from JEDEC release #3848, Aug. 20, 1962

CERAMIC VELOCITRON* TUBES

7506/ZV1012	**500 to 3,000 mc**
7505/ZV1010	**700 to 3,000 mc**
7049/ZV1009	**1,500 to 6,000 mc**

Extremely rugged. Maximum heat, shock and vibration resistance.

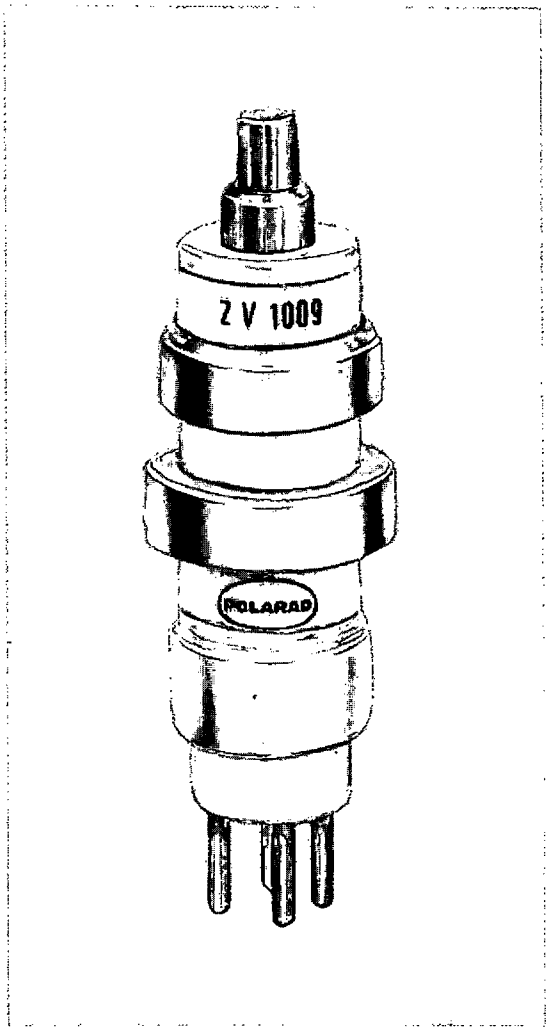
APPLICATIONS

An integrated family of rugged Velocitron*† reflex klystrons for cw, fm, or pulse operation in an external cavity.

- *In microwave signal generators:* Output power is adequate for generators providing more than 0 dbm output. Velocitrons permit fm, pulse, and cw signal generation.
- *In microwave signal sources:* Suitable for use as a low power transmitter in antenna radiation patterns, standing wave, and impedance measurements.
- *In spectrum analyzers:* Provides low incidental fm in panoramic displays due to their low microphonics and high frequency stability.
- *In microwave receivers:* Ideal for local oscillator operation in receivers with AFC because of their frequency control characteristics.

FEATURES

- Maximum shock and vibration resistance achieved by all-ceramic construction.
- Maximum heat resistance. Guaranteed for operation up to 250°C seal temperature. No cooling necessary.
- Interchangeable. All three klystrons use same power supplies and mechanical fittings.
- Virtually non-microphonic characteristics provided by rugged internal construction.
- Can be operated cw, pulsed, and fm.
- Low distortion fm.
- Breakage in handling minimized.
- 7505/ZV1010 replaces commercial klystrons 5837 and 6BM6; 7049/ZV1009 replaces 5836 and 6BL6.



Velocitron*† Type 7049/ZV1009

*Trade Mark Registered
†Manufactured under Western Electric Patents

POLARAD ELECTRONICS CORPORATION 43-20 34th St., Long Island City 1, N. Y. • EXeter 2-4500

SPECIFICATIONS

MECHANICAL DATA

Base ..... A4-76, Peewee 4 Pin.

Cap ..... C1-3, skirted miniature.

Cooling ..... Convection and conduction.
Contact rings make direct peripheral contact with metallic parts of the external cavity.

Mounting Position ..... Any.

