

THE NEW SYLVANIA 6BQ6GTA

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duced in the Sylvania Type 6BQ6GTA by a newly designed beam confining plate which acts as a shield to catch the electrons that may have strayed over or under the anode. This new plate is made in one piece with horizontal cross pieces that extend above and below the anode, up to the mica—it may be seen in Figure 2. The beam confining plate is a natural shield, because it is normally tied to the cathode. Also, the anode plate wings are folded to stop electron leakage.

The extremely high temperature developed in power tubes may cause loosening of the top-cap, if one is used, because the top-cap has little surface area for air cooling and the plate leads used are relatively light for good heat conduction. The Sylvania

Type 6BQ6GTA uses special high temperature melting point solder for the top-cap connection, to prevent this from occurring.

The high temperature at which the horizontal output tube operates may also induce grid emission. This problem is practically eliminated from the control grid in the new Type 6BQ6GTA by the large grid heat radiator that keeps the control grid cool—it is seen above the top mica. Also, grid No. 2 is made of specially coated wire which results in considerable improvement in regard to secondary emission.

These and other improvements included in the Sylvania Type 6BQ6GTA have proven to give superior horizontal output stage performance in the exhaustive tests given it in the Sylvania laboratories.

THE 219/220 TUBE TESTER SHORTS TEST

By J. H. Mintzer

Supervisor, Factory Service

We offer the following explanation of the 219/220 shorts test operation, to help you to better understand its use and advantages over the old type neon lamp test.

The 219/220 tube testers utilize a continuous reading ohmmeter type test whose range extends from 0 to approximately 2 megohms. The center scale reading has been set at 250,000 ohms so that any tube with a leakage resistance less than that, would read in the lower or REPLACE section of the scale. Such a tube would be worthless in practically any application.

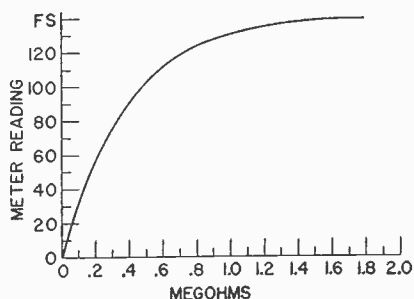
Some circuits will tolerate a considerable amount of tube leakage while others are much more critical. Therefore, a tube may fail in a critical circuit because of leakage, but when tested will read well up into the green or GOOD section of the scale. For example, a tube which failed in such a circuit may show a meter reading in the green scale of 100. By looking at the graph drawn right, it can be seen that the tube has a leakage resistance of approximately 500,000 ohms. Such a tube would probably operate normally in a less critical circuit.

It can be seen from this, that the 219/220 shorts test enables the user to select tubes for various circuits according to the amount of leakage that particular circuits will tolerate. This feature is not possible in the neon lamp type test, since it is a case of the lamp either lights or it doesn't. The point at which it lights will also vary with temperature, age or use.

When using the 219/220 shorts test, the serviceman should always bear in mind that he is reading an ohmmeter rather than a go or no-go indicator.

The graph drawn below will be of help in determining the approximate amount of leakage resistance from the meter reading.

Large, full page, graphs are available. Send your request to—J. H. Mintzer, Supervisor of Factory Service, Sylvania Electric Products Inc., 1221 West Third St., Williamsport, Pa.



The New Sylvania 12AU7A

Here is important vacuum tube news. A duo-triode with military quality performance for commercial application is now available. The Type 12AU7A construction, up to now, has been used exclusively in military service because of its short, rugged and more expensive construction. Recognizing the need for such a tube in television receivers to achieve more stable performance, Sylvania is offering the 12AU7A for television use. This new tube may be seen in Figure 1 of *New Sylvania TV Tube Designs for '54*, the introductory article for this issue.

Combining the good features of the "old reliable" 12AU7 with new design features, the 12AU7A provides exceptional performance as either a horizontal or vertical oscillator, or as a vertical deflection amplifier. Also, it may be used for other applications for which the 12AU7 was formerly used, such as sync separator and sync oscillator.

The 12AU7A is especially recommended as a horizontal oscillator replacement for the 12AU7 in television receivers in which jitter and bounce occur from sound vibrations emanating from the loud speaker.

Low-microphonic level is an outstanding feature of the 12AU7A, along with greater stability and fewer heater-cathode failures. These features result from the shorter length and larger diameter construction which increases rigidity between parts and minimizes bowed cathode difficulties. It also surpasses 12AU7 performance in reduction of shorts and plate current cutoff problems.

Other construction features of the 12AU7A are: symmetrical plate construction with heat radiators on the shorter dimension resulting in better cooling; and longer leakage path between grid and plate reducing leakage to an infinitesimal value which is important in high pulse applications, such as for television horizontal oscillators.