------------------------------|-----------------|-----------------------------------------------------------------------------|
| Max. Signal Driving Power (approx.)<br>ccccsssscassannan | 0 W             | Max. Signal Driving Power (approx.)<br>ccccsssscassannan 0 watts            |
| Max. Signal Plate Power Output ( [1]                     | 2 kW            | Max. Signal Plate Power Output<br>(2pprox.) ceeevveeeeee. 5.1 kW            |
| Max. Signal Plate Power Output ( [2]                     | 5.1 kW          | Max. Signal Plate Power Output<br>(2pprox.) ceeevveeeeee. 5.1 kW            |
| DC Plate Voltage ..... S                                 | 7000 V          | DC Plate Voltage ..... S 7000 volts                                         |
| DC Grid No [1]                                           | 2               | DC Grid No.2 VoltaAgZe<br>cieeieecscsostssanssoosonosnaonssne<br>1200 volts |
| DC Grid No [2]                                           | 1200            | DC Grid No.2 VoltaAgZe<br>cieeieecscsostssanssoosonosnaonssne<br>1200 volts |
| DC Plate Current<br>.....cevescaccacssnsnsorssasocnnses  | 2.8 A           | DC Plate Current<br>.....cevescaccacssnsnsorssasocnnses<br>2.8 amps         |
| Plate Dissipation<br>.ceieeeeeecscscsetscsersrosesnsns   | 4 kW            | Plate Dissipation<br>.ceieeeeeecscscsetscsersrosesnsns . 4<br>kW            |
| Grid No [1]                                              | 2 W             | Grid No.2 Dissipation<br>.....cieieeviccsnocacsssescnee 150 watts           |
| Grid No [2]                                              | 150 W           | Grid No.2 Dissipation<br>.....cieieeviccsnocacsssescnee 150 watts           |
| Grid NO.1 DiSSipatiOil € [1]                             | 0               | Grid NO.1 DiSSipatiOil €00 st s rss0<br>000t ersctets sy SO V&tts           |
| Grid NO.1 DiSSipatiOil € [2]                             | 0               | Grid NO.1 DiSSipatiOil €00 st s rss0<br>000t ersctets sy SO V&tts           |
| DC Plate Voltage<br>.....;.....;                         | 4500 V          | DC Plate Voltage .....;.....;<br>4500 volts                                 |
| DC Grid No [1]                                           | 2 V             | DC Grid No.2 Voltage<br>ceeeeesseresccssnassaccansans 500<br>volts          |
| DC Grid No [2]                                           | 500 V           | DC Grid No.2 Voltage<br>ceeeeesseresccssnassaccansans 500<br>volts          |
| DC Grid No.1 Voltagev                                    | -70 V           | DC Grid No.1<br>Voltagev..... -70 volts                                     |
| DC Crid No                                               | 2 A             | DC Crid No.2 Current:                                                       |
| DC Plate Voltage<br>c.vivieecreeacsvesessosesnnssonsanes | 7000 V          | DC Plate Voltage<br>c.vivieecreeacsvesessosesnnssonsanes<br>7000 volts      |
|                                                          |                 |                                                                             |