CONNECTIONS:

Pin 1 ..... Control Electrode
Pin 2 ..... Heater
Pin 3 ..... Cathode
Pin 4 ..... Heater
Lower Contact Ring ..... 1st Resonator Grid
Upper Contact Ring ..... 2nd Resonator Grid
Cap ..... Reflector

ELECTRICAL DATA

HEATER CHARACTERISTICS:

Heater Voltage, AC or DC ..... 6.3 ±0.5 volts.
Heater Current ..... 680 ma.

RATINGS (Absolute Values):

Resonator Voltage ..... 350 volts dc max.
Resonator Current ..... 35 ma dc max.

Reflector Voltage ..... —700 volts dc max. to —35 volts dc min.
Control Electrode Voltage ..... +20 to —150 volts dc max.
Control Electrode Current ..... 12 ma dc max.
Heater-Cathode Voltage ..... ±45 volts dc max.
Power Input ..... 12 watts max.
Seal Temperature ..... 250 degrees C max.

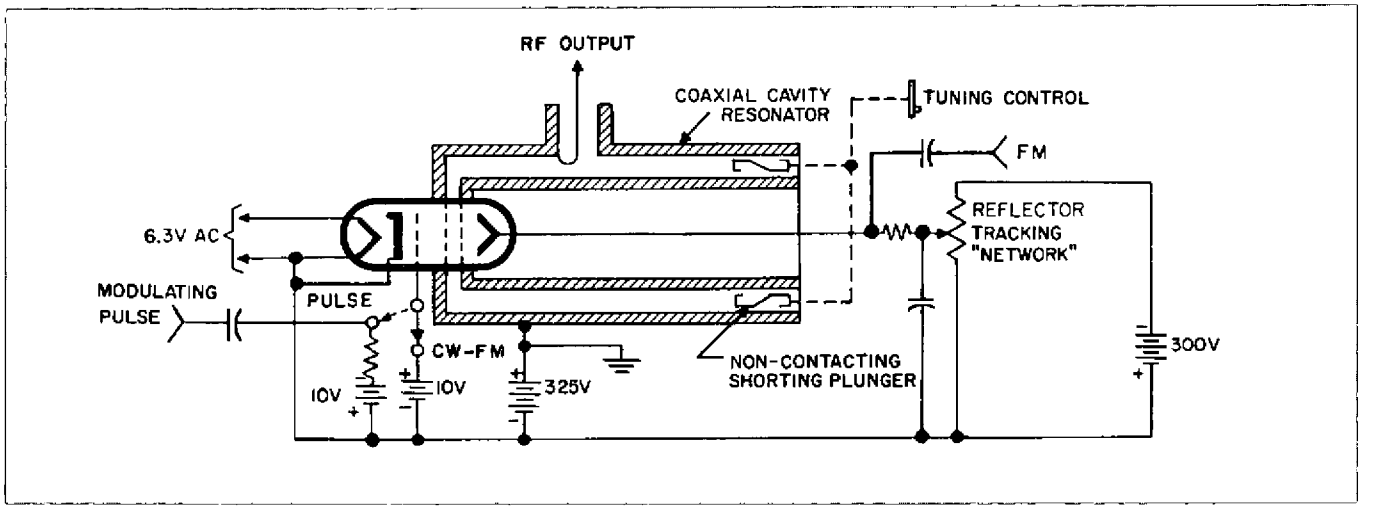


Figure 1. CW, FM or Pulse-Modulated Oscillator Circuit, Using a Velocitron Ceramic Reflex Klystron

TYPICAL OPERATION AS A CW OSCILLATOR

	7506/ZV1012	7505/ZV1010	7049/ZV1009
Reflector Mode	1¾	1¾	2¾
Cavity Mode	¼	¼	¾
Frequency	750 mc	1500 mc	3200 mc
Resonator Voltage	325 volts	325 volts	325 volts
Cathode Current	28 ma	28 ma	28 ma
Reflector Voltage (Approx.)	—110 volts	—200 volts	—120 volts
Control Electrode Voltage (Full Power Output)	+10 volts	+10 volts	+10 volts
Power Output Cutoff Voltage	+3 volts	+3 volts	+3 volts
Electronic Tuning Range (Between Half Power Points)	3 mc	6 mc	6 mc

TYPICAL OPERATION AS A PULSE-MODULATED OSCILLATOR:

The tubes can be pulse modulated over most of the cw frequency range. The general conditions are the same as for cw operation except as shown below.

