

Applications

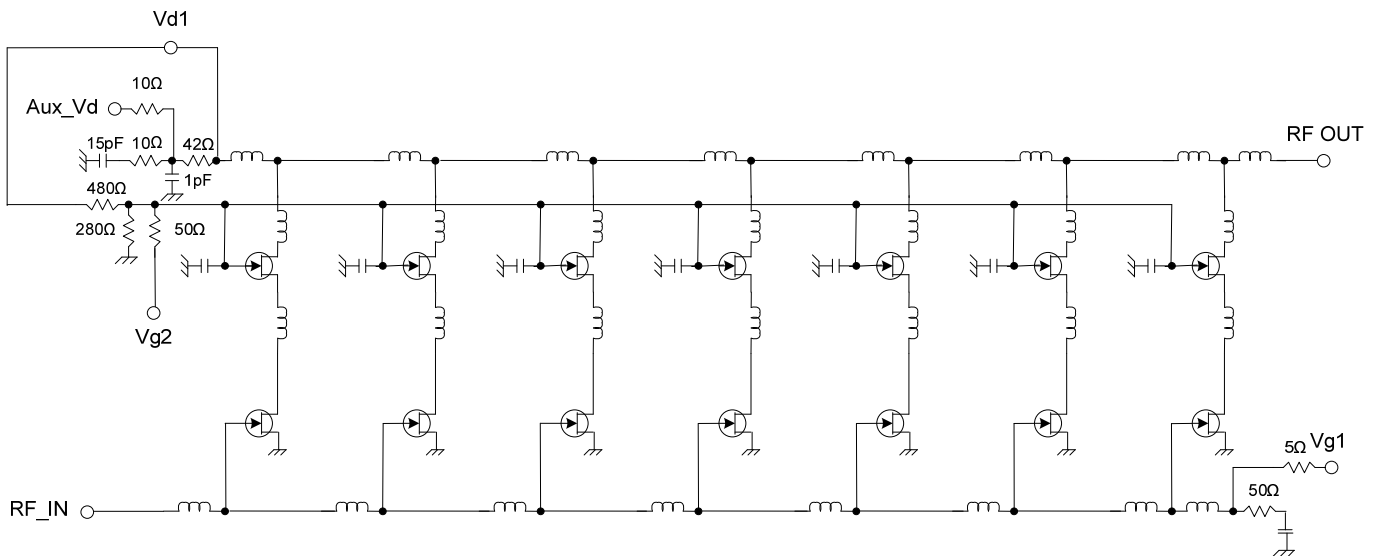
The **MMA012727** traveling wave amplifier is designed for use as a general purpose wideband power stage in microwave communication systems, and test equipments. It is ideally suited for broadband applications requiring a flat gain response and excellent port matches over a 0.1 to 26.5 GHz frequency range. Dynamic gain control and low-frequency extension capabilities are designed into these devices.

