



VACUUM SWITCHES



POWER TRIODES










POWER TETRODES



ACCESSORIES

# SUMMARY CATALOGUE

	<b>PL-175A Beam Pentode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		5.0	14.5	400	4,000	350	800	\$ 50.00
400-watt beam pentode incorporating patented Penta vane-type suppressor grid. Replaces 4-400A; 20% to 40% increase in output in Class-AB <sub>1</sub> linear amplifier applications. Suppressor grid terminates in base shell and is designed to be operated at ground potential.								
	<b>PL-177A Beam Pentode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		6.0	3.2	75	2,000	175	600	\$ 29.00
Small, highly efficient beam pentode. Penta vane-type suppressor grid. Maximum ratings apply to 175 Mc. Highly efficient at plate voltages as low as 600 volts. Excellent as low-distortion linear r-f, a-f amplifier. Maximum useful power output. Class-AB <sub>1</sub> , 220 watts.								
	<b>PL-177WA Beam Pentode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		6.0	3.2	75	2,000	175	600	\$ 33.50
Ruggedized version of PL-177A. Directly interchangeable. May be mounted in any position. Withstands high levels of shock and vibration. Exclusive vane-type suppressor grid permits high efficiency at relatively low plate voltages.								
	<b>PL-195 Beam Pentode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		6.0	17	4000	5,000	2000	1000	\$350.00
Over 5000 watts useful power output, Class-AB <sub>1</sub> . High power gain, good efficiency at relatively low plate voltages. Forced-air cooled. Oxide-coated unipotential cathode. Ideal for low-distortion single-sideband or multi-tone linear amplifier service.								
	<b>PL-210 Beam Pentode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		6.0	85	5000	7,500	2500	1500	\$475.00
Ten kilowatts useful power output in Class-AB <sub>1</sub> operation. Requires only 165 volts, peak, of RF grid drive for full output. Excellent intermodulation distortion characteristics, high efficiency. Thoriated tungsten filament. Forced-air cooled.								
	<b>PL-264 Beam Pentode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		6.0	17	3000	5,000	2000	1000	\$370.00
Small, high-power ceramic beam pentode. Length is only 5.7 inches, diameter 4.4 inches. Capable of up to 5000 watts useful power output, Class-AB <sub>1</sub> . Excellent intermodulation distortion characteristics. Low input capacitance. Oxide-coated cathode. Forced-air cooled.								
	<b>PL-4E27A Beam Pentode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		5.0	7.5	125	4,000	200	750	\$ 45.00
Popular beam pentode used as amplifier, oscillator, or modulator. Will deliver over 400 watts of usable power output with only two watts driving power in Class-C service; up to 280 watts as Class-AB <sub>1</sub> linear amplifier. Maximum frequency for full ratings, 75 Mc.								



**PL-6549  
Beam Pentode**

Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
6.0	3.2	75	2,000	175	600	\$ 29.00

Similar to PL-177A except conventional suppressor grid. Recommended for replacement use only.



**PL-8295/PL-172  
Beam Pentode**

Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
6.0	8.2	1000	3,000	1000	600	\$142.00

1000-watt beam pentode. Provides high power gain and good efficiency at relatively low plate voltages. Cooled by forced air. Widely used as Class-AB<sub>1</sub> linear amplifier, delivering over 1500 watts useful power output. Also excellent for Class-AB<sub>2</sub>, Class-B, and Class-C service.

Spec. MIL-E-1/1350 \*



**PL-8295A  
Beam Pentode**

Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
6.0	8.2	1000	3,000	1000	600	\$152.00

Ceramic beam pentode. Direct replacement for the PL-8295/172. Extremely resistant to shock and vibration; high allowable operating temperature capability. Requires less cooling air than PL-8295/172. Ideal in linear amplifier applications requiring ruggedness, reliability and high efficiency.



**PL-8432  
Beam Pentode**

Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
6.0	8.2	1000	3,000	1000	600	\$152.00

Same outstanding performance as the PL-8295/172 and PL-8295A, but physically smaller. Ceramic construction provides resistance to shock and vibration. With tube in companion PL-209A socket, requires only 37 c.f.m. of cooling air at 0.18 inches of water.



