CERAMIC VELOCITRON* TUBES

8052/ZV1011 4.0 to 11.0 kmc

Extremely rugged. Maximum heat, shock and vibration resistance.

APPLICATIONS

Part of 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 and metal construction.
- Maximum heat resistance. Guaranteed for operation up to 250°C seal temperature. No cooling necessary.
- Virtually non-microphonic characteristics provided by rugged internal construction.
- Can be operated cw, pulsed and fm.
- Low distortion fm.
- Breakage in handling minimized.
- 8052/ZV1011 replaces commercial klystrons 5721, 6390, and QK-823.

Velocitron* Type 8052/ZV1011

*Registered Trade Mark

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

from JEDEC release #3848, Aug. 20, 1962

SPECIFICATIONS

MECHANICAL DATA

Base ..... A4-76, Peewee 4 Pin, fits Amphenol #78-545 socket or equivalent.

Cap ..... Require Ucinite #152005 mating plug or equivalent.

Cooling ..... Convection and conduction. Contact rings make direct 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 Sleeve ..... 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 ..... 1250 volts dc max.
Resonator Current ..... 22 ma dc max.

Reflector Voltage ..... —800 volts dc max. to —35 volts dc min.
Control Electrode Voltage ..... +20 to —150 volts dc max.
Control Electrode Current ..... 6 ma dc max.
Heater-Cathode Voltage ..... ±45 volts dc max.
Power Input ..... 28 watts max.
Seal Temperature ..... 250 degrees C max.

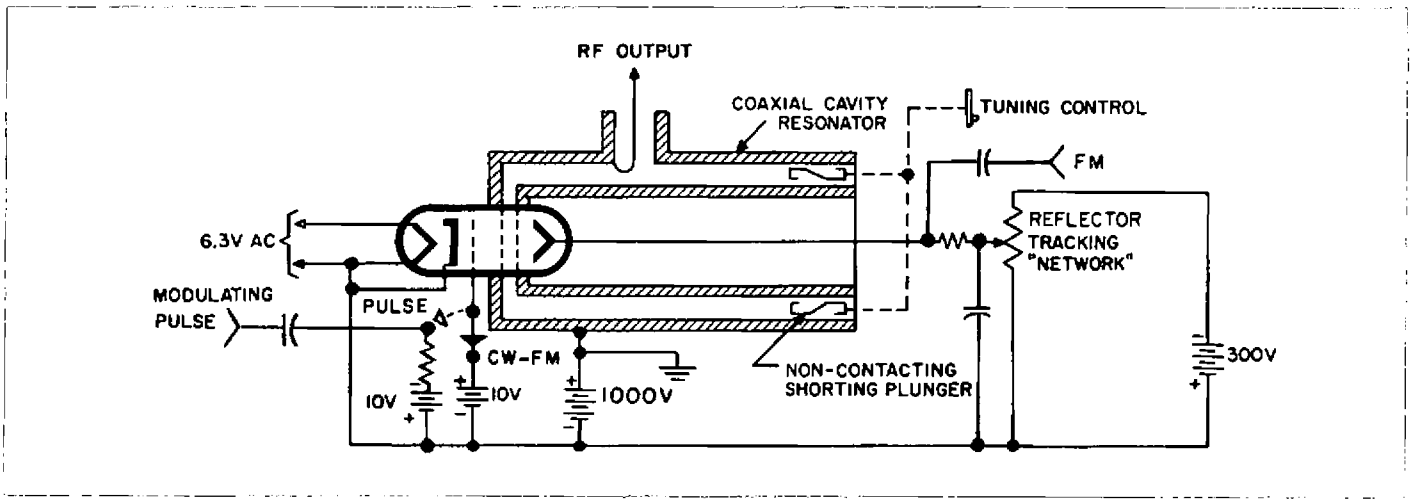

Figure 1. CW, FM or Pulse-Modulated Oscillator Circuit, Using a Velocitron Ceramic Reflex Klystron

TYPICAL OPERATION AS A CW OSCILLATOR

Reflector Mode	1¾	2¾	4¾
Cavity Mode	¾	¾	¾
Frequency	2.5 KMC	6.0 KMC	10.5 KMC
Resonator Voltage	1200 volts	1200 volts	1200 volts
Anode Current	24 ma	24 ma	24 ma
Reflector Voltage (Approx.)	—300 volts	—300 volts	—300 volts
Control Electrode Voltage (Full Power Output)	+10 volts	+10 volts	+10 volts
Power Output Cutoff Voltage	—5 volts	—5 volts	—5 volts
Electronic Tuning Range (Between Half Power Points)	6 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.