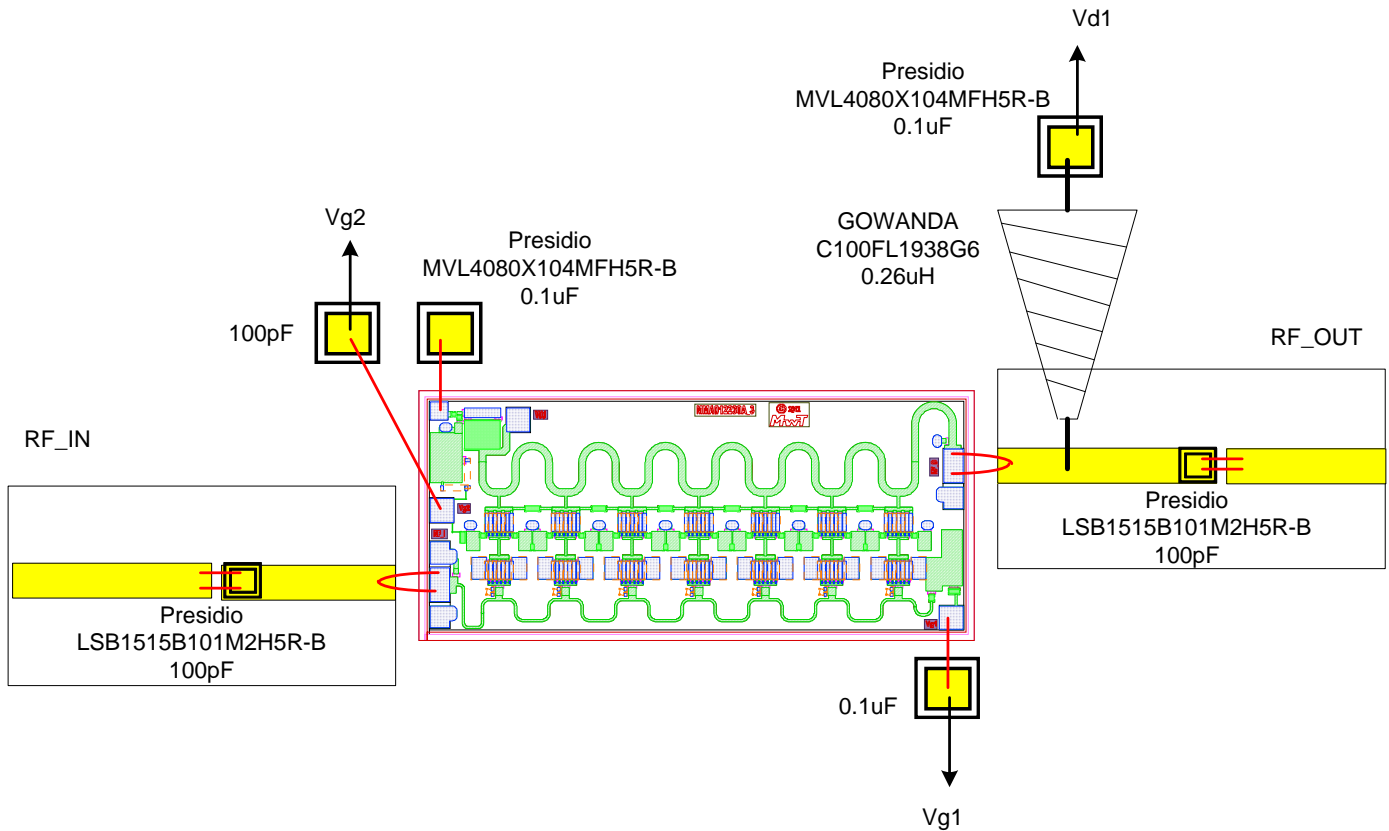
Biasing and Operation

The recommended bias conditions for best performance for the **MMA012727** are $V_{DD} = 10V$, $I_{DD} = 350mA$. To achieve these drain current levels, V_{g1} is typically $-0.75V$, and V_{g2} is typically $+1V$. No other bias supplies or connections to the device are required for 0.1 to 26.5 GHz operation. The gate voltage (V_{g1}) should be applied prior to the drain voltage (V_{d1}) during power up and removed after the drain voltage during power down. Performance improvements are possible depending on applications. The drain bias voltage range is 8 to 12V and the quiescent drain current biasing range is 250mA to 500mA. The **MMA012727** is a DC coupled amplifier. External decoupling capacitors are needed on RF_{IN} and RF_{OUT} ports. The drain bias pad is connected to RF and must be decoupled to the lowest operating frequency. An auxiliary drain contacts is provided when performance below 2GHz is required. The second gate (V_{g2}) can be used to obtain 30 dB (typical) dynamic gain control. For maximum gain operation, typical V_{g2} is $+1V$.

