



5696

THYRATRON

GAS-TETRODE, MINIATURE TYPE

5696

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage.	6.3	ac or dc volts
Current.	0.150	amp

Cathode:

Minimum Heating Time, prior to tube conduction	10	sec
--	--------------	-----

Direct Interelectrode Capacitances (Approx.):^o

Grid No.1 to Anode	0.03	μ mf
Input	1.8	μ mf
Output	0.54	μ mf

Ionization Time (Approx.):

For conditions: dc anode volts = 100; grid-No.1 square-pulse volts = +50; peak cathode amperes during conduction = 0.150	0.5	μ sec
--	---------------	-----------

Deionization Time (Approx.):

For conditions: dc anode volts = 500; grid-No.1 volts = -100, grid-No.1 resistor (ohms) = 1000; dc cathode amperes = 0.025	25	μ sec
--	--------------	-----------

For conditions: dc anode volts = 500; grid-No.1 volts = -13; grid-No.1 resistor (ohms) = 1000; dc cathode amperes = 0.025	40	μ sec
---	--------------	-----------

Maximum Critical Grid-No.1 Current, with ac

anode-supply volts (rms) = 350, and average cathode amperes = 0.025	0.5	μ amp
---	---------------	-----------

Anode Voltage Drop (Approx.) 10 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 volts = 0, grid-No.2 resistor (ohms) = 0 15

^o Without external shield.

Mechanical:

Mounting Position. Any

Maximum Overall Length 1-3/4"

Maximum Seated Length. 1-1/2"

Length, Base Seat to Bulb Top (excluding tip). 1-1/8" \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

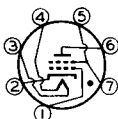
Pin 3-Heater

Pin 4-Heater

Pin 5-Grid No.2

Pin 6-Anode

Pin 7-Grid No.2





THYRATRON

RELAY and GRID-CONTROLLED RECTIFIER SERVICE

Maximum Ratings, Absolute Values:

PEAK ANODE VOLTAGE:		
Forward.	500 max.	volts
Inverse.	500 max.	volts
GRID-No.2 (SHIELD-GRID) VOLTAGE:		
Peak, before anode conduction.	-50 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	0.1 max.	amp
Average [■]	0.025 max.	amp
Surge, for duration of 0.1 sec. max.	2 max.	amp
GRID-No.2 CURRENT:		
Average [■]	+0.005 max.	amp
GRID-No.1 CURRENT:		
Average [■]	+0.005 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.	-55 to +90	°C

Typical Operating Conditions for Relay Service:

RMS Anode Voltage.	117	volts
Grid No.2.	Connected to cathode at	socket
RMS Grid-No.1 Bias Voltage [□]	5	volts
Peak Grid-No.1 Signal Voltage.	5	volts
Grid-No.1-Circuit Resistance	0.1	megohm
Anode-Circuit Resistance [#]	5000	ohms

Maximum Circuit Values:

Grid-No.1-Circuit Resistance	10 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.

