

Tube Of The Month

GMI-90 / ГМИ-90

The progressive development of early transmitting tubes was usually concerned with making more powerful tubes that would operate at higher frequencies. Shortening internal lead lengths and the minimalizing of element capacities allowed new tube generations to outperform their predecessors. As WWII approached, a need for special purpose tubes that would serve as high power switches became important. The operating plate voltage of a typical transmitting tube is much less than what the tube can actually withstand before corona breakdown. A standard 250TH triode has a maximum plate voltage of 4000 VDC for RF/AF amplifier service but can handle 25,000 volts as a switch.

Without the requirement of high frequency operation, new tubes were made that could handle the high voltage and current required to pulse modulate the new RADAR oscillators. Pulse tubes in the U.S. tended to look much like the standard transmitting types and were cosmetically pleasing. The Soviet Union wasn't into cosmetics as much as dependability and ease of construction. The GMI-90 or ГМИ-90 is a classic example. There are four separate grid assemblies with opposing surfaces of the plate. The plate is arranged like a maze to maximum dissipation and is spot welded together. This tube must withstand 33,000 volts so it has a large, anti-coronal, plate cap and a plate structure that is mounted very high in the envelope to give some distance from any metal.

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