

PROPOSED TENTATIVE SPECIFICATION FOR ELECTRON TUBE TYPE 6231  
 THE PROVISIONS OF SPECIFICATION JAN-1A APPLY TO THIS SPECIFICATION

Description: Thyatron, Inert Gas Triode

Ratings:	Ef V	Epp Vac	epx v	epy v	Ec V	Ib Adc	ib a	tk sec	tk sec	TA °C	Bulb T °C	F cps	ehk v	Alt ft
Absolute														
Max.	14±5%	350	500	500	-100	5	30	120 (min.)	--	-55to +75	175 Note 6	500	±50	65000
	28	--	--	--	--	--	--	25	35	--	--	--	--	--
Test Cond:	14	--	--	--	--	--	--	--	--	--	--	60	--	--
**Weight:														
*Height:														
**Base:														
**Anode:														
**Cathode:														
**Envelope:														

Max. 5.5 ozs. Shock rating: 200G  
 Max. 5-1/16" \*Diameter: Max. 2-1/32"  
 A4-81 base with 3-1/2" flexible leads, silicone-impregnated glass fiber insulation, class C-2. Colors: heaters, brown; grid, green; cathode, yellow. Insulated lugs for #6 studs, width of lug 9/32".  
 3-1/2" flexible lead at top, silicone-impregnated glass fiber insulation. Class C-2, lug for #6 stud. Width of lug 9-32".  
 Coated unipotential  
 T-16

REF:	TEST	CONDITIONS	MIN.	MAX.	UNITS
	Stabilization	I=5.0 Adc min;Epp=130 Vac max;Rg=10000 ohms;grid connected to anode	t: 16	--	hrs.
F-4	Life Test	Operation (1) Group D	t: 500	--	hrs.
F-4b	Life Test End Point	Tube Voltage Drop Operation (1) Grid Current	Etd: -- Ecc: -- ic: --	16 -20 10	Vdc Vdc ua
F-6b(9c)	**Vibration	Notes 1 and 2			
F-6b(9e)	**Shock **Heater Cycling	200 g, 1 millisecond, Note 2 Ef=14.7V;3 min. on, 3 min. off	t: 1000	--	cycles
F-6i	Heater Current		If: 2.35	2.75	A
F-6s(1)	Grid Voltage for Conduction	Ebb=500 Vdc;Rg=10000 ohms max;Rp=750 to 5000 ohms	Ecc: --	-20	Vdc
F-6s(2)	*Anode Voltage for Conduction	Rg=10000 ohms max; Ecc=+20 Vdc	Ebb: --	26	Vdc
F-6t	Tube Voltage Drop	Ib=5.0 Adc;Epp=130 V ac max; Rg=10000 ohms;grid connected to anode; Note 3	Etd: --	12.5	Vdc
F-6u	Operation (1) *Operation (2)	Ib=5.0 Adc;Rg=10000 ohms Epp=350 Vac Ib=2.2 Adc;F=1250 cps ib=4.4a Rg=10000 ohms;epx=epy=500v min. ; Ecc= -55 V dc max.;current conduction angle=180°;Deionization Time= 200 usec.	Ecc: -- t: 30	-20 --	Vdc secs.

REF:	TEST	CONDITIONS	MIN.	MAX.	UNITS
F-6v	† Peak Emission	ib=30a.; Note 4	etd: --	70	v
F-6x	Grid Current	Rg=10000 and 1 meg; Ib=5.0 Adc t=15 secs; Epp=350 V ac min; Note 5	ic: --	10	ua

Note 1: Each tube shall be vibration-cycled over the range 10-55 cps, continuously varied, for a 5-minute period in each position specified. The tubes shall be vibrated with Ib=5 A dc.

