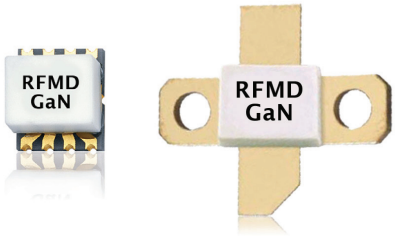
RFMD®.

Gallium Nitride (GaN) High Power Transistors

(Advance Notification)

Introducing the development of RFMD's unmatched high power transistor (HPT) family comprised solely of gallium nitride (GaN) transistors. Using an advanced 0.5um GaN high electron mobility transistor (HEMT) semiconductor process, these high-performance amplifiers from RFMD show excellent peak drain efficiency and flat gain over a broad frequency range in a single amplifier design. The RF393x family consists of 10 W to 120 W unmatched GaN power transistors assembled in a 2-lead flange ceramic package, which provides excellent thermal stability and is ideally suited for CW and pulsed applications, both narrow and wideband. Ease of integration and tuning is accomplished through the incorporation of simple optimized matching networks external to the package that provide wideband gain and power performance in a single amplifier.

RFMD has defined a GaN production model that best leverages the cost advantages attained by manufacturing in our existing wafer factory—the world's largest III-V commercial wafer factory—located near RFMD's corporate headquarters in Greensboro, North Carolina. Commercializing semiconductor processes is an RFMD strength forged with the successful release of the industry's first GaAs HBT power amplifier for the high-volume cellular handset market. Applying that knowledge to the development of gallium nitride (GaN) transistors for the wireless infrastructure, commercial and military markets is an RFMD competency.



APPLICATIONS:

- Broadcast
- General purpose broadband amplifiers
- Cellular wireless infrastructure
- High power radars
- Public mobile radio
- Military & aerospace
- Industrial/medical

FEATURES:

- High power density > 5W/mm
- Advanced 0.5µm GaN HEMT process
- 48 V bias operation
- High gain > 14 dB at 2.1 GHz
- High peak drain efficiency > 65% at 2.1 GHz
- Advanced heat sink package technology
- ESD performance of Class 1B HBM, and Class A MM
- Maximum junction temperature = 200° C for 85° C base plate

