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MEDIUM-MU TWIN TRIODE

9-PIN MINIATURE TYPE

For "on-off" control applications involving long
periods of operation under cutoff conditions

GENERAL DATA

Electrical:

Heater, Pure Tungsten, for Unipotential Cathodes:

Heater arrangement	Series	Parallel	
Voltage.	12.6 $\pm$ 5%	6.3 $\pm$ 5%	ac or dc volts
Current.	0.3	0.6	amp

Direct Interelectrode Capacitances:^o

Grid to plate (Each unit).	3.2	μ ft
Grid to cathode and heater (Each unit)	3.6	μ ft
Plate to cathode and heater (Each unit)	0.6	μ ft
Heater to cathode (Each unit).	4.6	μ ft
Grid to grid	0.042 max.	μ ft
Plate to plate	1 max.	μ ft

Characteristics, Class A₁ Amplifier (Each Unit):

Plate Voltage.	150	volts
Grid Voltage	-5	volts
Amplification Factor	18	
Plate Resistance (Approx.)	3900	ohms
Transconductance	4600	μ mhos
Plate Current.	11	ma
Grid Voltage (Approx.) for plate voltage of 150 volts and plate current of 100 μ a	-11	volts
Grid Voltage (Approx.) for plate voltage of 200 volts and plate current of 1 ma	-12	volts

Mechanical:

Operating Position Any, but for the utmost in service,
tube should be Vertical with base up or down, or
Horizontal with pins 6 and 9 in vertical plane

Maximum Overall Length	2-5/8"
Maximum Seated Length.	2-3/8"
Length, Base Seat to Bulb Top (Excluding tip)	2" $\pm$ 3/32"
Maximum Diameter	7/8"
Dimensional Outline.	See General Section
Bulb	T6-1/2
Base	Small-Button Noval 9-Pin (JETEC No.E9-1)
Basing Designation for BOTTOM VIEW	9CZ

- Pin 1-Plate of
Unit No.2
Pin 2-Cathode of
Unit No.2
Pin 3-Grid of
Unit No.2
Pins 4 & 9-Heater of
Unit No.2
Pins 5 & 9-Heater of
Unit No.1



- Pin 6-Plate of
Unit No.1
Pin 7-Cathode of
Unit No.1
Pin 8-Grid of
Unit No.1
Pin 9-Heater
Mid-Tap

^o Without external shield.



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COMPUTER SERVICE and "ON-OFF" CONTROL SERVICE

Unless Otherwise Specified, Values are for Each Unit

Maximum Ratings, Absolute Values:

DC PLATE VOLTAGE	330	max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE*	1000	max.	volts
DC GRID VOLTAGE:			
Negative bias value.	80	max.	volts
Positive bias value.	4	max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE*	440	max.	volts
PEAK POSITIVE-PULSE GRID VOLTAGE*	14	max.	volts
DC GRID CURRENT	5.5	max.	ma
PEAK GRID CURRENT*	110	max.	ma
DC CATHODE CURRENT	45	max.	ma
PEAK CATHODE CURRENT*	350	max.	ma
PLATE DISSIPATION:			
Either plate	4	max.	watts
Both plates (Both units operating) . . .	7	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode .	220	max.	volts
Heater positive with respect to cathode .	220 [▲]	max.	volts
BULB TEMPERATURE (At hottest point			
on bulb surface)	120	max.	°C

Maximum Circuit Values:

Grid-Circuit Resistance:

For fixed-bias operation	0.1	max.	megohm
For cathode-bias operation	0.5	max.	megohm

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

Unless Otherwise Specified, Values are for Each Unit

	Note	Min.	Max.	
Heater Current	1	0.275	0.325	amp
Plate Current (1)	1,2	6	16	ma
Plate Current (2)	1,3	-	1	ma
Plate Current (3)	1,4	-	100	μa
Transconductance	1,2	3200	6000	μmhos
Amplification Factor	1,2	15	21	
Reverse Grid Current (Units				
in parallel)	1,5	-	2.5	μa
Heater-Cathode Leakage Cur-				
rent:				
Heater negative with				
respect to cathode	1,6	-	15	μa
Heater positive with				
respect to cathode	1,6	-	15	μa

* under the following conditions: rectangular pulse; pulse duration, 0.08 microsecond; pulse-repetition rate, 1×10^6 pps; and duty factor, 0.08.

