Rel 301

GOVERNMENT RESTRICTED 5CP7

TENTATIVE CHARACTERISTICS and RATINGS

HEATER VOLTAGE (A.C. or D.C.)	6.3	Volts
HEATER CURRENT	0.6	Ampere
FOCUSING METHOD	Electrostatic	
DEFLECTION METHOD	Electrostatic	

Electrodes DJ1 and DJ2 are nearest to screen and designated "upper."
DJ1 is on same side of tube as pin 5.
Electrodes DJ3 and DJ4 are nearest to base and designated "lower."

PHOSPHOR	No. 7	
DIRECT INTERELECTRODE CAPACITANCES (Approx.):		
Grid to All Other Electrodes	8.0	μμf
Cathode to All Other Electrodes	8.0	μμf
Deflecting Electrode DJ1 to Deflecting Electrode DJ2	2.0	μμf
Deflecting Electrode DJ3 to Deflecting Electrode DJ4	2.0	μμf
Deflecting Electrode DJ1 to All Other Electrodes	9.0	μμf
Deflecting Electrode DJ3 to All Other Electrodes	7.0	μμf
Deflecting Electrode DJ1 to All Other Electrodes except Deflecting Electrode DJ2	7.0	μμf
Deflecting Electrode DJ2 to All Other Electrodes except Deflecting Electrode DJ1	7.0	μμf
Deflecting Electrode DJ3 to All Other Electrodes except Deflecting Electrode DJ4	5.0	μμf
Deflecting Electrode DJ4 to All Other Electrodes except Deflecting Electrode DJ3	6.0	μμf
OVERALL LENGTH	16-3/4" ±3/8"	
GREATEST DIAMETER of BULB	5-1/4" ±3/32"	
MINIMUM USEFUL SCREEN DIAMETER	4-1/4"	
BULB SIDE TERMINAL	Snap Connector	
BASE	Diheptal 12-Pin	
RMA BASING DESIGNATION	14B	

MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS

Maximum Ratings Are Absolute Values

ANODE No. 3 (Supplementary High-Voltage Electrode)VOLTAGE	4400 max.	Volts
ANODE No. 2 (High-Voltage Electrode) VOLTAGE	2200 max.	Volts
ANODE No. 1 (Focusing Electrode) VOLTAGE	1100 max.	Volts
GRID (Control Electrode) VOLTAGE	Never positive	
PEAK VOLTAGE BETWEEN ANODE No. 2 and ANY DEFLECTING ELECTRODE	550 max.	Volts
D-C HEATER-CATHODE POTENTIAL*	125 max.	Volts
GRID-CIRCUIT RESISTANCE	1.5 max.	Megohms
IMPEDANCE of ANY DEFLECTING-ELECTRODE CIRCUIT at HEATER-SUPPLY FREQUENCY	1.0 max.	Megohm

TYPICAL OPERATION:				
Anode No. 3 Voltage**	2000	3000	4000	Volts
Anode No. 2 Voltage***	2000	1500	2000	Volts
Anode No. 1 Voltage for Focus at 75% of Grid Voltage for Cut-Off#	575	430	575	Volts
Grid Voltage for Visual Cut-Off##	-60	-45	-60	Volts
Values subject to variation of	±50	±50	±50	Per cent

August 5, 1942

from RMA release #301, Aug. 18, 1942
sponsor: "Committee on Cathode Ray Tubes", RMA

TYPICAL OPERATION (continued):

Deflection Sensitivity:			
Electrodes DJ1 and DJ2	0.350	0.370	0.280 mm/volt D.C.
Electrodes DJ3 and DJ4	0.390	0.450	0.340 mm/volt D.C.
Deflection Factor:			
Electrodes DJ1 and DJ2	73	69	92 volts D.C./in.
Electrodes DJ3 and DJ4	64	56	74 volts D.C./in.
Values subject to variation of	±20	±25	±25 Per cent

* With heater negative. Cathode should be connected to the mid-tap or to one side of the heater transformer winding.

** For high-velocity scanning, it is recommended that the anode No. 3 voltage be not less than 3000 volts.

*** Brilliance and definition decrease with decreasing anode voltage. In general, anode voltage should not be less than 1500 volts.

\# Individual tubes may require between +25% and -30% of these values with grid voltage between zero and cut-off.

\## Visual extinction of stationary focused spot.

SPOT POSITION

The undeflected focused spot will fall within a 25-mm square centered at the geometric center of the tube face and having one side parallel to the trace produced by DJ1 and DJ2.

Suitable test conditions are: anode No. 3 voltage, 4000 volts; anode No. 2 voltage, 2000 volts; anode No. 1 voltage, adjusted for focus; deflecting-electrode resistors, 1 megohm each, connected to anode No. 2; the tube shielded from all extraneous fields. To avoid damage to the tube, make the test with grid voltage near cut-off.

BASING and DEFLECTING-ELECTRODE ALIGNMENT

The angle between the trace produced by DJ1 and DJ2 and its intersection with the plane through the tube axis and pin 5 will not exceed 10°.

The angle between the trace produced by DJ1 and DJ2 and the trace produced by DJ3 and DJ4 will be 90° ±4°.

With DJ1 (pin 11) positive with respect to DJ2 (pin 10), the spot will be deflected toward pin 5; likewise, with DJ3 (pin 7) positive with respect to DJ4 (pin 8), the spot will be deflected toward pin 2.

