



2D21

THYRATRON

GAS TETRODE, MINIATURE TYPE

2D21

GENERAL DATA

Electrical:

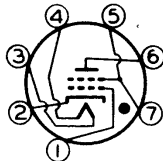
	<u>Min.</u>	<u>Av.</u>	<u>Max.</u>	
Heater, for Unipotential Cathode:				
Voltage (AC or DC)	5.7	6.3	6.9	volts
Current, with heater volts = 6.3	0.54	0.60	0.66	amp
Cathode:				
Heating Time, prior to tube conduction	10	-	-	sec
Direct Interelectrode Capacitances (Approx.): ^o				
Grid No.1 to Anode		0.026		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
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
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
Maximum Critical Grid Current, with ac anode-supply volts (rms) = 460, and average anode amp. = 0.1			0.5	μ amp
Anode Voltage Drop (Approx.)			8	volts
Grid-No.1 Control Ratio (Approx.) with grid-No.1 resistor (megohms) = 0; grid-No.2 volts = 0			250	
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	

^o Without external shield.

Mechanical:

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

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2D21



2D21
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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.



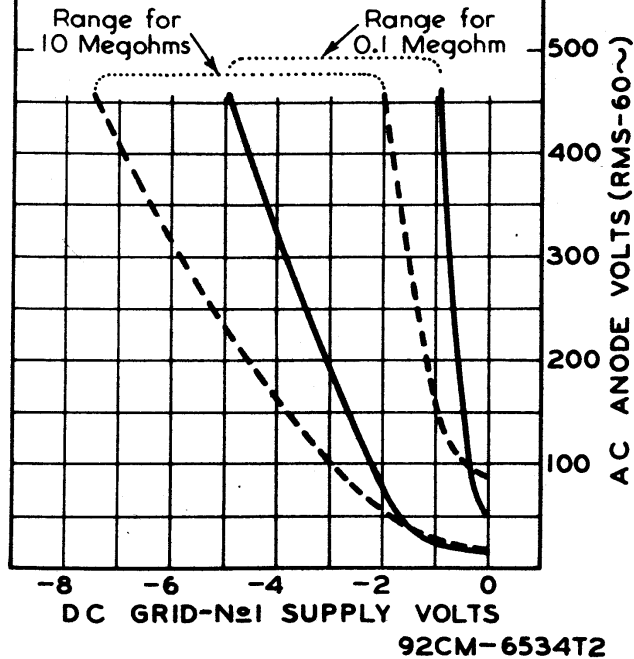
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OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

TYPE 2D21 SHIELD-GRID VOLTS=0
RANGES SHOWN ARE FOR TWO VALUES
OF GRID RESISTOR - 0.1 MEG. AND 10
MEG. -AND TAKE INTO ACCOUNT INITIAL
DIFFERENCES BETWEEN INDIVIDUAL
TUBES & SUBSEQUENT DIFFERENCES
DURING TUBE LIFE, FOR A HEATER-
VOLTAGE RANGE OF 5.7 TO 6.9 VOLTS