**PL-4D21 (4-125A)  
Power Tetrode**

Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
5.0	6.5	125	3,000	225	600	\$ 36.00

Popular 125-watt power tetrode, especially suited for use as r-f power amplifier. Can be operated at full ratings at frequencies as high as 120 Mc., and with reduced ratings up to 240 Mc. Can also be used as a-f power amplifier and modulator.

Spec. MIL-E-1/776 \*



**PL-4D21A  
Power Tetrode**

Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
5.0	6.5	175	3,000	225	600	\$ 37.50

Exclusive Penta tetrode similar in all characteristics to PL-4D21 (above), but has plate dissipation rating of 175 watts. Widely used in broadcast and communications transmitters where added reliability is desired.



**PL-4-400A  
Power Tetrode**

Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
5.0	14.5	400	4,000	350	800	\$ 48.00

Widely used power tetrode. Excellent as r-f amplifier and a-f amplifier and modulator. Penta unique ribbed-anode construction provides large effective plate radiating area, with minimum plate, screen-grid and control-grid temperatures.








Spec. MIL-E-1/887 \*



**PL-4X500A  
Power Tetrode**

Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
5.0	13.5	500	4,000	350	500	\$125.00

External-anode tetrode suitable for use as r-f amplifier and oscillator. Can be operated efficiently over a large portion of VHF region because of its small size and low inductance leads. Widely used in TV and FM broadcast transmitters.

	<b>PL-5D22 (4-250A) Power Tetrode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		5.0	14.5	250	4,000	350	800	\$ 46.50
<p>Power tetrode, used in communications and amateur equipment. Can be used at full ratings up to 75 Mc. and with reduced ratings to 120 Mc. Unusually small amount of driving power normally required for specified value of power output. Useful as r-f power amplifier, or a-f amplifier and modulator.</p> <p style="text-align: right;">Spec. MIL-E-1/812A *</p>								
	<b>PL-6775 Power Tetrode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		5.0	14.5	400	4,000	350	800	\$ 50.00
<p>Ruggedized power tetrode, unilaterally interchangeable with 4-400A. Can be mounted in any position, will withstand high levels of shock and vibration. Design minimizes possibility of inter-electrode shorts. One-piece plate seal and cap can't loosen, fall off, or easily break. Excellent in applications where high level of reliability is required.</p>								
	<b>PL-8165/PL-4-65A Power Tetrode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		6.0	3.5	65	2,000	150	600	\$ 27.00
<p>Small, popular power tetrode, widely used in mobile communications equipment. Can be operated at full input at frequencies up to 150 Mc. For r-f amplifier, oscillator, or a-f amplifier, modulator applications.</p> <p style="text-align: right;">Spec. MIL-E-1/876/A *</p>								
	<b>PL-8166/PL-4-1000A Power Tetrode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	Screen Voltage Max.	Price
		7.5	21	1000	6,000	700	1000	\$132.00
<p>Beam power tetrode suitable for use as r-f amplifier and oscillator, and as a-f amplifier and modulator. Can be used at frequencies up to 110 Mc. Widely used in FM broadcasting, television, and other services.</p> <p style="text-align: right;">Spec. MIL-E-1/37 *</p>								
	<b>PL-254W Power Triode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	$\mu$	Price
		5.0	7.5	100	4,000	225	25	\$ 25.00
<p>100-watt plate dissipation radiation-cooled triode. Used as r-f power amplifier, oscillator, frequency multiplier. Will deliver up to 400 watts plate power output as Class-C CW or FM amplifier. Widely used as VHF power amplifier in base-station communications equipment.</p>								
	<b>PL-6569 Power Triode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	$\mu$	Price
		5.0	14.5	250	4,000	300	45	\$ 37.50
<p>High-mu power triode designed especially for grounded-grid r-f amplifier service. Provides power gains as high as ten in grounded-grid use. Also capable of good performance in other applications. Neutralization not normally required in grounded-grid service. Will deliver up to 800 watts power output as Class-B linear r-f amplifier.</p> <p style="text-align: right;">Spec. MIL-E-1/1370 (NAVY) *</p>								
	<b>PL-6580 Power Triode</b>	Fil. Volts	Fil. Current Amps.	Plate Diss. Max. W.	Plate Volt Max.	Plate Current Ma., Max.	$\mu$	Price
		5.0	14.5	400	4,000	350	45	\$ 45.00
<p>Same as PL-6569 (above), but with 400-watt plate dissipation rating. Will deliver over 1000 watts of power output in Class-C CW or FM grounded-grid use, over 900 watts in Class-B grounded-grid linear amplifier service.</p>								

