



2D21

THYRATRON

GAS TETRODE, MINIATURE TYPE

2D21

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:	<u>Min.</u>	<u>Av.</u>	<u>Max.</u>	
Voltage (AC or DC)	5.7	6.3	6.9	volts
Current, with heater volts = 6.3	0.54	0.60	0.66	amp

Cathode:

Heating Time, prior to tube conduction	10	-	-	sec
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Direct Interelectrode Capacitances (Approx.):^o

Grid No.1 to Anode	0.026	μ f
Input	2.4	μ f
Output	1.6	μ f

Ionization Time (Approx.):

For conditions: dc anode volts = 100; grid-No.1 square-pulse volts = 50; peak anode amp. during conduction = 0.5	0.5	μ sec
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Deionization Time (Approx.):

For conditions: dc anode volts = 125; grid-No.1 volts = -100; grid-No.1 resistor (ohms) = 1000; dc anode amp. = 0.1	35	μ sec
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For conditions: dc anode volts = 125; grid-No.1 volts = -10; grid-No.1 resistor (ohms) = 1000; dc anode amp. = 0.1	75	μ sec
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Maximum Critical Grid Current, with ac anode- supply volts (rms) = 460, and average anode amp. = 0.1	0.5	μ amp
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Anode Voltage Drop (Approx.)	8	volts
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Grid-No.1 Control Ratio (Approx.) with grid-No.1 resistor (megohms) = 0; grid-No.2 volts = 0	250
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Grid-No.2 Control Ratio (Approx.) with grid-No.1 resistor (megohms) = 0; grid-No.2 resistor (megohms) = 0; grid-No.1 volts = 0	1000
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^o Without external shield.

Mechanical:

Mounting Position	Any
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Maximum Overall Length	2-1/8"
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Maximum Seated Length	1-7/8"
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Length, Base Seat to Bulb Top (excluding tip)	1-1/2" $\pm$ 3/32"
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Maximum Diameter	3/4"
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Bulb	T-5-1/2
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Base	Small-Button Miniature 7-Pin
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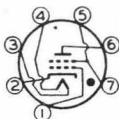
Basing Designation for BOTTOM VIEW. 7BN

Pin 1-Grid No.1

Pin 2-Cathode

Pin 3-Heater

Pin 4-Heater



Pin 5-Grid No.2

Pin 6-Anode

Pin 7-Grid No.2

← Indicates a change.

JUNE 15, 1948

TUBE DEPARTMENT

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

DATA

2021



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RELAY and GRID-CONTROLLED RECTIFIER SERVICE

Maximum Ratings, Absolute Values:

PEAK ANODE VOLTAGE:		
Forward.	650 max.	volts
Inverse.	1300 max.	volts
GRID-No.2 (SHIELD-GRID) VOLTAGE:		
Peak, before anode conduction.	-100 max.	volts
Average, during anode conduction [■]	-10 max.	volts
GRID-No.1 (CONTROL-GRID) VOLTAGE:		
Peak, before anode conduction.	-100 max.	volts
Average, during anode conduction [■]	-10 max.	volts
CATHODE CURRENT:		
Peak.	0.5 max.	amp
Average [■]	0.1 max.	amp
Surge, for duration of 0.1 sec. max.	10 max.	amp
GRID-No.2 CURRENT:		
Average [■]	+0.01 max.	amp
GRID-No.1 CURRENT:		
Average [■]	+0.01 max.	amp
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	100 max.	volts
Heater positive with respect to cathode.	25 max.	volts
AMBIENT TEMPERATURE RANGE.	-75 to +90	°C

Typical Operating Conditions for Relay Service:

RMS Anode Voltage.	117	400	volts
Grid-No.2 Voltage.	0	0	volts
RMS Grid-No.1 Bias Voltage [□]	5	-	volts
DC Grid-No.1 Bias Voltage.	-	-6	volts
Peak Grid-No.1 Signal Voltage.	5	6	volts
Grid-No.1-Circuit Resistance.	1.0	1.0	megohm
Anode-Circuit Resistance [#]	1200	2000	ohms

Maximum Circuit Values:

Grid-No.1-Circuit Resistance.	10 max.	megohms
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[■] Averaged over any interval of 30 sec. max.