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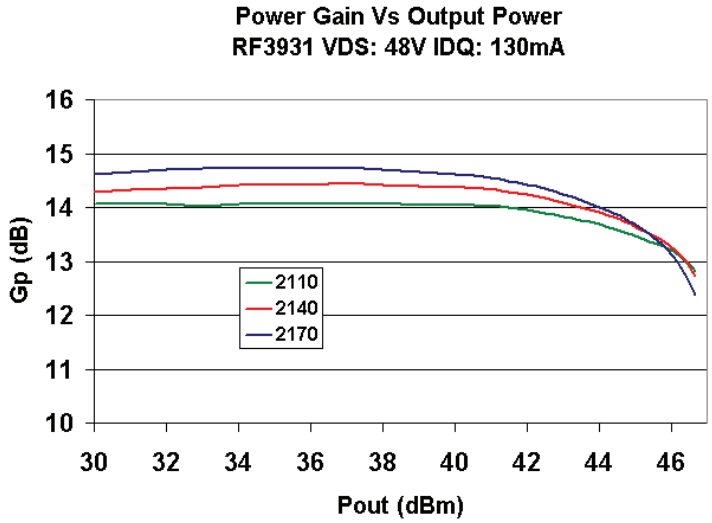
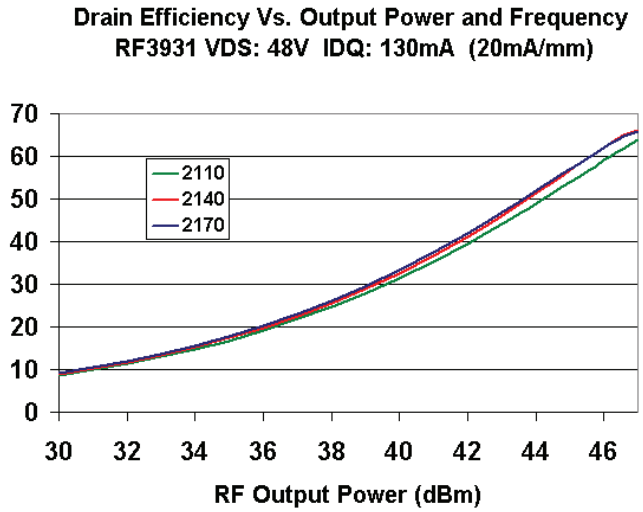
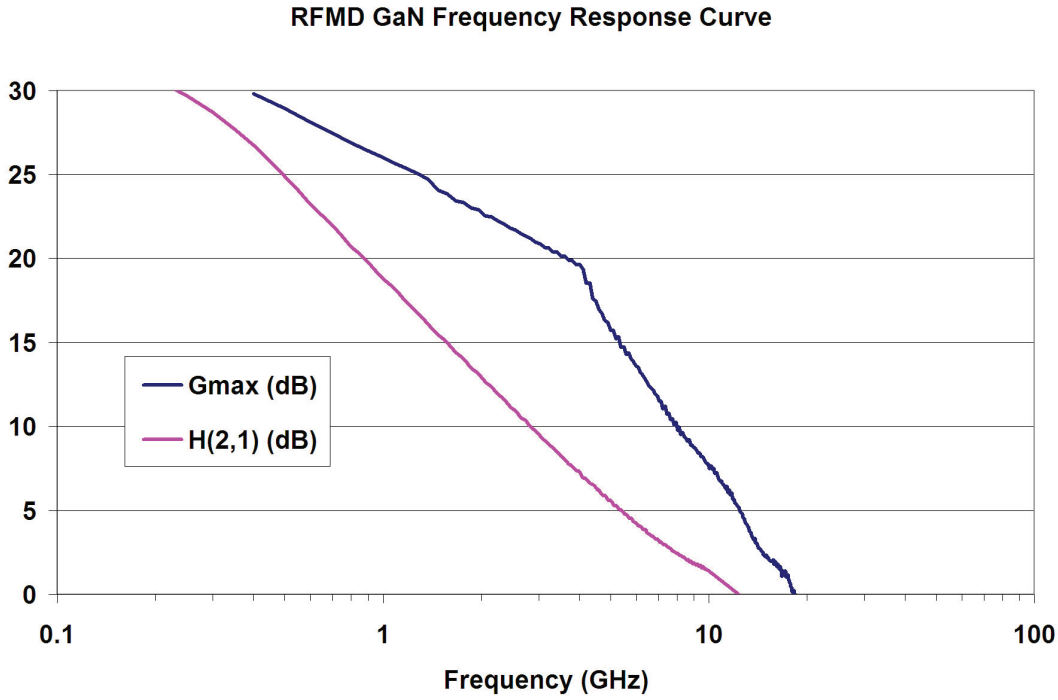
SPECIFICATIONS

Part Number	Freq Range (GHz)	Psat (dBm)	Psat (W)	Linear Gain (dB)	Peak Drain Efficiency (%)	Vds (V)	Idq (mA)	Package
RF3930	DC to 4	40.0	10	> 14	> 65	48	50	AIN SOIC-8 Outline
RF3931	DC to 4	44.8	30	> 14	> 65	48	130	Ceramic 360 Bolt Down
RF3932	DC to 4	47.8	60	> 14	> 65	48	220	Ceramic 360 Bolt Down
RF3933	DC to 4	49.5	90	> 14	> 65	48	310	Ceramic 360 Bolt Down
RF3934	DC to 4	50.8	120	> 14	> 65	48	440	Ceramic 360 Bolt Down







For sales or technical support, contact your authorized local sales representative (see www.rfmd.com/globalsales).

Register to receive RFMD's latest product releases with our new Email Component Alerts at www.rfmd.com/emailalert.

This product complies with RFMD's green packaging standards.

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