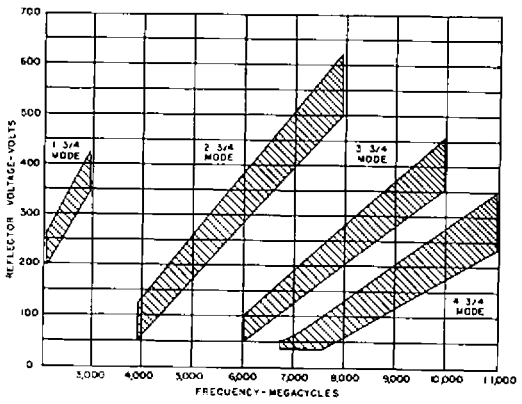

Figure 2. Typical Reflector Voltage vs. Frequency Characteristics

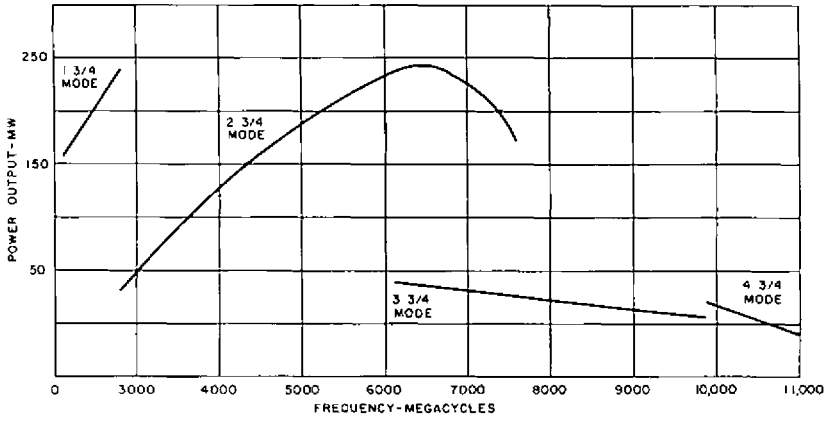

Figure 3. Typical Power Output vs. Frequency Characteristics

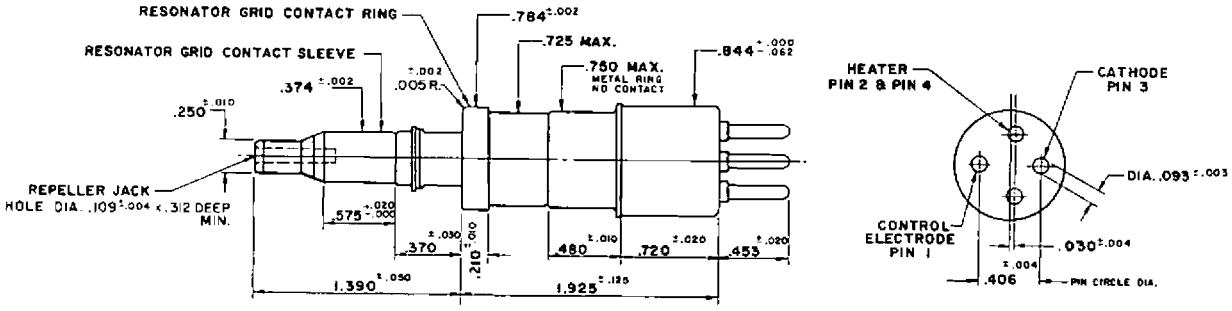

Figure 4. Outline Drawing

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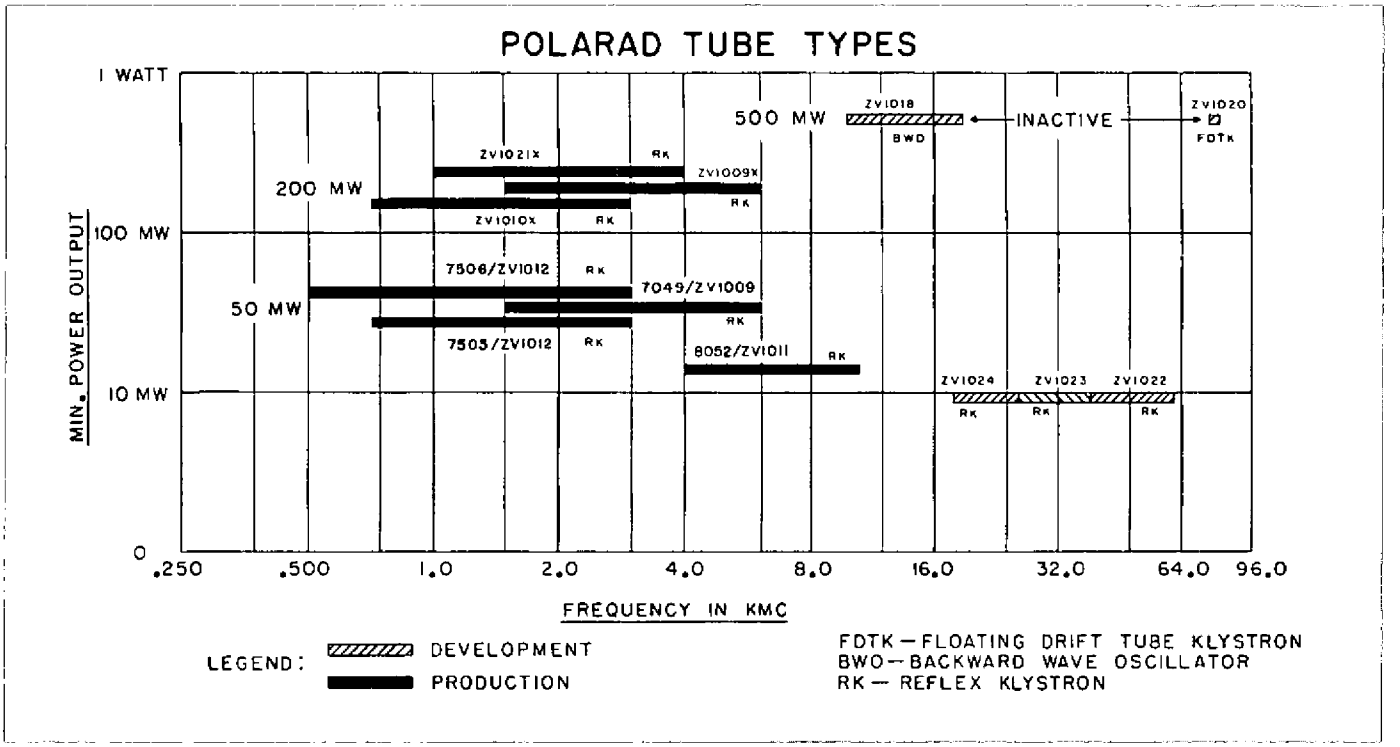

Figure 5. Frequency vs. Power Output

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PROVEN RELIABILITY