JUNE 15, 1948

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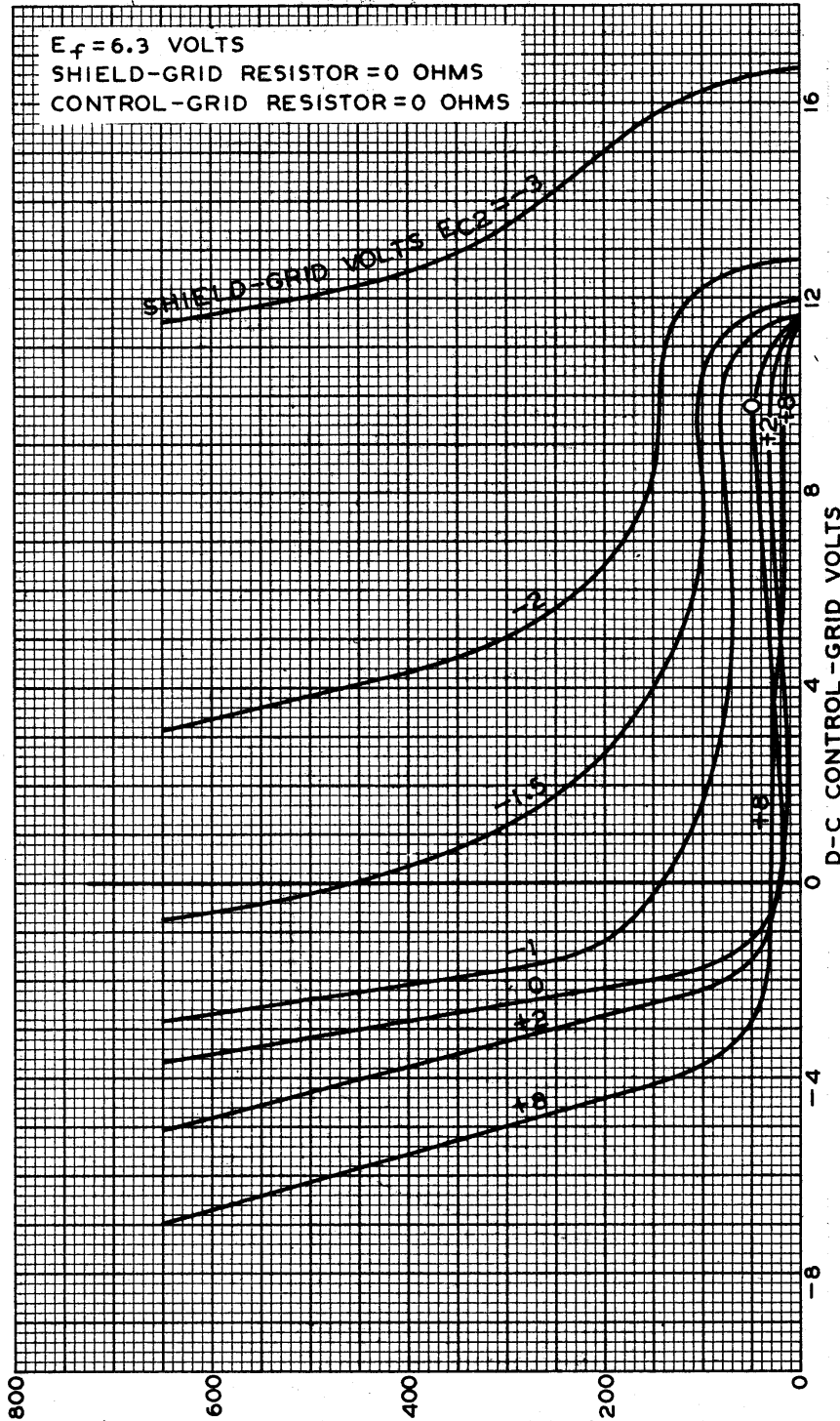
CE-6534T2



2D21

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AVERAGE CONTROL CHARACTERISTICS



MAY 2, 1944

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

92CM-6531R1

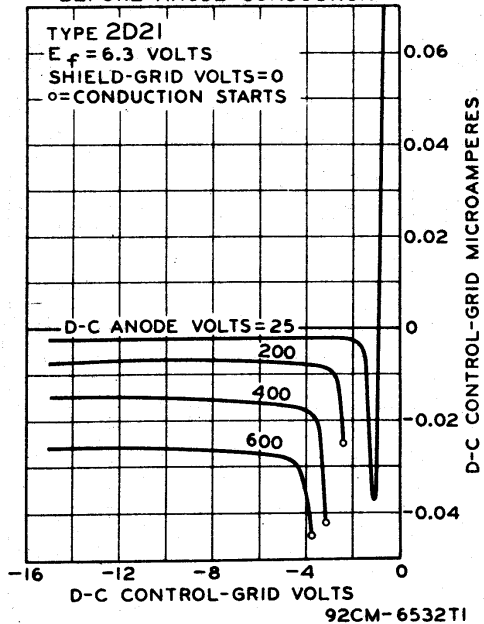
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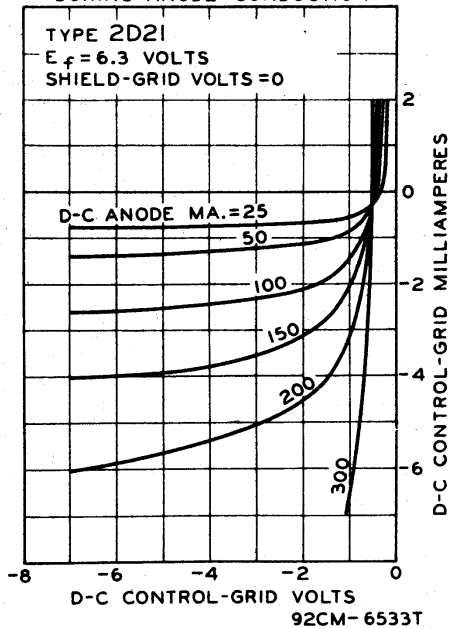
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AVERAGE GRID CHARACTERISTICS
BEFORE ANODE CONDUCTION



AVERAGE GRID CHARACTERISTICS
DURING ANODE CONDUCTION



APRIL 1, 1944

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

92CM-6532T1
92CM-6533T