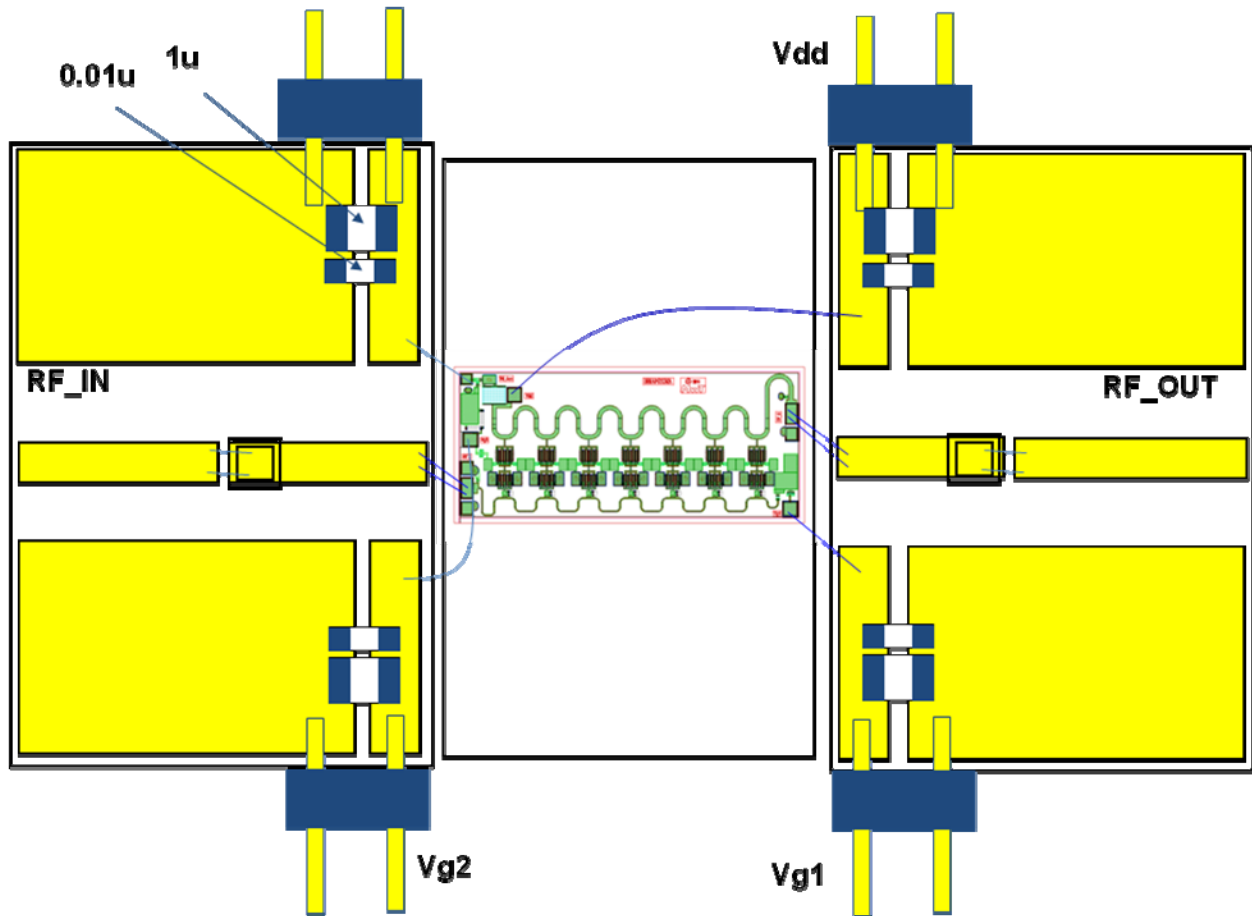
Assembly Techniques

GaAs MMICs are ESD sensitive. ESD preventive measures must be employed in all aspects of storage, handling, and assembly. MMIC ESD precautions, handling considerations, die attach and bonding methods are critical factors in successful GaAs MMIC performance and reliability.





Assembly Diagram



Demo module DC and RF pin assignment for 2-27GHz applications