detection of high-frequency a-m signals, it must be remembered that a low resistance may affect the VSWR (see Figure 4). The bandwidth can also be increased by a decrease in the rf bypass capacitance. To do this, insert additional mica spacers (see Figure 1 and paragraph 5.2).

3.4 HETERODYNE MIXER. The Type 874-VQ has proved a useful heterodyne mixer, e.g. in frequency measurements.

3.5 DETECTOR IN SWEEP APPLICATIONS. When the Type 874-VQ is used as a detector for a signal from an oscillator whose output is controlled by a Type 874-VR Voltmeter Rectifier and a Type 1263-B Amplitude-Regulating Power Supply, there is no need to correct for frequency response, since errors in the diodes of the Types 874-VR and 874-VQ tend to cancel each other. However, irregularities of up to 10 percent may occur owing to the output crystal's response to harmonics generated by the input crystal. The measurement of a component with large insertion loss must be corrected for the nonlinearity of the diodes (refer to paragraph 2.3). If the oscillator is swept (e.g. by a Type 1750-A Sweep Drive) and the output from the Type 874-VQ is displayed on an oscilloscope, the display will normally be inverted. If the oscilloscope does not have a reversal switch, the picture can be righted by reversal of the connections to the vertical deflection plates.

Another method of reversal is to replace the diode in the Type 874-VQ with a reversed diode, Type 1N23BR. In this instance, however, much care must be taken to remove harmonic distortion in the oscillator to prevent errors due to the opposite polarity of the diodes in the amplitude-regulating Type 874-VR and the detector Type 874-VQ.

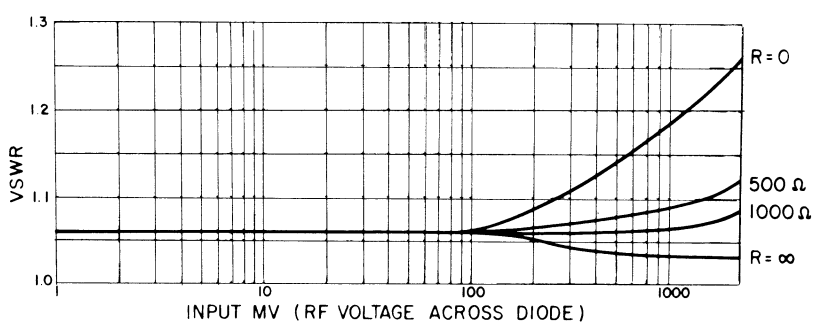

Figure 4.