

SHARP-CUTOFF PENTODE

Miniature type used as audio amplifier in applications requiring reduced microphonics, leakage noise, and hum. Especially useful in the input stages of medium-gain public-address systems, home sound recorders, and general-

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audio systems. Outline 6B, **Outlines** section. Tube requires miniature nine-socket and may be mounted in any position. For operation as resistance-amplifier, refer to **Resistance-Coupled Amplifier** section.

Heater Voltage (ac/dc)	6.3	volts
Heater Current	0.15	ampere
Peak Heater-Cathode Voltage:		
Heater negative with respect to cathode	100 max	volts
Heater positive with respect to cathode	100 max	volts
Direct Interelectrode Capacitances:		
Pentode Connection:		
Grid No.1 to Plate	0.11 max	pf
Grid No.1 to Cathode, Heater, Grid No.2, and Grid No.3	2.7	pf
Plate to Cathode, Heater, Grid No.2, and Grid No.3	2.4	pf
Triode Connection*:		
Grid No.1 to Plate	1.4	pf
Grid No.1 to Cathode and Heater	1.4	pf
Plate to Cathode and Heater	0.85	pf

* Grid No.2 and grid No.3 connected to plate.

Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values):	Triode Connection*	Pentode Connection	
Plate Voltage	275 max	330 max	volts
Grid-No.2 (Screen-Grid) Voltage	—	See curve page 75	
Grid-No.2 Supply Voltage	—	330 max	volts
Grid-No.1 (Control-Grid) Voltage:			
Negative-bias value	-55	-55 max	volts
Positive-bias value	0 max	0 max	volts
Plate Dissipation	1.7 max	1.25 max	watts
Grid-No.2 Input:			
For grid-No.2 voltages up to 165 volts	—	0.25 max	watt
For grid-No.2 voltages between 165 and 330 volts	—	See curve page 75	

CHARACTERISTICS:

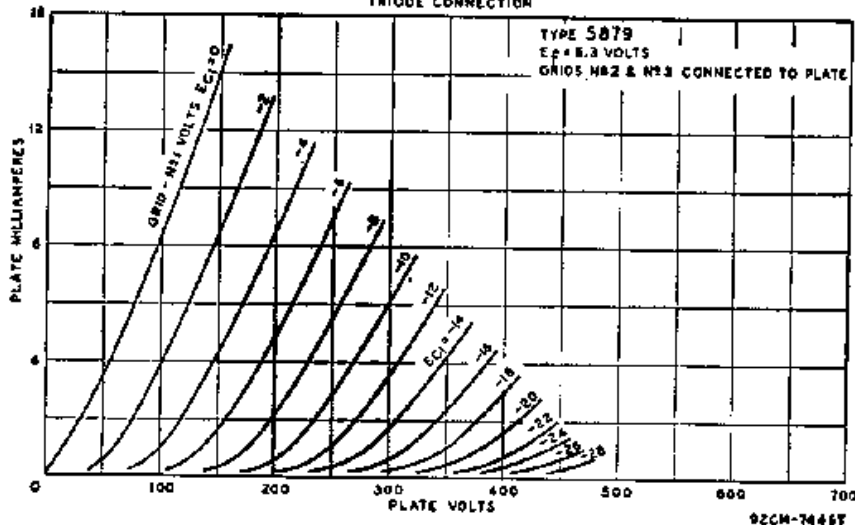
Plate Voltage	100	250	250	volts
Grid No.3	—	—	Connected to cathode at socket	
Grid-No.2 Voltage	—	—	100	volts
Grid-No.1 Voltage	-3	-8	-3	volts
Amplification Factor	21	21	—	
Plate Resistance (Approx.)	0.017	0.0137	2	megohms
Transconductance	1240	1530	1000	μmhos
Grid-No.1 Voltage (Approx.) for plate current of 10 μa				
Plate Current	2.2	5.5	—	volts
Grid-No.2 Current	—	—	0.4	ma

MAXIMUM CIRCUIT VALUE:

Grid-No.1-Circuit Resistance	2.2 max megohms
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* Grid No.2 and grid No.3 connected to plate.

