PREMIUM TYPE 6072

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MEDIUM-MU TWIN TRIODE

9-PIN MINIATURE TYPE

For use in industrial and military applications critical as to microphonics and in which dependability is paramount. Characteristics are similar to those of the 12AY7.

GENERAL DATA

Electrical:

Heater, for Unipotential Cathodes:

Heater arrangement	*Series*	*Parallel*	
Voltage	12.6	6.3	ac or dc volts
Current	0.175	0.35	amp

Direct Interelectrode Capacitances (Approx.):°

Grid to plate (Each unit)	1.4	μμf
Grid to cathode and heater (Each unit)	1.5	μμf
Plate to cathode and heater:		
Unit No.1	0.5	μμf
Unit No.2	0.38	μμf

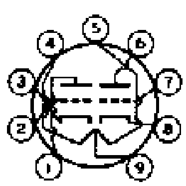
Characteristics, Class A_1 Amplifier (Each Unit):

Plate Voltage	250	volts
Grid Voltage	−4	volts
Amplification Factor	44	
Plate Resistance (Approx.)	25000	ohms
Transconductance	1750	μmhos
Plate Current	3	ma
Grid Voltage (Approx.) for plate μa = 10	−8	volts

Mechanical:

Operating Position	Any
Maximum Overall Length	2-3/16"
Maximum Seated Length	1-15/16"
Length, Base Seat to Bulb Top (Excluding tip)	1-9/16" ± 3/32"
Diameter	0.750" to 0.875"
Dimensional Outline	*See General Section*
Bulb	T6-1/2
Base	Small-Button Noval 9-Pin (JEDEC No. E9-1)
Basing Designation for BOTTOM VIEW	9A

Pin 1 – Plate of Unit No.2
Pin 2 – Grid of Unit No.2
Pin 3 – Cathode 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 – Grid of Unit No.1
Pin 8 – Cathode of Unit No.1
Pin 9 – Heater Mid-Tap

° Without external shield.

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AMPLIFIER — Class A_1

Values are for Each Unit

Maximum Ratings, ***Absolute Values:***

PLATE VOLTAGE	330 max.	volts
GRID VOLTAGE:		
Positive-bias value	0 max.	volts
PLATE DISSIPATION	1.65 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	100 max.	volts
Heater positive with respect to cathode	100 max.	volts
BULB TEMPERATURE (At hottest point on bulb surface)	165 max.	°C

Typical Operation:

In low-level stages of high-gain af amplifier with parallel heater arrangement

Plate-Supply Voltage	150	volts
Plate-Load Resistor	20000	ohms
Grid Resistor	0.1	megohm
Cathode Resistor	2700	ohms
Cathode Capacitor	40	μf
Voltage Gain	12.5	

Typical Operation as Resistance-Coupled Amplifier:

See RESISTANCE COUPLED AMPLIFIER CHART at end of tabulated data for this type

SPECIAL RATINGS & PERFORMANCE DATA

Shock Rating:

Impact Acceleration . . . . 600 max. g

Tubes are held rigid in four different positions in a Navy-Type, High-Impact (flyweight) Shock Machine and are subjected to 20 blows at a hammer angle of 42° (equivalent to the specified maximum impact acceleration).

Fatigue Rating:

Vibrational Acceleration. . . . . 2.5 max. g

This test is performed for a period of 100 hours minimum at a frequency of 25 cycles per second.

Heater-Cycling Life Performance:

Cycles of Intermittent Operation. . . . 2000 min. cycles

Under the following conditions: heater volts = 7.5 cycled one minute on and one minute off, heater 135 volts positive with respect to cathode, and all other elements connected to ground.

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OPERATING CONDITIONS AS RESISTANCE-COUPLED AMPLIFIER (Each Unit)

With Effective Source Impedance of 200 ohms (Approx.)

Plate-Supply Voltage	90			volts
Plate Load Resistor	0.1	0.24	0.51	megohm
Grid Resistor (Of following stage)	0.24	0.51	1	megohm
Cathode Resistor	2100	4800	10000	ohms
Peak Output Voltage	14	16	16	volts
Voltage Gain▲	25	27	27	

Plate-Supply Voltage	180			volts
Plate Load Resistor	0.1	0.24	0.51	megohm
Grid Resistor (Of following stage)	0.24	0.51	1	megohm
Cathode Resistor	1500	3100	7200	ohms
Peak Output Voltage	34	35	35	volts
Voltage Gain▲	28	28	29	

Plate-Supply Voltage	300			volts
Plate Load Resistor	0.1	0.24	0.51	megohm
Grid Resistor (Of following stage)	0.24	0.51	1	megohm
Cathode Resistor	1300	2700	6000	ohms
Peak Output Voltage	64	64	64	volts
Voltage Gain▲	29	31	31	

With Effective Source Impedance of 0.1 Megohm (Approx.)

Plate-Supply Voltage	90			volts
Plate Load Resistor	0.1	0.24	0.51	megohm
Grid Resistor (Of following stage)	0.24	0.51	1	megohm
Cathode Resistor	3000	6700	12000	ohms
Peak Output Voltage	17	18	20	volts
Voltage Gain▲	23	25	26	

Plate-Supply Voltage	180			volts
Plate Load Resistor	0.1	0.24	0.51	megohm
Grid Resistor (Of following stage)	0.24	0.51	1	megohm
Cathode Resistor	1900	4100	8100	ohms
Peak Output Voltage	38	41	44	volts
Voltage Gain▲	27	28	29	

▲ At 2 volts (rms) output.

Note: Coupling capacitors should be selected to give desired frequency response. Cathode resistors should be adequately bypassed.

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Plate-Supply Voltage	300			volts
Plate Load Resistor	0.1	0.24	0.51	megohm
Grid Resistor (Of following stage)	0.24	0.51	1	megohm
Cathode Resistor	1600	3400	6700	ohms
Peak Output Voltage	68	72	76	volts
Voltage Gain▲	28	30	30	

See Circuit Diagram 1

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E_{bb}	R_p	R_g	R_k	C_k°	C°	E_o	V.G.*
90	0.1	0.24	1800	—	—	13	24
	0.24	0.51	3700	—	—	14	26
	0.51	1.0	7800	—	—	16	27
180	0.1	0.24	1300	—	—	31	27
	0.24	0.51	2800	—	—	33	29
	0.51	1.0	5700	—	—	33	30
300	0.1	0.24	1200	—	—	58	28
	0.24	0.51	2300	—	—	30	30
	0.51	1.0	4800	—	—	56	31

* At 2 volts (RMS) output.

° Coupling capacitors should be selected to give desired frequency response. Cathode resistors should be adequately bypassed.

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