The bulb side terminal for anode No. 3 is on the same side of the tube as pin 5. Its center will not deviate more than 10° from the plane through the tube axis and the trace produced by DJ1 and DJ2.

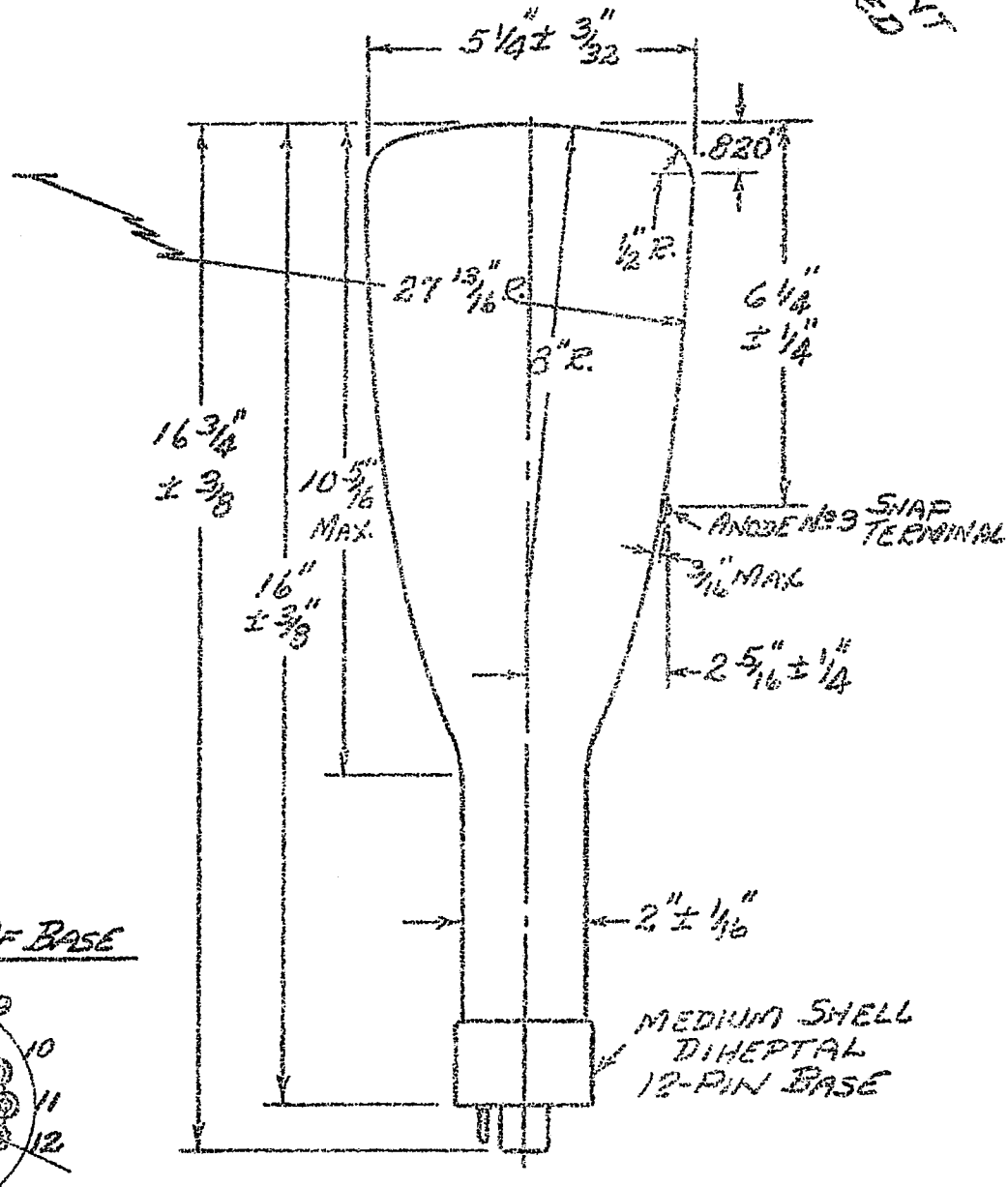
ANODE No. 3 CURRENT vs GRID VOLTAGE CHARACTERISTIC

Anode No. 3 Voltage.....4000 Volts
Anode No. 2 Voltage.....2000 Volts
Anode No. 1 Voltage.....adjusted for focus

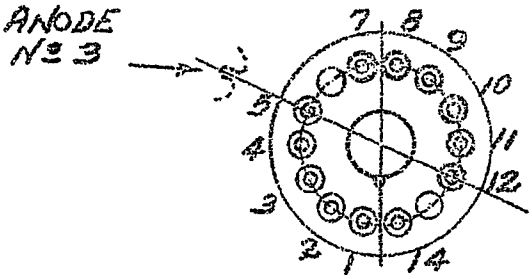
Anode No. 3 Current, Microamperes	Grid Voltage
160	0
110	-10
70	-20
40	-30
20	-40
8	-50
0	-60

5CD7

GOVERNMENT RESTRICTED



BOTTOM VIEW OF BASE



PIN No.	ELEMENTS
1	HEATER
8	CATHODE
3	GRID
4	INTERNAL CONN. DO NOT USE
5	ANODE No. 1
7	DEFLECTING ELECTRODE D1/3
8	DEF. ELECTRODE D1/4
9	ANODE No. 2
10	DEF. ELECTRODE D2
11	DEF. ELECTRODE D1
12	NO CONNECTION.
14	HEATER

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