▲ The dc component must not exceed 110 volts.

Notes 1 to 6: See next page.



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	Note	Min.	Max.	
Grid-Voltage Difference				
Between Units.	1,7	-	2.5	volts
Leakage Resistance:				
Between grid and all other electrodes tied together	1,8	100	-	megohms
Between plate and all other electrodes tied together	1,9	100	-	megohms

Note 1: With 12.6 volts ac or dc on heater (series arrangement).

Note 2: With plate volts = 150 and grid volts = -5. Each unit tested separately. Unit not under test connected to ground.

Note 3: With plate volts = 200 and grid volts = -15. Each unit tested separately. Unit not under test connected to ground.

Note 4: With plate volts = 150 and grid volts = -15. Each unit tested separately. Unit not under test connected to ground.

Note 5: With plate volts = 180, grid volts = -5, and grid-circuit resistance (megohms) = 0.1.

Note 6: With 100 volts dc between heater and cathode.

Note 7: With plate volts = 200 and grid voltage adjusted for plate current of 1 milliampere.

Note 8: With grid 100 volts negative with respect to all other electrodes tied together.

Note 9: With plate 300 volts negative with respect to all other electrodes tied together.

SPECIAL RATINGS & PERFORMANCE DATA

Heater-Cycling Life Performance:

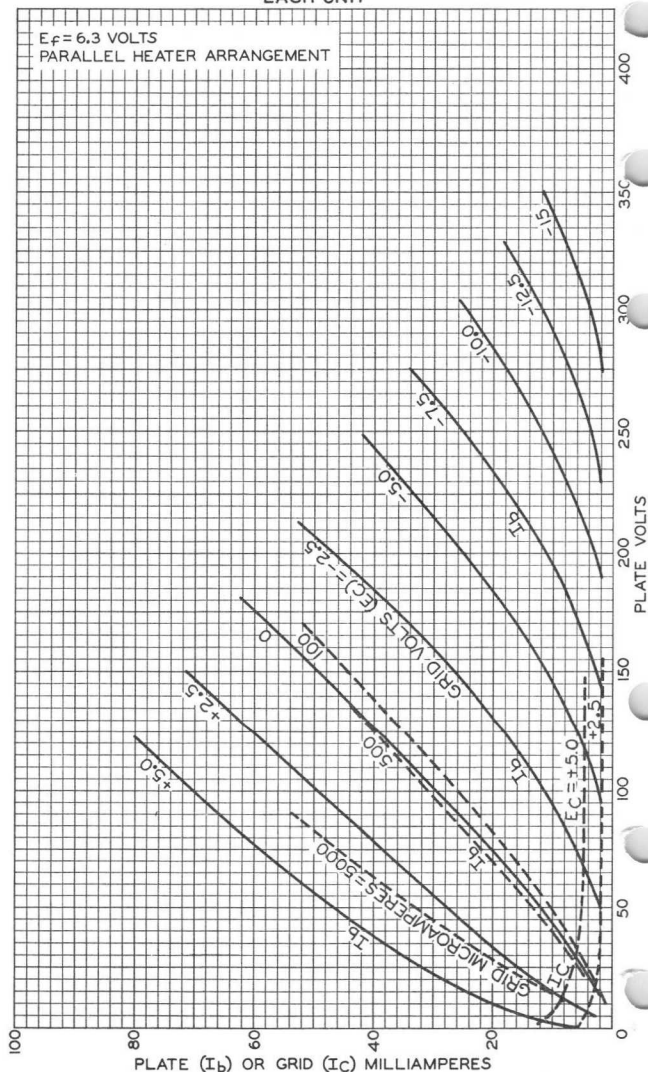
Cycles of Intermittent Operation 2000 min. cycles

Under the following conditions: heater volts = 7.5 cycled one minute on and four minutes off, heater 180 volts positive with respect to cathode, and all other elements connected to ground.