Control Electrode Voltage ..... —10 volts
Pulse Modulation Voltage ..... +20 volts
Pulse Repetition Rate ..... Limited only by capabilities of external modulator.
Minimum Pulse Duration ..... 0.5 microsecond
Rise Time ..... 0.1 microsecond
Decay Time ..... 0.1 microsecond

Note: Specifications subject to change without notice.

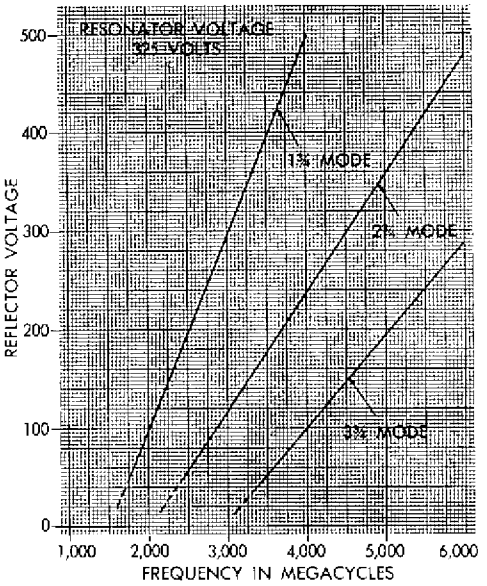


Figure 2. Typical Reflector Voltage vs. Frequency
Type 7049/ZV1009

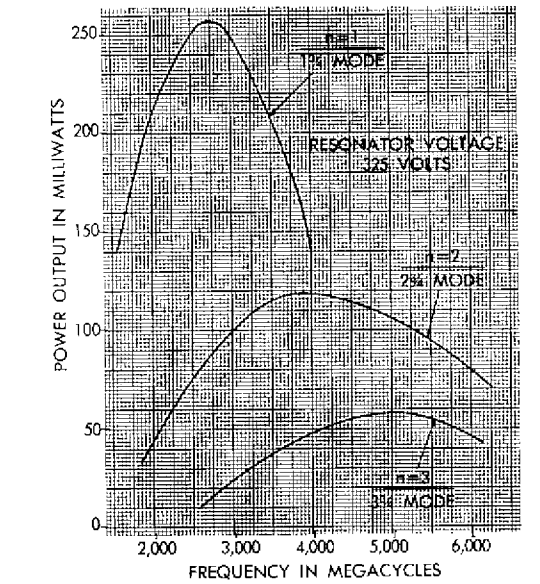
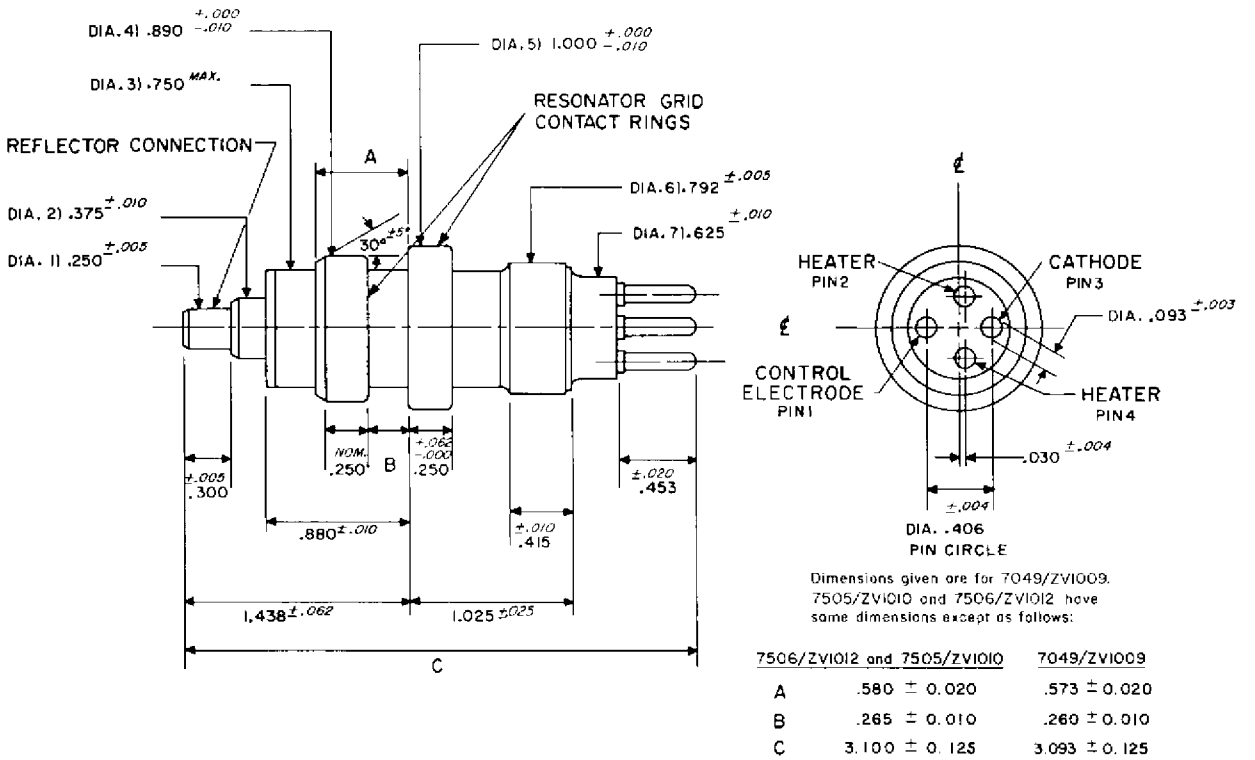


