

CIRCUIT GAIN PHASE vs. FREQUENCY

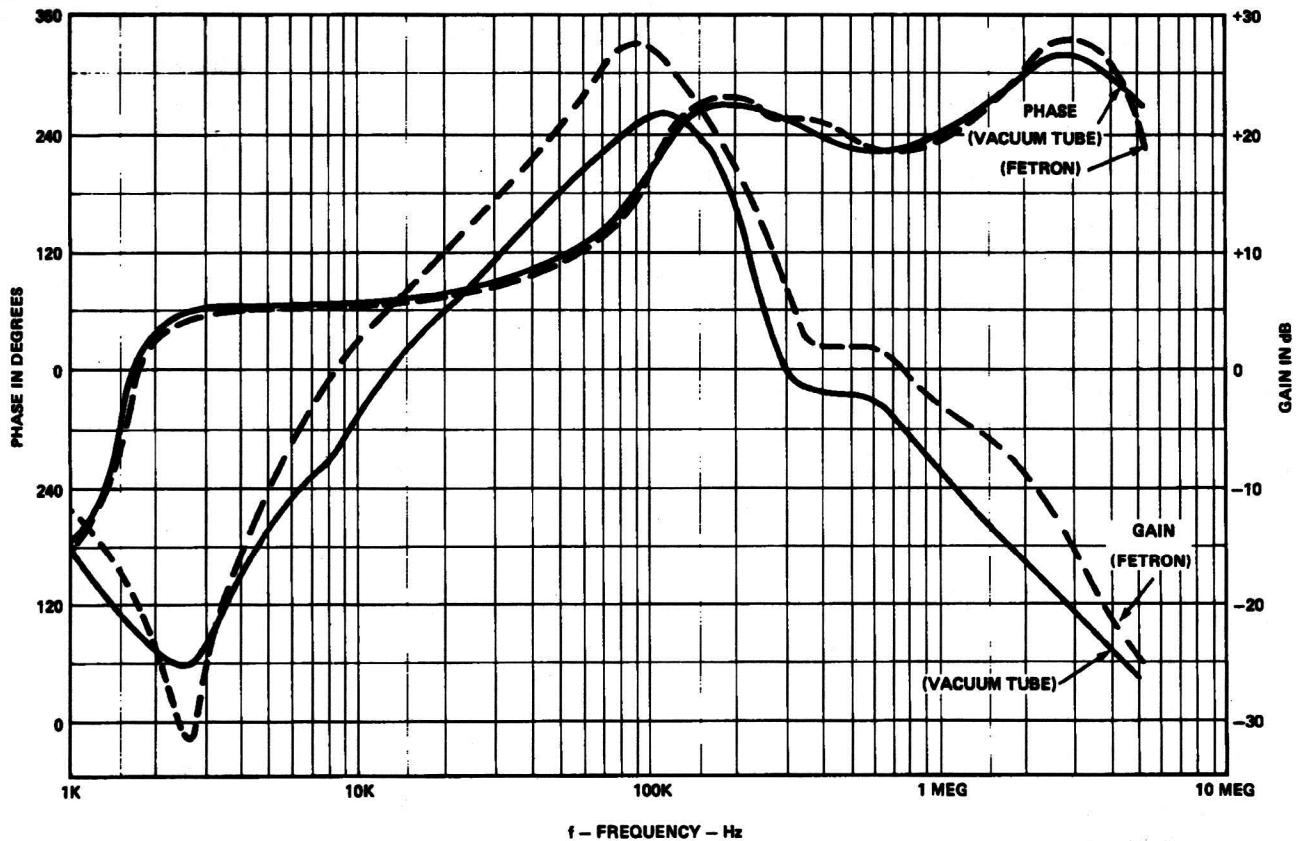


Figure 10. Frequency Response, FETRON vs. Vacuum Tube. The gain/phase curves for the FETRON and the vacuum tube are matched quite closely. No changes due to these functions are incurred. The FETRON reduces distortion due to upper harmonic by 15dB, a result of its true square law response.

FETRON BENEFITS

As a result of low initial cost of the FETRON and generous savings resulting from vacuum tube replacement, the FETRON is finding rapid and widespread acceptance. These cost savings result from the simple advantages the FETRON has over the vacuum tube. Primarily higher reliability, more stable operating characteristics, and lower power consumption. Add to this list the ease of replacement designed in by Teledyne, and the result is an irresistible opportunity for change.

Higher Equipment Reliability results from the lower operating temperature, less thermal wear on other parts, and the longer lifetime of the FETRON. Vacuum tubes have a useful life of only thousands of hours. Experience with FETRONs in the field has demonstrated a lifetime greater than one million hours, over a hundred years. The net result is extended equipment life, less down time and a savings of frayed nerves. The cost of standard industrial tube replace-

ments alone is about \$4.00 per year. Other components are estimated to be \$2.00 per year for each tube, resulting from thermal wear.

Maintenance Costs are drastically reduced since FETRONs do not require periodic replacement or frequent adjustment like the vacuum tube which begins to degrade immediately after installation. As a result, there is no change in signal transmission strength or quality degradation with time. A definite improvement in quality in most cases. Estimated savings for a typical thirty tube system are:

1. Local site - 3hrs x \$15/hr x 2 servicing/yr x 1/30 = \$3/tube/yr.
2. Remote site - 4hrs x \$25/hr x 2 servicing/yr x 1/30 = \$6.67/tube/yr.

Electric Bills are much lower because FETRONs use less than half the power of vacuum tubes. Air conditioning bills are lower too, and personnel efficiency goes up along with the