\* JAN branding available

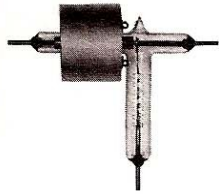


### PL-250R High-Voltage Rectifier

Fil. Volts	Fil. Current Amps.	...	Plate Volt Max.	Plate Current Ma., Max.	...	Price
5.0	10.5	...	60,000	250	...	\$ 36.00

High-vacuum diode rectifier. Will deliver 160 milliamperes at 24,000 volts to capacitor-input filter with 21,000 volts single-phase supply. Four PL-250R's will provide 500 milliamperes at 38,000 volts to choke-input filter with 42,000 volt single-phase supply. Cooled by convection and radiation.

### Vacuum Switches

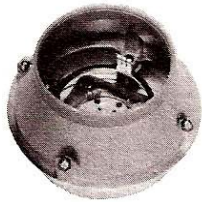
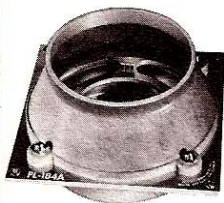


Type	Voltage, Maximum	Current Max. Ampere AC or DC Pulse		Coil	Price
PL-RI	21,000	6	150	Not supplied; requires 1100 ampere-turns	\$33.00
PL-169A	21,000	30	500	Not supplied; requires 1900 ampere-turns	\$40.00
PL-186	21,000	6	—	Not supplied; requires 1000 ampere-turns	\$38.00
PL-187	21,000	30	500	Integral; 28 V, 500 Ma., D-C	\$58.00
PL-190	21,000	6	150	Integral; 28 V, 250 Ma., D-C	\$58.00
PL-191	21,000	6	—	Not supplied; requires 1000 ampere-turns	\$28.00

Penta vacuum switches are single-pole, double-throw switches enclosed in evacuated glass envelopes. They are ideal for use wherever compact, fast-acting relays are required to switch high-voltage circuits under a wide range of ambient atmospheric conditions, including explosive atmospheres, and in other applications where exposed-contact relays would be unsuitable.

These vacuum switches are operated by external actuating coils, which are excited by direct current and designed so that the soft-iron pole piece and the armature assembly enclosed in the envelope act to complete the magnetic circuit.

### Accessories



Type	Description	Price
PL-C1	Glass chimney for PL-4-400A, PL-175A, PL-6580, PL-6775.	\$ 6.50
PL-C184	Plastic chimney, only, for PL-8295/175 and PL-8295A. Same chimney as used on PL-184 and PL-184A sockets (see below).	\$ 5.00
PL-184	Socket for PL-8295/172 and PL-8295A, including the chimney; built-in screen-grid and suppressor-grid by-pass capacitors. Includes contact provisions for all base pins and screen-grid and suppressor-grid ring terminals. Provides proper air distribution for correct tube cooling at full plate dissipation rating	\$53.00
PL-184A	Socket for PL-8295/172 and PL-8295A, including the chimney. Same as socket PL-184 (above), except that suppressor-grid contacts are grounded.	\$48.00
PL-205A	Socket for PL-195. Includes chimney, built-in screen-grid by-pass capacitors. Suppressor-grid contacts grounded. Provides proper distribution of air for correct cooling of tube at full plate dissipation.	\$60.00
PL-209A	Socket for PL-8432. Includes chimney, screen-grid by-pass capacitors. Suppressor-grid contacts grounded. Distributes air for adequate cooling at full rated plate dissipation.	\$48.00
PL-261A	Socket for PL-210. Same features as PL-205A socket (above), similar in appearance.	\$60.00
PL-265A	Socket for PL-264. Includes chimney, screen-grid by-pass capacitors. Provides for correct distribution of air for proper tube cooling at full rated plate dissipation.	\$48.00