Figure 3. Typical Curve of Power Characteristics
Type 7049/ZV1009



Dimensions given are for 7049/ZV1009. 7505/ZV1010 and 7506/ZV1012 have same dimensions except as follows:

	7506/ZV1012 and 7505/ZV1010	7049/ZV1009
A	.580 ± 0.020	.573 ± 0.020
B	.265 ± 0.010	.260 ± 0.010
C	3.100 ± 0.125	3.093 ± 0.125

Figure 4. Outline Drawing

*Trade Mark Registered

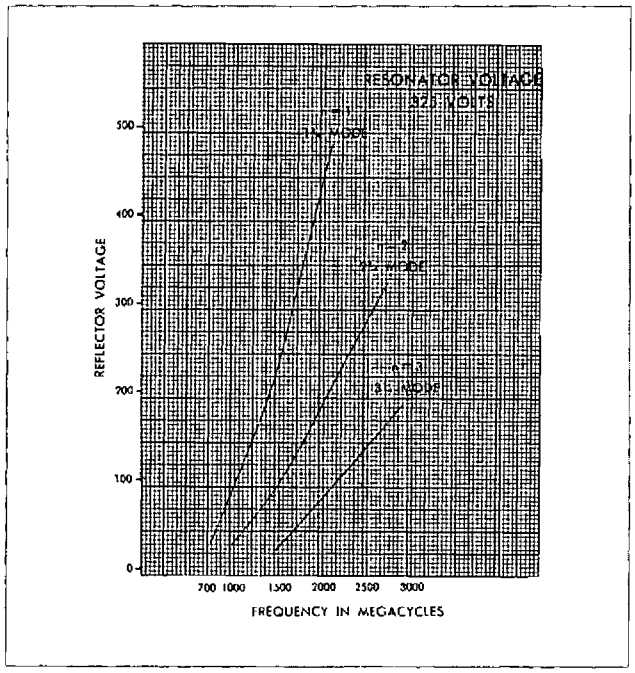