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AVERAGE CHARACTERISTICS
EACH UNIT

ELECTRON TUBE DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

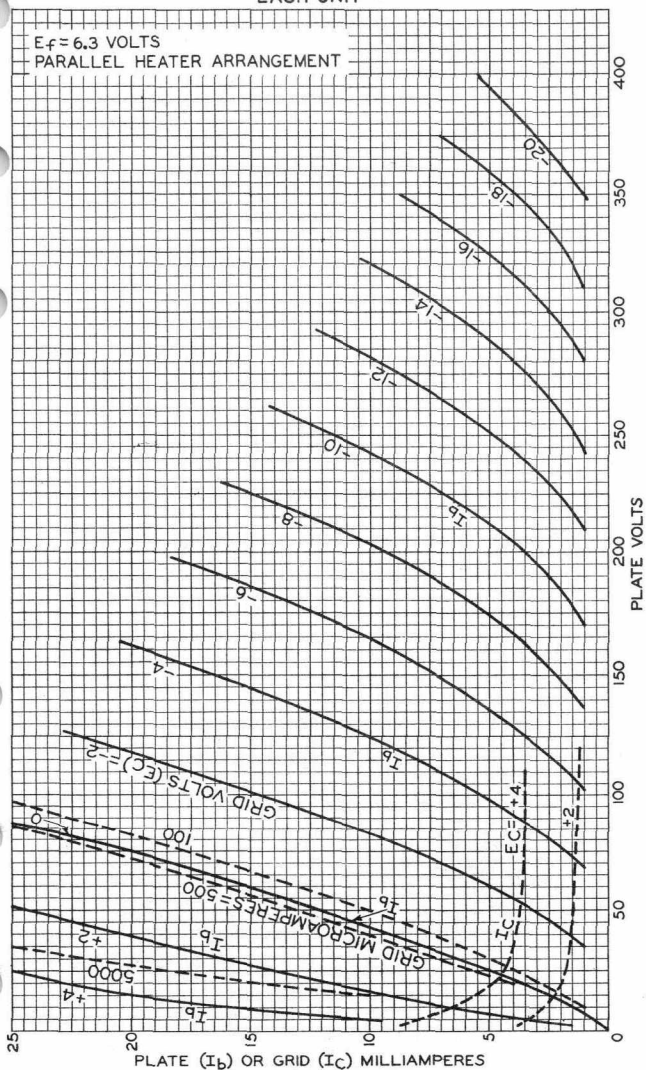
92CM-9273



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AVERAGE CHARACTERISTICS
EACH UNIT

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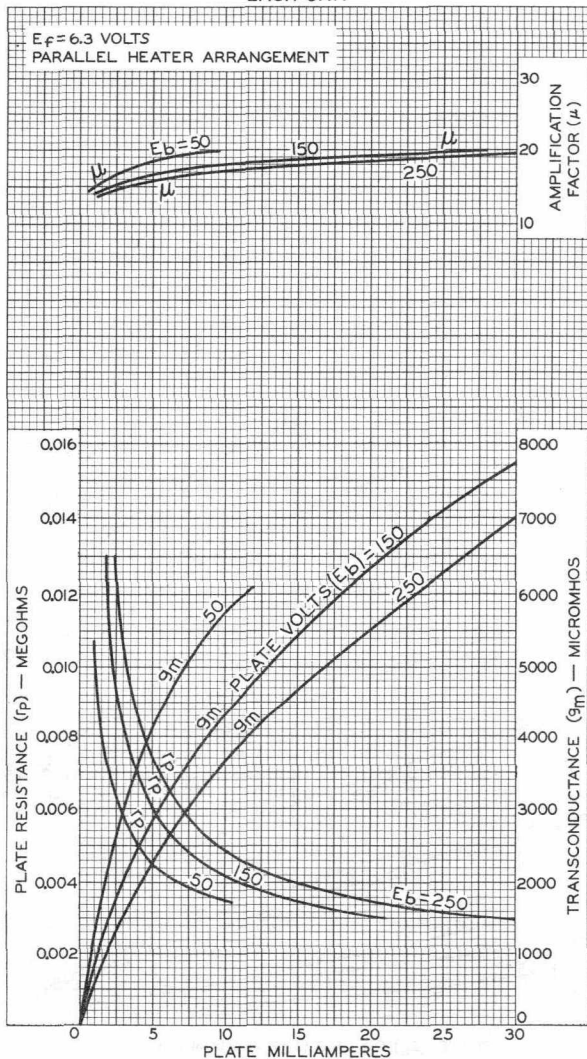


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AVERAGE CHARACTERISTICS EACH UNIT



ELECTRON TUBE DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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