AVERAGE CHARACTERISTICS
TRIODE CONNECTION



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See Circuit Diagram 3

E _{bb}	R _p	R _g	R _{g2}	R _k	C _{g2}	C _k	C	E _o *	V _o
90	0.1	0.1	0.35	1700	0.044	4.6	0.020	13	29
		0.22			0.046	4.5	0.012	17	39
		0.47			0.047	4.4	0.006	20	47
	0.22	0.22	0.80	3000	0.034	3.2	0.010	15	43
		0.47			0.035	3.1	0.005	21	59
		1.0			0.036	3.0	0.003	24	67
0.47	0.47	1.9	7000	0.021	1.8	0.005	21	59	
	1.0			0.022	1.7	0.003	25	75	
	2.2			0.023	1.7	0.002	28	87	
180	0.1	0.1	0.35	700	0.060	7.4	0.020	24	39
		0.22			0.062	7.3	0.012	28	56
		0.47			0.064	7.2	0.006	33	65
	0.22	0.22	0.80	1200	0.045	5.5	0.010	24	65
		0.47			0.046	5.3	0.005	31	87
		1.0			0.048	5.2	0.003	34	101
0.47	0.47	1.9	2500	0.033	3.5	0.005	27	98	
	1.0			0.034	3.4	0.003	32	122	
	2.2			0.035	3.3	0.002	37	140	
300	0.1	0.1	0.35	300	0.075	10.8	0.020	25	51
		0.22			0.077	10.6	0.012	32	68
		0.47			0.080	10.5	0.006	35	83
	0.22	0.22	0.80	600	0.056	7.9	0.010	28	81
		0.47			0.057	7.5	0.005	37	109
		1.0			0.058	7.4	0.003	41	123
0.47	0.47	1.3	1200	0.044	5.3	0.005	34	125	
	1.0			0.046	5.2	0.003	42	152	
	2.2			0.047	5.1	0.002	48	174	

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As Triode:

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See Circuit Diagram 1

90	0.047	0.047	-	1800	-	2.9	0.060	9	10
		0.1	-	2100	-	2.4	0.033	12	11
		0.22	-	2200	-	2.3	0.016	14	21
	0.1	0.1	-	3200	-	1.8	0.027	10	12
		0.22	-	3900	-	1.3	0.015	13	13
		0.47	-	4300	-	1.0	0.007	16	13
0.22	0.22	-	6200	-	0.87	0.015	12	13	
	0.47	-	8100	-	0.53	0.006	16	13	
	1.00	-	9000	-	0.49	0.003	19	14	
180	0.047	0.047	-	1200	-	3.5	0.063	21	12
		0.1	-	1600	-	2.6	0.033	29	13
		0.22	-	1800	-	2.4	0.016	35	13
	0.1	0.1	-	2200	-	1.9	0.031	26	13
		0.22	-	2900	-	1.35	0.015	33	14
		0.47	-	3400	-	1.1	0.007	40	14
0.22	0.22	-	4500	-	0.92	0.015	28	14	
	0.47	-	6400	-	0.61	0.006	39	14	
	1.00	-	8200	-	0.52	0.003	47	14	
300	0.047	0.047	-	1100	-	3.9	0.063	42	13
		0.1	-	1500	-	2.8	0.033	65	13
		0.22	-	1700	-	2.5	0.016	71	14
	0.1	0.1	-	2000	-	2.1	0.032	45	15
		0.22	-	3400	-	1.4	0.015	74	15
		0.47	-	3700	-	1.1	0.007	83	15
0.22		-	4300	-	0.97	0.015	50	15	
0.22	0.47	-	7200	-	0.63	0.007	88	15	
	1.00	-	7400	-	0.63	0.003	94	15	

* Peak volts.