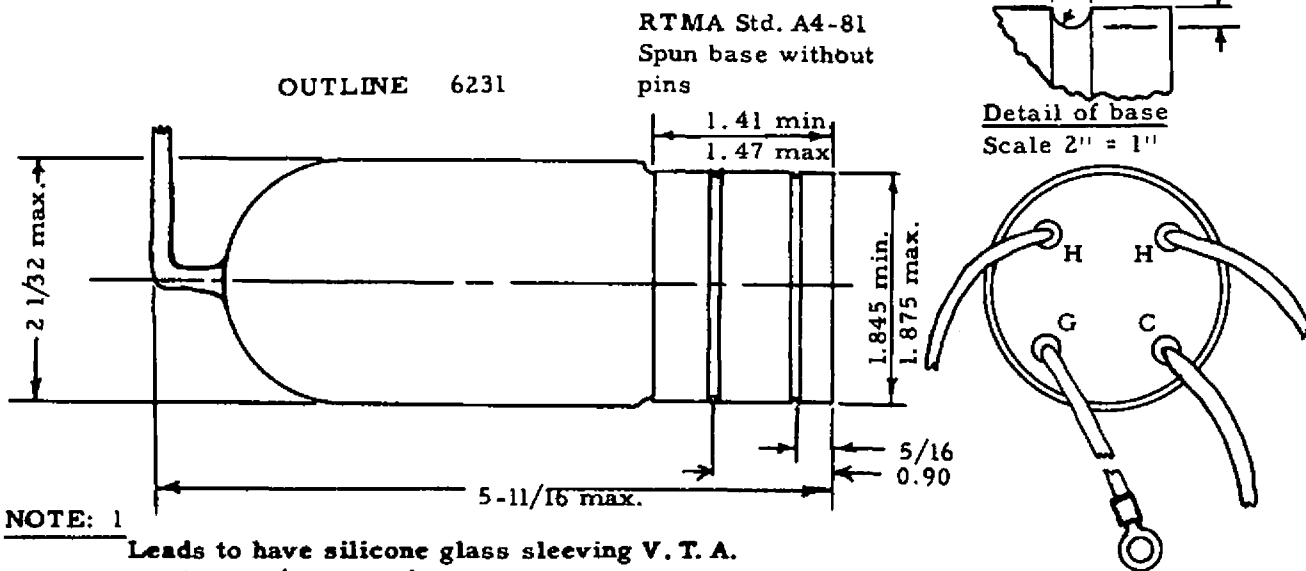
Note 2: The tubes tested shall not show intermittent or permanent interelectrode shorts or mechanical failures. After testing, the tubes shall comply with Operation (1) (F-6u) and Heater Current (F-6i) tests.

Note 3: Wattmeter Method: With an alternating current source and resistive load, measure the power loss in the tube with a wattmeter so that the current coil is in series with and the voltage coil across the tube. The tube voltage drop (Etd) is the total power loss minus the coil loss under load, divided by the average, or dc. current (Ib).

Note 4: Connect grid to anode through 10,000 ohm resistor. Adjust Epp and Rp to give required current.

Note 5: Operate tube at least 5 minutes prior to test. Operation may be optional Epp but Ib must be 5.0 Adc min. To test, switch to test voltage and Ib=5.0 Adc in less than 2 seconds.

Note 6: Bulb temperature measured at the base.



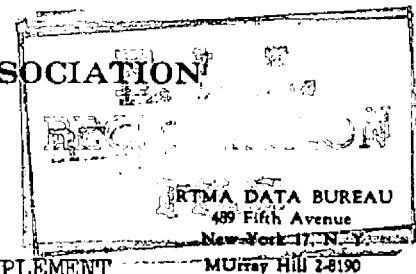
NOTE: 1  
Leads to have silicone glass sleeving V. T. A. Grade C-2 (or better). Color-Coded Heater Brown, Cathode Yellow, Grid Green.

NOTE: 2  
Leads to have lugs A. M. P. #31882 (or equivalent) for #6 stud

Weight 5.5 oz. max.

ELECTRONS, INCORPORATED  
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Newark 4, New Jersey

RADIO - TELEVISION MANUFACTURERS ASSOCIATION  
ENGINEERING DEPARTMENT



March 13, 1953

Release No. 1134 SUPPLEMENT



To Tube Engineers

Please attach the following data to Release No. 1134 as supplementary data on the Type 6231 Thyatron tube, registered by Electronics, Inc., on Jan. 30, 1953. The 6231 is an inert gas filled grid controlled rectifier (Triode) designed for inverter operation.

Maximum Ratings (absolute values)

Peak Inverse Voltage	500 volts
Peak Forward Voltage	500 volts
Bulb Temperature at base	175° C
Cathode Current (DC meter value)	
Peak (oscillograph continuously occurring)	30 amperes
Average	5 amperes
Surge (maximum duration 0.1 sec.)	180 amperes
Maximum Averaging Time	30 Seconds
Maximum Heater - cathode voltage (peak)	+50 volts
Frequency (maximum)	500 cycles per second
Ambient Temperature Limits	-55° to +75° C

Electrical Data

Filament (heater) voltage	14 +5% Volts
Filament (heater) current @14 V	2.55 ± 0.20 amperes
Cathode Heating Time	
@ 14 V	60 seconds minimum
@ 28 V	25 seconds minimum
@ 28 V	35 seconds maximum
Average Arc Drop Volts	12.5 volts (maximum)
Deionization Time (approximate)	200 micro seconds

Grid Characteristics

Critical grid volts at anode volts 350 Vac	-20.0 V (maximum)
Critical grid current at anode volts 350 Vac	10 ua (maximum)
Critical Anode volts at +20 grid volts	26 V (maximum)

Mechanical Data

Type of cooling	Convection
Mounting position	Any
Net Weight (maximum)	8 ounces
Base	A4-81 without pins
Cap	Flexible (outline)
Connections	Outline
Maximum overall dimensions	
Diameter	2 $\frac{1}{32}$ inches
Length	5 $\frac{13}{16}$ inches
Shock Rating	200 G
Cathode	Coated Unipotential

RRBetcher:mg

Very truly yours,  
*Ralph R. Batcher*  
Radio Television Manufacturers Association