



ELECTRONIC TUBE REFERENCE

3R252E

Power - Triode (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TRIODE

Water-cooled industrial power triode for very high-power RF-heating oscillator applications. With 24 kW plate dissipation, published operating conditions provide roughly 40-50 kW RF output at frequencies to about 30 MHz.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	8 V / 300 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
MAXIMUM PLATE VOLTAGE	13000 V
MAXIMUM PLATE DISSIPATION	24000 W
MAXIMUM GRID DISSIPATION	1000 W
<i>Published maximum ratings and characteristics audited; remaining values retained densely in parameter table.</i>	

The 3R252E is a water-cooled industrial triode for high-power industrial RF heating oscillator applications.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 ITT

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

1962 ITT

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage [1]	8129 V	Filament voltage 8129, 815% v
Filament voltage [2]	815 V	Filament voltage 8129, 815% v
*Filament <urrent, nominal o,	125	*Filament <urrent, nominal o, 125 A
Filament current	12 A	Filament current 12 A
Filament voltage range [1]	13 V	Filament voltage range 013 to 0:14 \4
Filament voltage range [2]	0 V	Filament voltage range 013 to 0:14 \4
Filament voltage range [3]	14 V	Filament voltage range 013 to 0:14 \4
Filament voltage range [4]	4 V	Filament voltage range 013 to 0:14 \4
Mutual conductance at Va = 4 mA/V [1]	4 mA/V	Mutual conductance at Va = 4kV, Vg . = 75V &0 mA/V
Mutual conductance at Va = 75 mA/V [2]	75 mA/V	Mutual conductance at Va = 4kV, Vg . = 75V &0 mA/V
Mutual conductance at Va = 0 mA/V [3]	0 mA/V	Mutual conductance at Va = 4kV, Vg . = 75V &0 mA/V
Grid to anode	30	Grid to anode 30 pF
Grid to filament	80	Grid to filament . 80 pF
Anode to filament	18	Anode to filament 18 pF
Water flow required for full anode dissipation [1]	3 W	Water flow required for full anode dissipation 3 gal/min 13 {min
Water flow required for full anode dissipation [2]	13 W	Water flow required for full anode dissipation 3 gal/min 13 {min
Maximum temperature of of;flowing water	70	Maximum temperature of of;flowing water 70 °C
direct voltage plus ripple)	13 kV	direct voltage plus ripple) 13 kv

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Direct grid voltage [2]	-325 V	Direct grid voltage -850 -325 v
Direct anode current [1]	90 A	Direct anode current 9,0 9,9 A
Direct anode current [2]	99 A	Direct anode current 9,0 9,9 A
Peak r.f., grid voltage [1]	1 V	Peak r.f., grid voltage 1 270 1 375 v
Peak r.f., grid voltage [2]	270 V	Peak r.f., grid voltage 1 270 1 375 v
Peak r.f., grid voltage [3]	1 V	Peak r.f., grid voltage 1 270 1 375 v
Peak r.f., grid voltage [4]	375 V	Peak r.f., grid voltage 1 270 1 375 v
Direct grid current (Ngte [1])	1 A	Direct grid current (Ngte 1) 1,37 (2,0) 1,37 (2,3) A
Direct grid current (Ngte [2])	137 A	Direct grid current (Ngte 1) 1,37 (2,0) 1,37 (2,3) A
Direct grid current (Ngte [3])	20 A	Direct grid current (Ngte 1) 1,37 (2,0) 1,37 (2,3) A
Direct grid current (Ngte [4])	137 A	Direct grid current (Ngte 1) 1,37 (2,0) 1,37 (2,3) A
Direct grid current (Ngte [5])	23 A	Direct grid current (Ngte 1) 1,37 (2,0) 1,37 (2,3) A
Anode dissipation [1]	13 kW	Anode dissipation 13 15,5 - kW
Anode dissipation [2]	155 kW	Anode dissipation 13 15,5 - kW
Grid dissipation (Note [1])	1 W	Grid dissipation (Note 1) 590 630 W
Grid dissipation (Note [2])	590 W	Grid dissipation (Note 1) 590 630 W
Grid dissipation (Note [3])	630 W	Grid dissipation (Note 1) 590 630 W
Grid resistor [1]	620	Grid resistor 620 680 Q
Grid resistor [2]	680	Grid resistor 620 680 Q
Power output [1]	41 kW	Power output 41 48 kW
Power output [2]	48 kW	Power output 41 48 kW
Power output, less drive [1]	39 kW	Power output, less drive 39 46 kW
Power output, less drive [2]	46 kW	Power output, less drive 39 46 kW
Power into load at [1]	85 kW	Power into load at 85% transfer efficiency 33 39 kW
Power into load at [2]	33 kW	Power into load at 85% transfer efficiency 33 39 kW
Power into load at [3]	39 kW	Power into load at 85% transfer efficiency 33 39 kW
Filament voltage [1]	80 V	Filament voltage 8,0V t 5% 8,0V * 5%

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage [2]	5 V	Filament voltage 8,0V t 5% 8,0V * 5%
Filament voltage [3]	80 V	Filament voltage 8,0V t 5% 8,0V * 5%
Filament voltage [4]	5 V	Filament voltage 8,0V t 5% 8,0V * 5%
Filament current, nominal [1]	300 A	Filament current, nominal 300 300 - A
Filament current, nominal [2]	300 A	Filament current, nominal 300 300 - A
Direct anode voltage [1]	65 kV	Direct anode voltage 6,5 7,0 kV
Direct anode voltage [2]	70 kV	Direct anode voltage 6,5 7,0 kV
Direct anode current [1]	2 A	Direct anode current 2 x 3,2 2 x 5,8 A
Direct anode current [2]	32 A	Direct anode current 2 x 3,2 2 x 5,8 A
Direct anode current [3]	2 A	Direct anode current 2 x 3,2 2 x 5,8 A
Direct anode current [4]	58 A	Direct anode current 2 x 3,2 2 x 5,8 A
Grid biss = [1]	540	Grid biss =540 ~550 v
Grid biss = [2]	550	Grid biss =540 ~550 v
Grid voltage swing, peak-to-peak [1]	1 V	Grid voltage swing, peak-to-peak 1 040 1 420 v
Grid voltage swing, peak-to-peak [2]	40 V	Grid voltage swing, peak-to-peak 1 040 1 420 v
Grid voltage swing, peak-to-peak [3]	1 V	Grid voltage swing, peak-to-peak 1 040 1 420 v
Grid voltage swing, peak-to-peak [4]	420 V	Grid voltage swing, peak-to-peak 1 040 1 420 v
Anode-to-anode load [1]	18	Anode-to-anode load 1,8 1,3 kQ
Anode-to-anode load [2]	13	Anode-to-anode load 1,8 1,3 kQ
Anode dissipation ' [1]	2 kW	Anode dissipation ' 2 x 10 2 x 13 kW
Anode dissipation ' [2]	10 kW	Anode dissipation ' 2 x 10 2 x 13 kW
Anode dissipation ' [3]	2 kW	Anode dissipation ' 2 x 10 2 x 13 kW
Anode dissipation ' [4]	13 kW	Anode dissipation ' 2 x 10 2 x 13 kW
Power input [1]	42 kW	Power input 42 80 kW
Power input [2]	80 kW	Power input 42 80 kW
Power output [1]	22 kW	Power output 22 - 54 kW
Power output [2]	54 kW	Power output 22 - 54 kW
Grid current	190 mA	Grid current 190 mA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Drive power (Note [1]	2 W	Drive power (Note 2) 2-x 135 W

TUBE TINKER

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