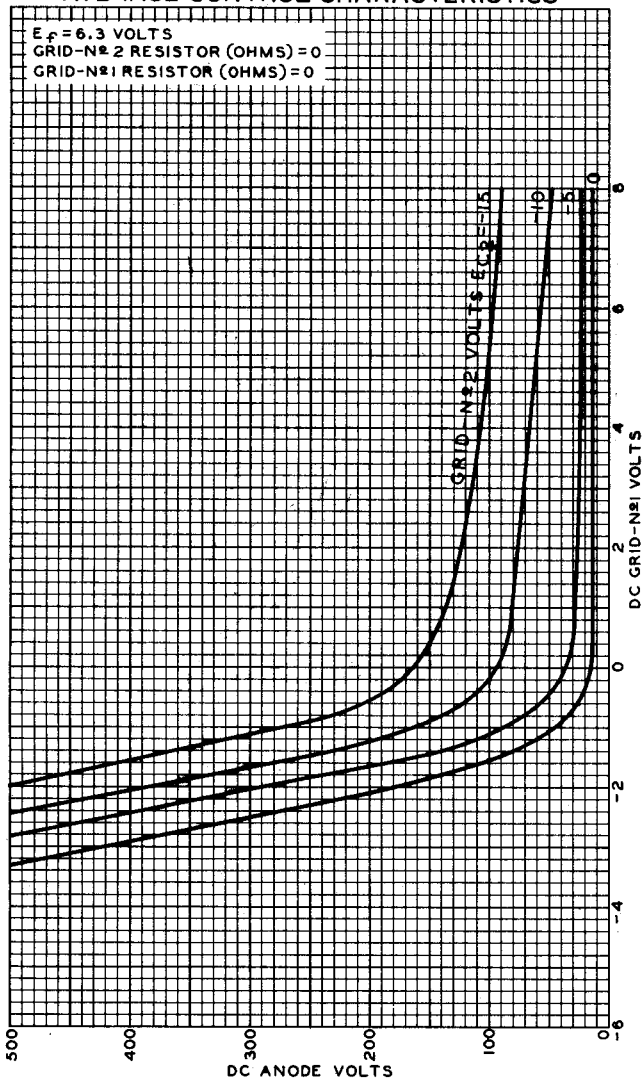


5696

5696

AVERAGE CONTROL CHARACTERISTICS

$E_f = 6.3$ VOLTS
GRID-N₂ RESISTOR (OHMS) = 0
GRID-N₁ RESISTOR (OHMS) = 0



AUG. 6, 1948

DC ANODE VOLTS
TUBE DEPARTMENT

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7044

5696



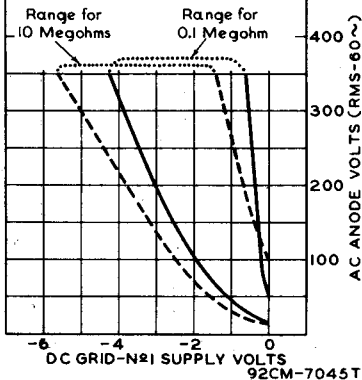
5696

THYRATRON

OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

TYPE 5696

GRID-N#2 (SHIELD) 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
 AND FOR AN AMBIENT TEMPERATURE
 RANGE OF -55 TO +90 °C



FEB. 1, 1949

TUBE DEPARTMENT
 RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

CE-7045T



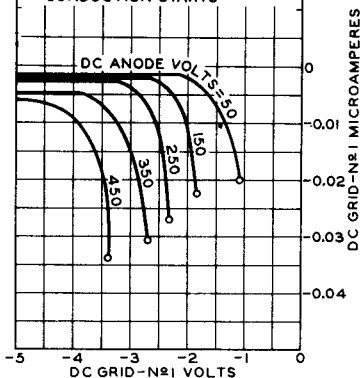
5696

5696

THYRATRON

AVERAGE CHARACTERISTICS BEFORE ANODE CONDUCTION

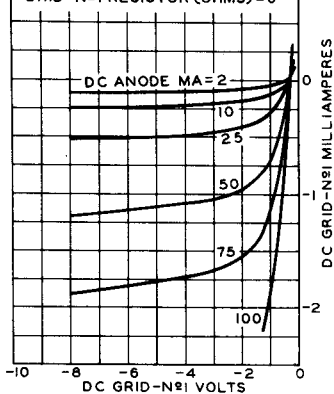
TYPE 5696
 $E_f = 6.3$ VOLTS
GRID-N#2 (SHIELD) VOLTS = 0
GRID-N#1 RESISTOR (OHMS) = 0
o = CONDUCTION STARTS



92CM-7047T

AVERAGE CHARACTERISTICS DURING ANODE CONDUCTION

TYPE 5696
 $E_f = 6.3$ VOLTS
GRID-N#2 (SHIELD) VOLTS = 0
GRID-N#1 RESISTOR (OHMS) = 0



92CM-7052T

FEB. 1, 1949

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

CE-7047T - 7052T