



2050

THYRATRON

GAS TETRODE

2050

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:	Min.	Average	Max.	
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.):*

Grid No.1 to Anode	0.26		μ f
Input	4.2		μ f
Output	3.6		μ f

Ionization Time (Approx.):

For conditions: dc anode volts = 100; grid-No.1 square-pulse volts, = 50; and peak anode amp. during conduction = 1.0	0.5		μ sec
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Deionization Time (Approx.):

For conditions: dc anode volts = 125; grid-No.1 volts = -250; grid-No.1 resistor (ohms) = 1000; dc anode amp. = 0.1	50		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	100		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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Tube 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	800		
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* Without external shield.

Mechanical:

Mounting Position	Any
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Maximum Overall Length	4-1/8"
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Maximum Seated Length	3-9/16"
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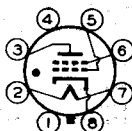
Maximum Diameter	1-9/16"
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Bulb	ST-12
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Base	Small-Shell Octal 8-Pin
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Basing Designation for BOTTOM VIEW 6BS

- Pin 1 - No Connection
- Pin 2 - Heater
- Pin 3 - Anode
- Pin 4 - No Connection



- Pin 5 - Grid No.1
- Pin 6 - Grid No.2
- Pin 7 - Heater
- Pin 8 - Cathode

← Indicates a change.

JUNE 15, 1948

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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RELAY and GRID-CONTROLLED RECTIFIER SERVICE

Maximum Ratings, Absolute Values:
PEAK ANODE VOLTAGE:

Forward.	180 max.	650 max.	volts
Inverse.	360 max.	1300 max.	volts

GRID-No.2 (SHIELD-GRID) VOLTAGE:

Peak, before anode conduction.	-100 max.	-100 max.	volts
Average, during anode conduction [■]	-10 max.	-10 max.	volts

GRID-No.1 (CONTROL-GRID) VOLTAGE:

Peak, before anode conduction.	-250 max.	-250 max.	volts
Average, during anode conduction [■]	-10 max.	-10 max.	volts

CATHODE CURRENT:

Peak	1.0 max.	1.0 max.	amp
Average [■]	0.2 max.	0.1 max.	amp
Surge, for duration of 0.1 sec. max.	10 max.	10 max.	amp

→ GRID-No.2 CURRENT:

Average [■]	+0.01 max.	+0.01 max.	amp
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→ GRID-No.1 CURRENT:

Average [■]	+0.01 max.	+0.01 max.	amp
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PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode.	100 max.	100 max.	volts
Heater positive with respect to cathode.	25 max.	25 max.	volts

AMBIENT TEMPERATURE RANGE. -75 to +90 -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:

For average anode current below 0.1 amp.	10 max.	megohms
For average anode current above 0.1 amp.	2 max.	megohms

[■] 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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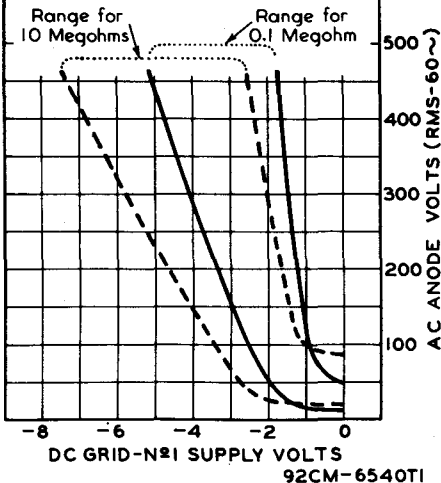


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OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

TYPE 2050 GRID-N₂ 2 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



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CE-6540T1

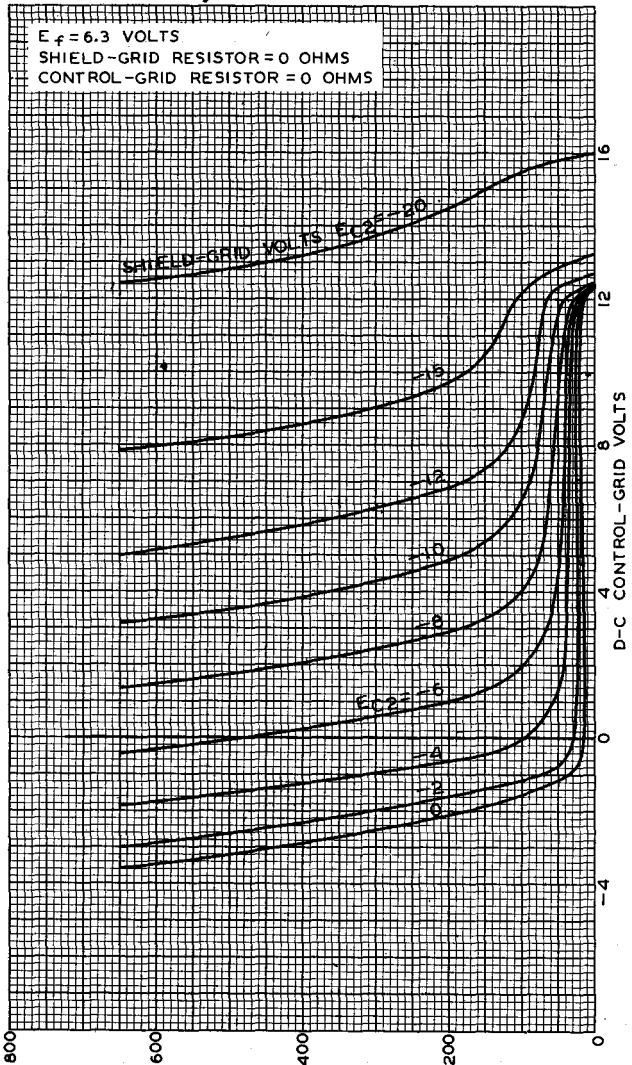


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AVERAGE CONTROL CHARACTERISTICS

$E_f = 6.3$ VOLTS
SHIELD-GRID RESISTOR = 0 OHMS
CONTROL-GRID RESISTOR = 0 OHMS



MAY 3, 1944

D-C ANODE VOLTS
RCA VICTOR DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

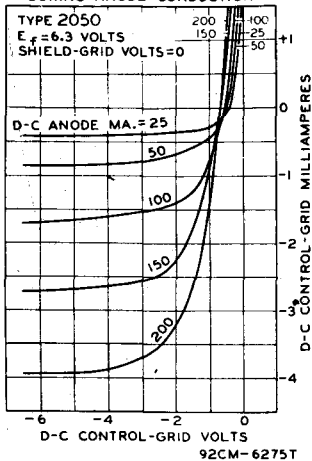
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AVERAGE GRID CHARACTERISTICS
DURING ANODE CONDUCTION



AVERAGE GRID CHARACTERISTICS
BEFORE ANODE CONDUCTION

