



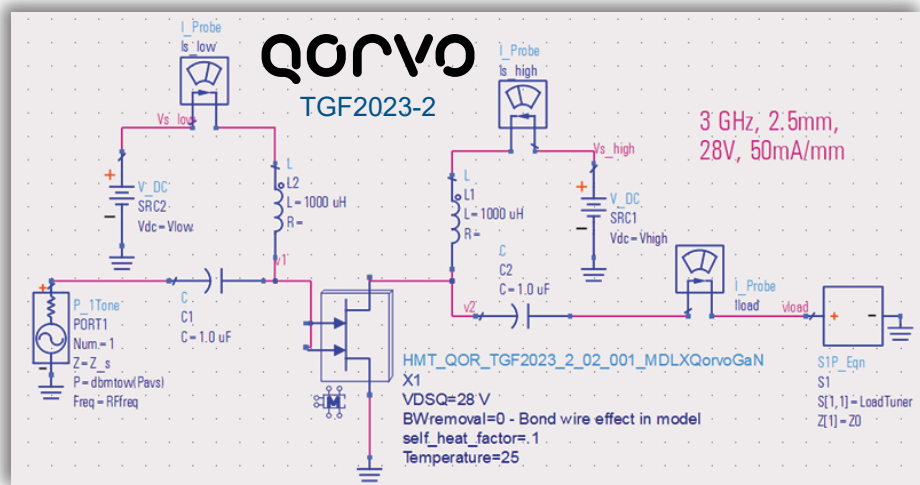
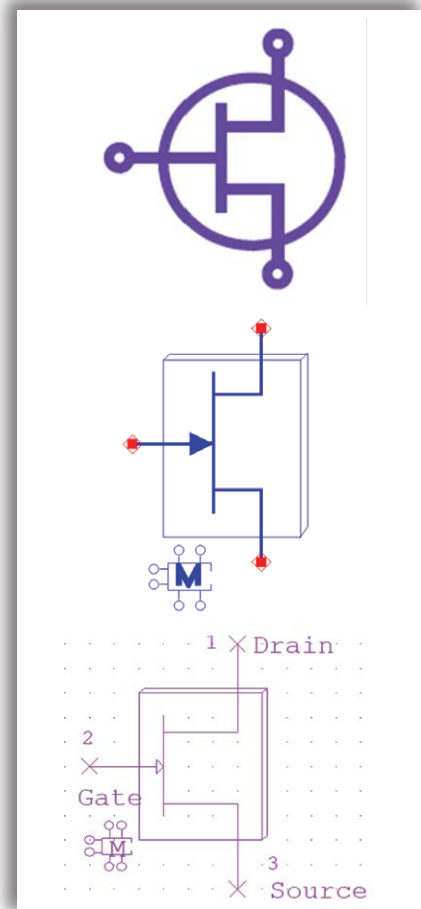
### Overview

The Modelithics® Qorvo GaN Library is a collection of precision nonlinear simulation models for Qorvo GaN die and packaged transistor devices. The GaN transistor models offer valuable features to allow for the most current and accurate design techniques, such as variable bias, temperature scaling, self-heating effects and intrinsic I-V sensing. The die transistor models offer bondwire on/off modes whenever applicable. Every model is validated with accurate broadband measurements.

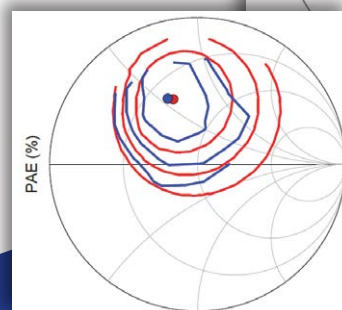
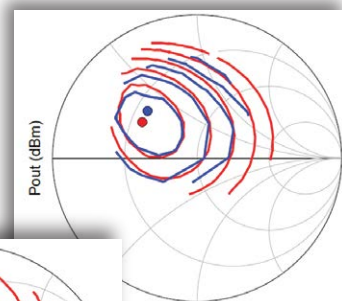
### Model Features

The Modelithics Qorvo GaN Library provides designers with a very flexible and accurate design tool that offers many advantages over ideal or file-based models. Valuable features include:

- **Support for popular simulation software tools** - Model versions are available for Keysight Advanced Design System and National Instruments AWR Design Environment.
- **Measurement-based** - Each non-linear model is developed using multiple precision measurements under device-specific test conditions.
- **Examples** - The library includes example design project files that demonstrate the model features, show various test bench simulation setups, and plot simulated results.
- **Well-documented** - Each model comes with a model datasheet that lists recommended model validity parameters, measurement and test fixture details, and model-to-measurement comparisons.
- **Power amplifier (PA) validations** - Select Qorvo GaN models have an associated PA example design.