| PARAMETER                                                  | PUBLISHED VALUE | CONDITION / NOTE                                                      |
|------------------------------------------------------------|-----------------|-----------------------------------------------------------------------|
| DC Grid Yo [1]                                             | <b>2 V</b>      | DC Grid Yo.2 Voltage ..... cecesscsennea<br>sescvasssenans 1200 volts |
| DC Grid Yo [2]                                             | <b>1200 V</b>   | DC Grid Yo.2 Voltage ..... cecesscsennea<br>sescvasssenans 1200 volts |
| DC Grid No.l Voltage eieeenans<br>;..... ceesen            | <b>-500 V</b>   | DC Grid No.l Voltage eieeenans ;.....<br>..... ceesen -500 volts      |
| DC Plate Current ...ceeeceveseasos<br>Ceteteceans ceeeen   | <b>2.2 A</b>    | DC Plate Current ...ceeeceveseasos<br>Ceteteceans ceeeen 2.2 amps     |
| Plate Dissipation ...voeeceess<br>crsecssans coennes reeen | <b>4 kW</b>     | Plate Dissipation ...voeeceess<br>crsecssans coennes reeen 4 kW       |
| Crid ' [1]                                                 | <b>0.2 W</b>    | Crid '0.2 Dissipation seeveeeeeenn..<br>Cereeniieaeas 150 watts       |
| Crid ' [2]                                                 | <b>150 W</b>    | Crid '0.2 Dissipation seeveeeeeenn..<br>Cereeniieaeas 150 watts       |
| Grid No.l Dissipation ...ie [1]                            | <b>0 W</b>      | Grid No.l Dissipation ...ie.0v0se<br>creenoans cesoensas oo 50 watts  |
| Grid No.l Dissipation ...ie [2]                            | <b>50 W</b>     | Grid No.l Dissipation ...ie.0v0se<br>creenoans cesoensas oo 50 watts  |
| DC Plate Voltage<br>.ceeecececnncnncnsns ceses [1]         | <b>5000 V</b>   | DC Plate Voltage<br>.ceeecececnncnncnsns ceses 5000<br>6000 volis     |
| DC Plate Voltage<br>.ceeecececnncnncnsns ceses [2]         | <b>6000 V</b>   | DC Plate Voltage<br>.ceeecececnncnncnsns ceses 5000<br>6000 volis     |
| DC Grid No [1]                                             | <b>2 V</b>      | DC Grid No.2 Voltage ...eeceiceaes<br>chesserseneae 500 500 volts     |
| DC Grid No [2]                                             | <b>500 V</b>    | DC Grid No.2 Voltage ...eeceiceaes<br>chesserseneae 500 500 volts     |
| DC Grid No [3]                                             | <b>500 V</b>    | DC Grid No.2 Voltage ...eeceiceaes<br>chesserseneae 500 500 volts     |
| DC Grid No.l Voltage ..iveevece<br>crerecessasnas ~ [1]    | <b>170 V</b>    | DC Grid No.l Voltage ..iveevece<br>crerecessasnas ~170 -185 volts     |
| DC Grid No.l Voltage ..iveevece<br>crerecessasnas ~ [2]    | <b>-185 V</b>   | DC Grid No.l Voltage ..iveevece<br>crerecessasnas ~170 -185 volts     |
| Peak RF Grid Yo.l Voltage v.....<br>ceveerees [1]          | <b>240 V</b>    | Peak RF Grid Yo.l Voltage v.....<br>ceveerees. 240 275 voltis         |
| Peak RF Grid Yo.l Voltage v.....<br>ceveerees [2]          | <b>275 V</b>    | Peak RF Grid Yo.l Voltage v.....<br>ceveerees. 240 275 voltis         |
| DC Plate Current .sececeveceecss<br>cetrecrasiteans [1]    | <b>1.3 A</b>    | DC Plate Current .sececeveceecss<br>cetrecrasiteans 1.3Q 1.71 amps    |
|                                                            |                 |                                                                       |

| PARAMETER                                                             | PUBLISHED VALUE | CONDITION / NOTE                                                          |
|-----------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------|
| DC Plate Current .sececeveceecss<br>cetrecrasiteans [2]               | <b>1.71 A</b>   | DC Plate Current .sececeveceecss<br>cetrecrasiteans 1.3Q 1.71 amps        |
| DC Crid Mo [1]                                                        | <b>2 A</b>      | DC Crid Mo.2 Current<br>...eeecescecesecssssccasss 60 78                  |
| DC Crid Mo [2]                                                        | <b>60 A</b>     | DC Crid Mo.2 Current<br>...eeecescecesecssssccasss 60 78                  |
| DC Crid Mo [3]                                                        | <b>78 A</b>     | DC Crid Mo.2 Current<br>...eeecescecesecssssccasss 60 78                  |
| DC Grid Mo.l Current ..eeeeeeeseecens<br>cecrecnnes [1]               | <b>100 A</b>    | DC Grid Mo.l Current ..eeeeeeeseecens<br>cecrecnnes 100 140               |
| DC Grid Mo.l Current ..eeeeeeeseecens<br>cecrecnnes [2]               | <b>140 A</b>    | DC Grid Mo.l Current ..eeeeeeeseecens<br>cecrecnnes 100 140               |
| Driving Power (aprox.) (Hote [1])                                     | <b>1 W</b>      | Driving Power (aprox.) (Hote 1)<br>+eviiiueenns 22.8 36.3                 |
| Driving Power (aprox.) (Hote [2])                                     | <b>22.8 W</b>   | Driving Power (aprox.) (Hote 1)<br>+eviiiueenns 22.8 36.3                 |
| Driving Power (aprox.) (Hote [3])                                     | <b>36.3 W</b>   | Driving Power (aprox.) (Hote 1)<br>+eviiiueenns 22.8 36.3                 |
| Plate Power Nutput {(approx.) .....<br>ceesseanees [1]                | <b>556 W</b>    | Plate Power Nutput {(approx.) .....<br>ceesseanees 5,56 8.2               |
| Plate Power Nutput {(approx.) .....<br>ceesseanees [2]                | <b>8.2 W</b>    | Plate Power Nutput {(approx.) .....<br>ceesseanees 5,56 8.2               |
| After filament and grid No.l low<br>voltage supnlies have been on for | <b>10 V</b>     | After filament and grid No.l low voltage<br>supnlies have been on for 10  |
| minutes, aprly plate and grid Yo                                      | <b>2 V</b>      | minutes, aprly plate and grid Yo.2<br>voltages and opefate the tube with  |
| reduced driving power for an<br>additional                            | <b>30 W</b>     | reduced driving power for an additional<br>30 minutes. All tuning adjust- |

## TUBE TINKER

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and their source documents.

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