Figure 5. Typical Reflector Voltage vs. Frequency
Type 7505/ZV1010

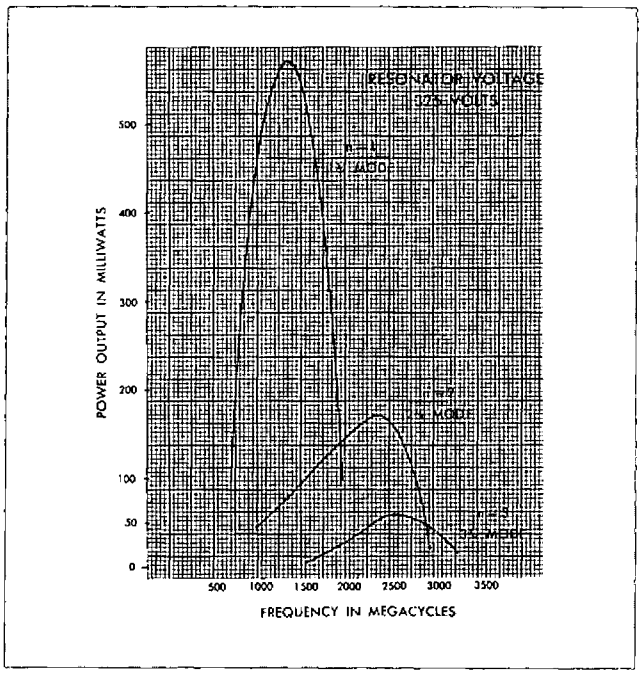


Figure 6. Typical Curve of Power Characteristics
Type 7505/ZV1010

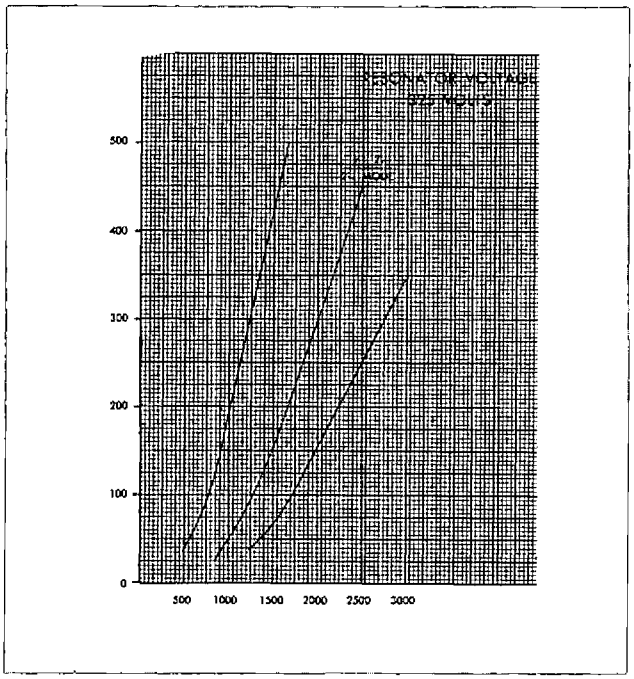


Figure 7. Typical Reflector Voltage vs. Frequency
Type 7506/ZV1012

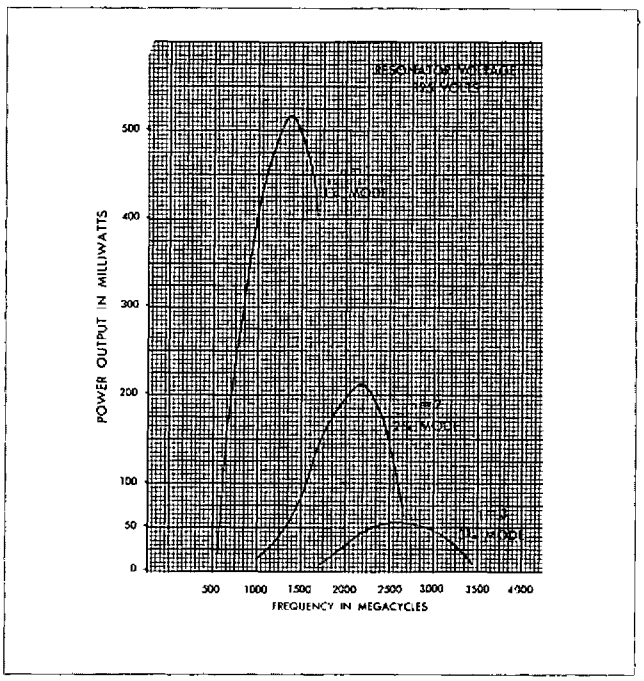


Figure 8. Typical Curve of Power Characteristics
Type 7506/ZV1012