[□] Approximately 180° out of phase with the anode voltage.

[#] Sufficient resistance, including the tube load, must be used under any conditions of operation to prevent exceeding the current ratings.

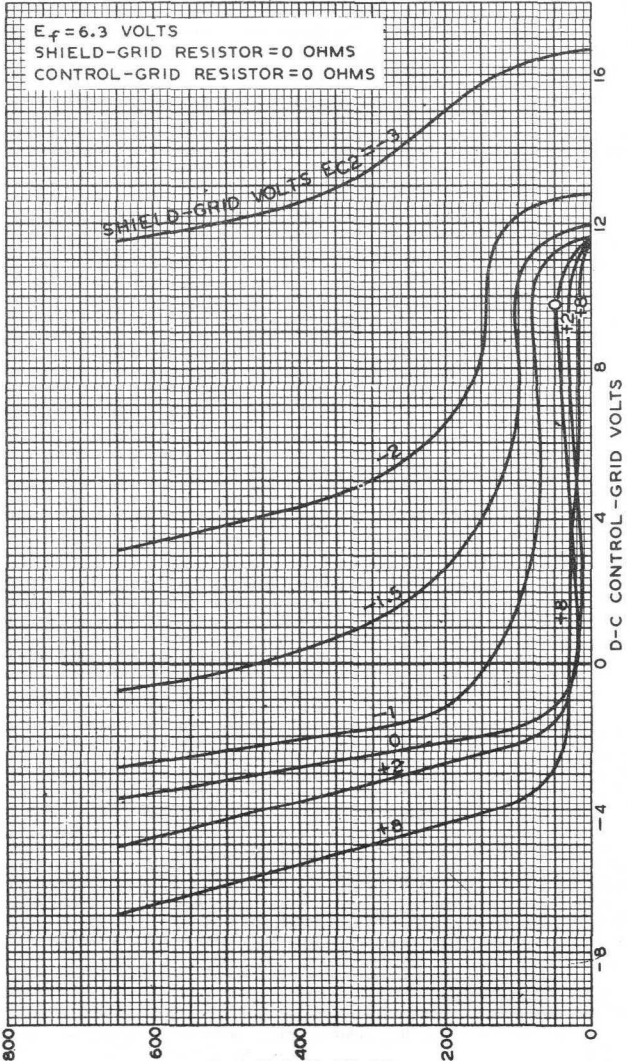
→ Indicates a change.



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AVERAGE CONTROL CHARACTERISTICS



MAY 2, 1944

D-C ANODE VOLTS
RCA VICTOR DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6531RI

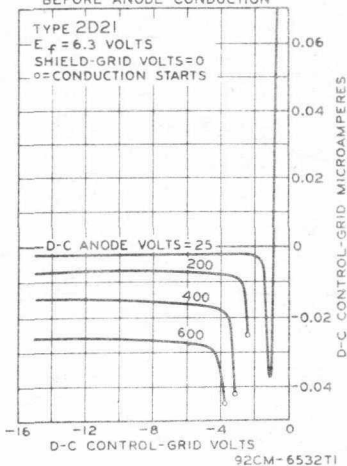
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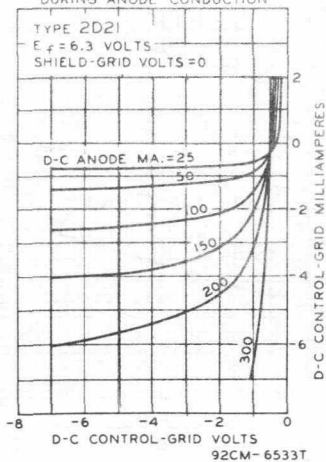
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THYRATRON

AVERAGE GRID CHARACTERISTICS
BEFORE ANODE CONDUCTION



AVERAGE GRID CHARACTERISTICS
DURING ANODE CONDUCTION



APRIL 1, 1944

RCA VICTOR DIVISION
 RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6532TI
 92CM-6533T



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OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