Load pull Pout and PAE using Qorvo TGF2023-2 die format GaN transistor model  
Red = model  
Blue = measured



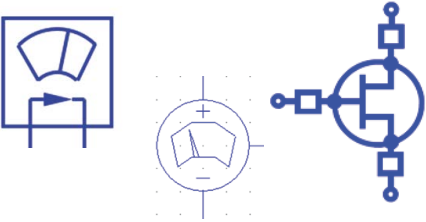
# Devices in the Modelithics Qorvo GaN Library

Packaged Devices				Die Devices	
QPD0020	QPD1016	T1G2028536-FS	T2G6003028-FL	TGF2023-2-01	TGF2933*
QPD0030	QPD1017	T1G3000532-SM	T2G6003028-FS	TGF2023-2-02	TGF2934*
QPD0060	QPD1020	T1G4004532-FL	TGF2819-FL	TGF2023-2-05	TGF2935*
QPD1000	QPD1022	T1G4004532-FS	TGF2819-FS	TGF2023-2-10	TGF2936*
QPD1004	QPD1025L	T1G4012036-FL	TGF2929-FL	TGF2023-2-20	TGF2941*
QPD1006	QPD1029L	T1G4012036-FS	TGF2929-FS	TGF2952	TGF2942*
QPD1008	QPD1823	T1G4020036-FL	TGF2965-SM	TGF2953	* Both small- and large-signal model versions
QPD1008L	QPD1881L	T1G4020036-FS	TGF2977-SM	TGF2954	
QPD1009	QPD2017	T1G6001032-SM	TGF2978-SM	TGF2955	
QPD1010	QPD2194	T2G4003532-FL	TGF2979-SM	TGF2956	
QPD1011	QPD2195	T2G4003532-FS	TGF3015-SM	TGF2957	
QPD1013	QPD2796	T2G4005528-FS	TGF3020-SM		
QPD1014	QPD3601	T2G6000528-Q3	TGF3021-SM		
QPD1015	QPD3800	T2G6001528-Q3	TQP0104		
QPD1015L	T1G2028536-FL	T2G6001528-SG			

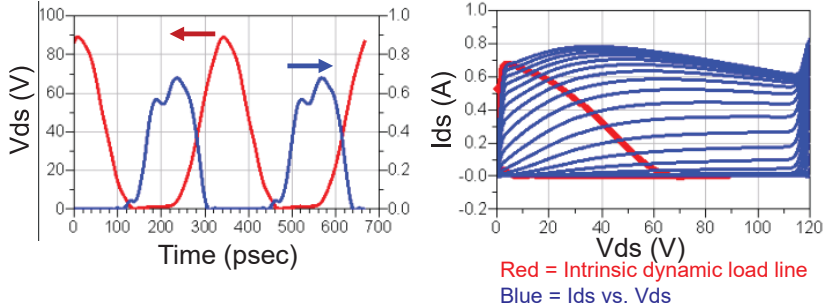
## V. 20.4.3

More to come! New models are added continually.  
Visit our website for an updated complete list.  
([www.Modelithics.com/MVP/Qorvo](http://www.Modelithics.com/MVP/Qorvo))

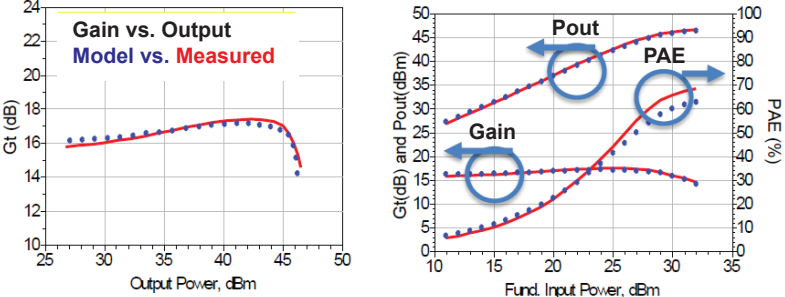
## Power Amplifier Design



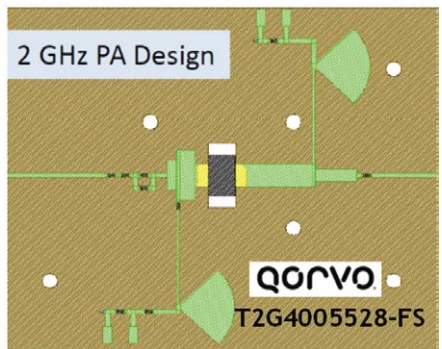
Intrinsic voltage and current access allows for simulation of the waveforms and dynamic load line.



Waveform engineering can be used for the design of advanced PA modes of operation.



The Modelithics Qorvo GaN Library enables rapid design success and demonstrates excellent model to measurement agreement.



2 GHz PA Design

QORVO  
T2G4005528-FS

Visit the **Qorvo MVP page** on the Modelithics website to:

- Explore the latest list of available Qorvo GaN models
- View model datasheets
- Access application notes that demonstrate model features
- Request\* the **Modelithics Qorvo GaN Library** at

[www.Modelithics.com/MVP/Qorvo](http://www.Modelithics.com/MVP/Qorvo)

\*with approval