









### Applications

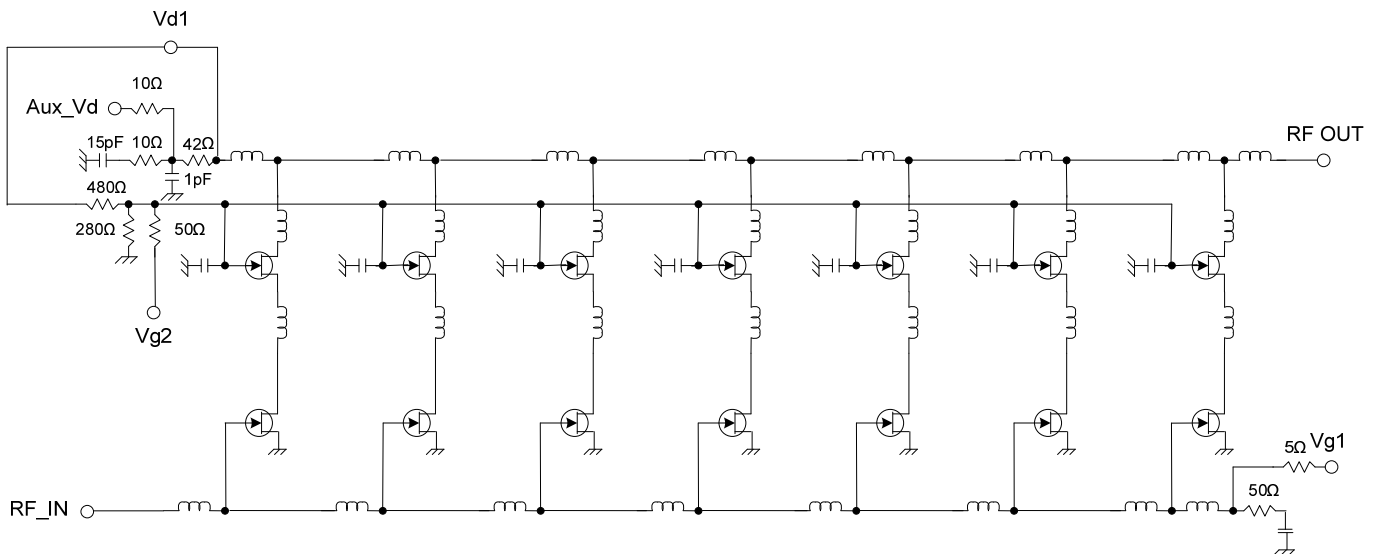
The MMA012030 traveling wave amplifier is designed for use as a general purpose wideband power stage in microwave communication systems, and test equipments. It is ideally suited for broadband applications requiring a flat gain response and excellent port matches over a 0.1 to 20 GHz frequency range.

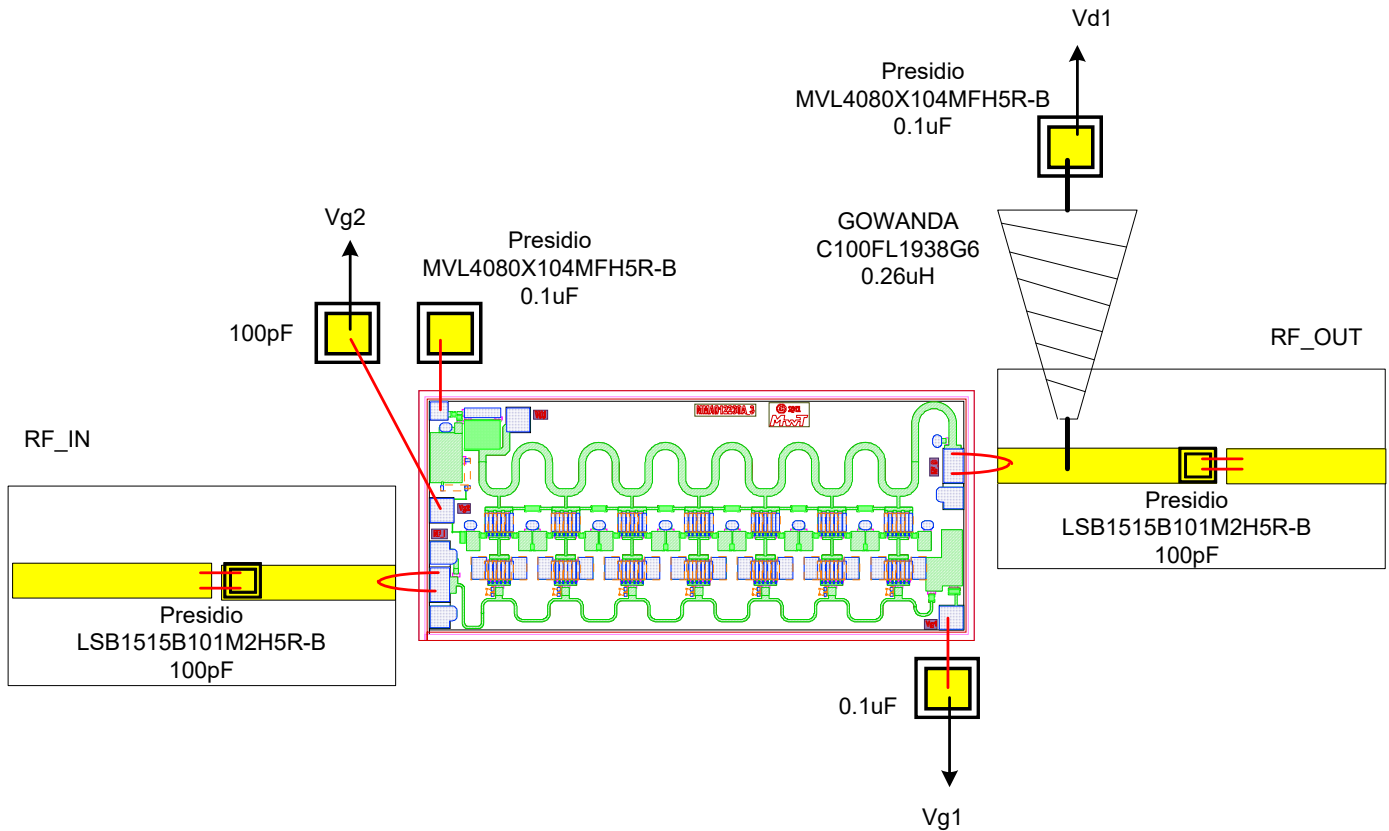
### Biasing and Operation

The recommended bias conditions for best performance for the MMA012030 are  $V_{DD} = 12V$ ,  $I_{DD} = 500mA$ . To achieve these drain current levels,  $V_{g1}$  is typically  $-0.8V$ , and  $V_{g2}$  is  $+2V$ . No other bias supplies or connections to the device are required for 0.1 to 20 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. The MMA012030 is a DC coupled amplifier. External coupling capacitors are needed on RF<sub>IN</sub> and RF<sub>OUT</sub> 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 0.1 GHz is required. Connect external capacitors to ground to maintain input and output VSWR at low frequencies (see additional application note). Do not apply bias to these pads. The second gate ( $V_{g2}$ ) can be used to obtain 30 dB (typical) dynamic gain control. For highest gain operation,  $V_{g2}$  voltage must be set at  $+2V$ .

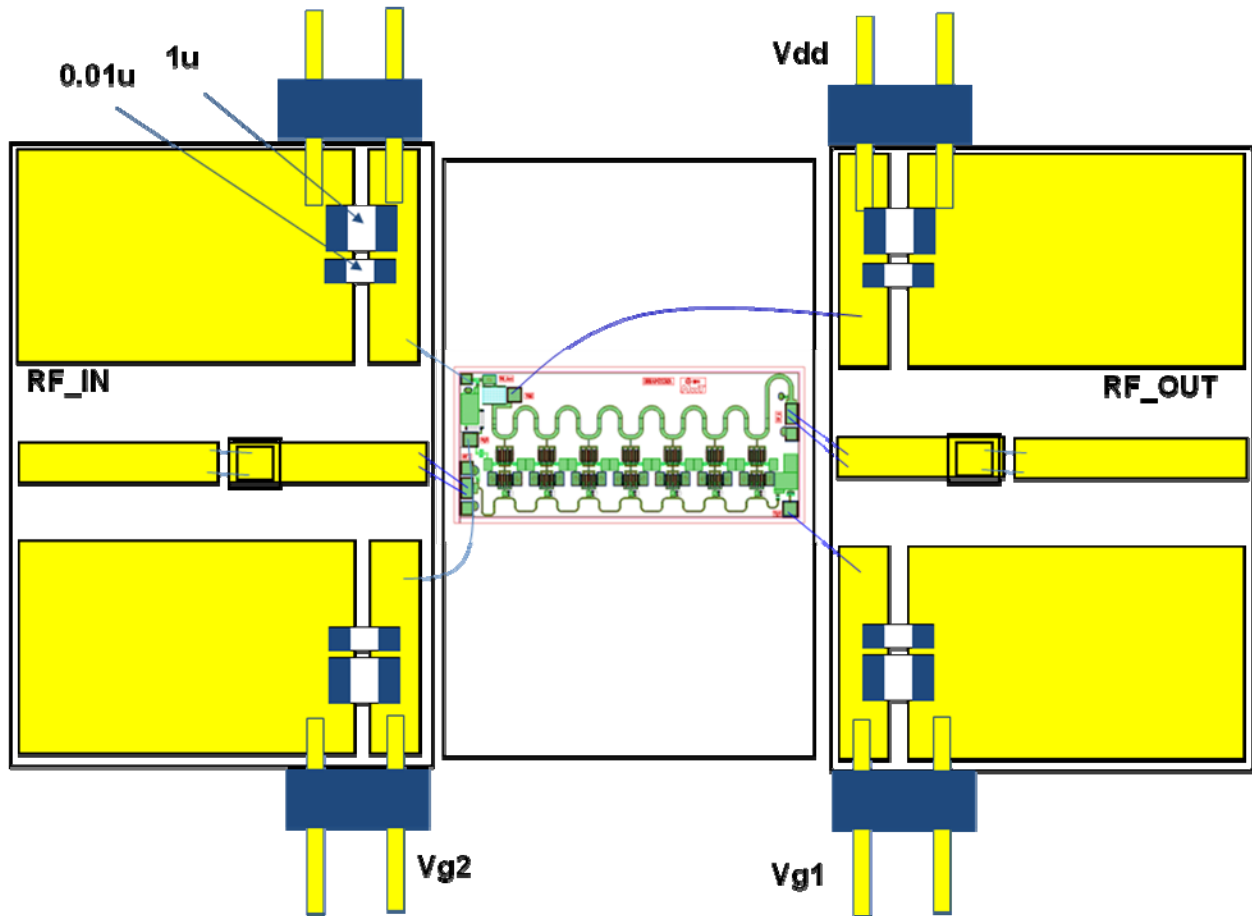
### Assembly Techniques

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**