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We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



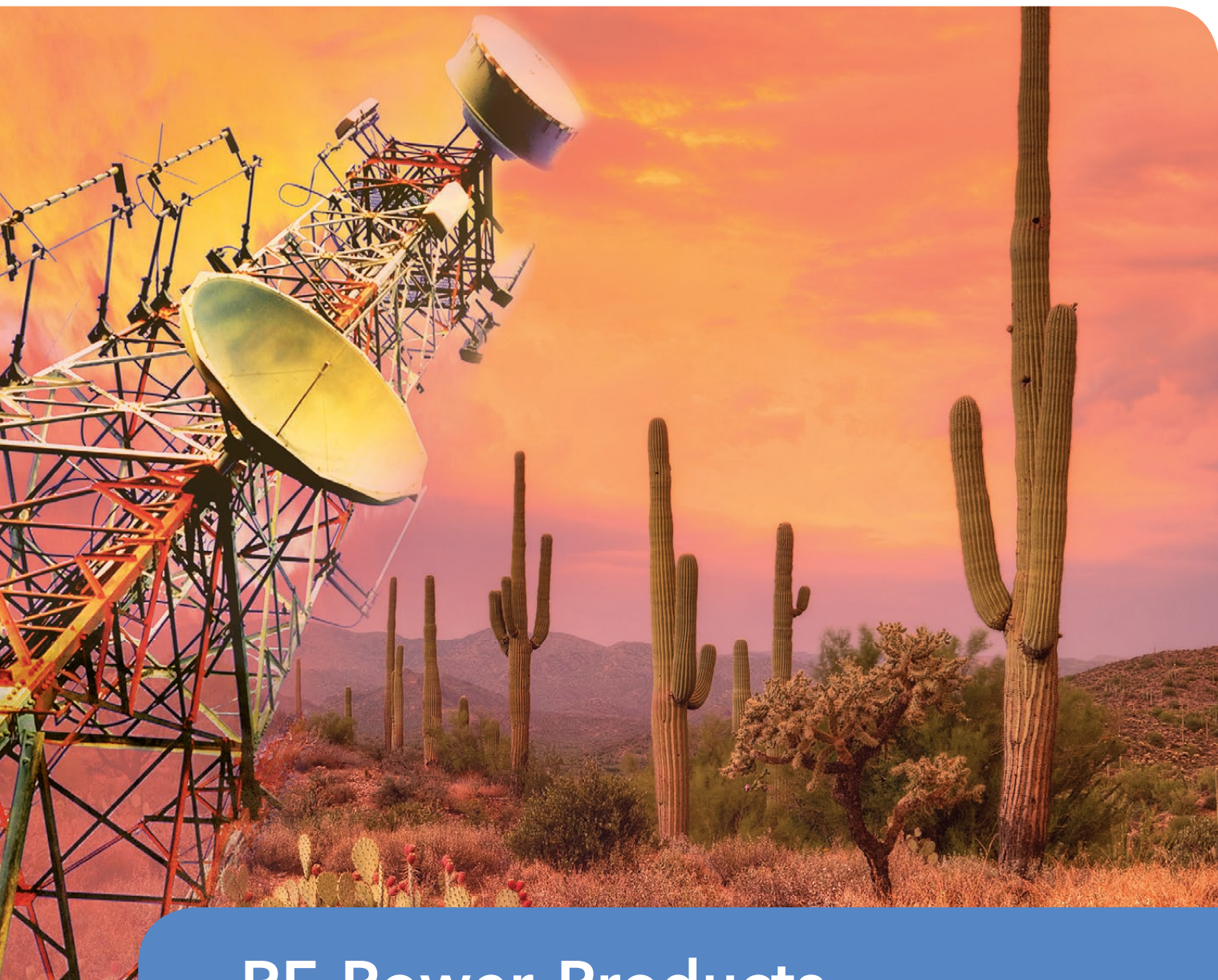
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# RF Power Products Selector Guide



# RF Power Products Selector Guide

The global leader in RF innovation and technology for more than 60 years, NXP offers RF power transistors for communication and industrial applications serving these markets:

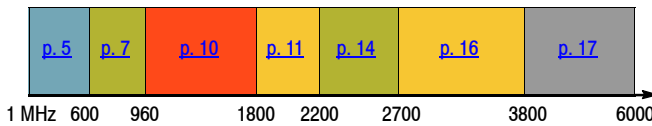
- wireless infrastructure
- industrial, scientific, medical (ISM) and broadcast
- 2-way radio
- aerospace and defense
- cooking
- low power

With products ranging from 1.8 mW to 1.8 kW and from DC to 6000 MHz, using LDMOS, GaN and GaAs technologies, NXP offers the broadest portfolio of RF power transistors.

## How to Use This Selector Guide

Download this selector guide's PDF file (SG46 R44) from [www.nxp.com/RFSelectorGuide](http://www.nxp.com/RFSelectorGuide).

Using the color bar below, click the frequency band of your choice to view our list of recommended RF power transistors.



Using the RF Power Product Portfolio graphical representation that begins on p. 5, choose a part with the desired output power and frequency, and click that product's corresponding page number to be taken to parametric information for that part.

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## Access Data Online

Available online are part number search, the product library, documentation library, software and tools library, application sites, product sites, sales and support, training and where to buy at the following URL:  
<http://www.nxp.com>.

See the RF Design Resources at  
<http://www.nxp.com/RF> for specific RF product support information for:

- Data sheets
- Applications notes
- Selector guide
- Packaging information
- Application information
- Models
- MTTF calculators
- .s2p files
- Events
- RF Product Selector

## Design Tools and Data Available Online for Your Design-in Process

### RF High Power Models

NXP continues to populate its RF High Power Model Library with FET<sup>2</sup>, MET and Root models. All product models available in the RF High Power Model Library (FET<sup>2</sup>, MET and Root) include package, bond wire and internal matching network effects.

The FET<sup>2</sup> and MET models for RF High Power transistors and RF ICs are nonlinear models that examine both electrical and thermal phenomena and can account for dynamic self-heating effects of device performance. They are specifically tailored to model high power RF transistors and RF ICs used in wireless base station applications.

Implemented in the Keysight Advanced Design System and AWR Microwave Office®, the FET<sup>2</sup> and MET models are capable of performing small-signal, large-signal, harmonic- balance, noise and transient simulations. Because of their ability to simulate self-heating effects, the FET<sup>2</sup> and MET models are more accurate than existing models, enabling circuit designers to predict prototype performance more accurately and reduce design cycle time.

The current release of the FET<sup>2</sup> and MET models are available for these tools:

- Agilent EEsof ADS nonlinear circuit simulator
- AWR Microwave Office

The RF High Power Model Library is available for all major computer platforms supported by these simulators.

For more information and latest releases supported, go to <http://www.nxp.com/RF/models>.

## RF Power Electromigration MTTF Calculation Program

### Program Functionality

This MTTF/FIT calculator software is designed to assist our customers in estimating the LDMOS device reliability in terms of electromigration wear-out failures. The program evaluates LDMOS device Mean-Time-To-Failure (MTTF) using Black's Equations. It also estimates the Failures-in-Time (FIT) value at the expected base transceiver system (BTS) life span.

### About the Program

This program is designed for estimating LDMOS device electromigration failure rate. According to electromigration theory, there are two wear-out modes for silicon components employing aluminum as a metallization material:

- The formation of an electrically open circuit due to the condensation of vacancies in the aluminum to form voids.
- The growth of etch-pits into silicon by the dissolution of silicon into aluminum (to short out an underlying junction).

The program also estimates the FIT value at the expected base BTS life span. The calculation requires input for the drain voltage, drain currents, case temperature, RF input/output power and expected BTS life.

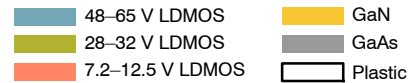
### MTTF Calculator Availability

RF Power MTTF calculators are being added to the NXP web site for all RF Power LDMOS discrete transistor and IC devices. MTTF calculators are available at <http://www.nxp.com/RF/calculators>.

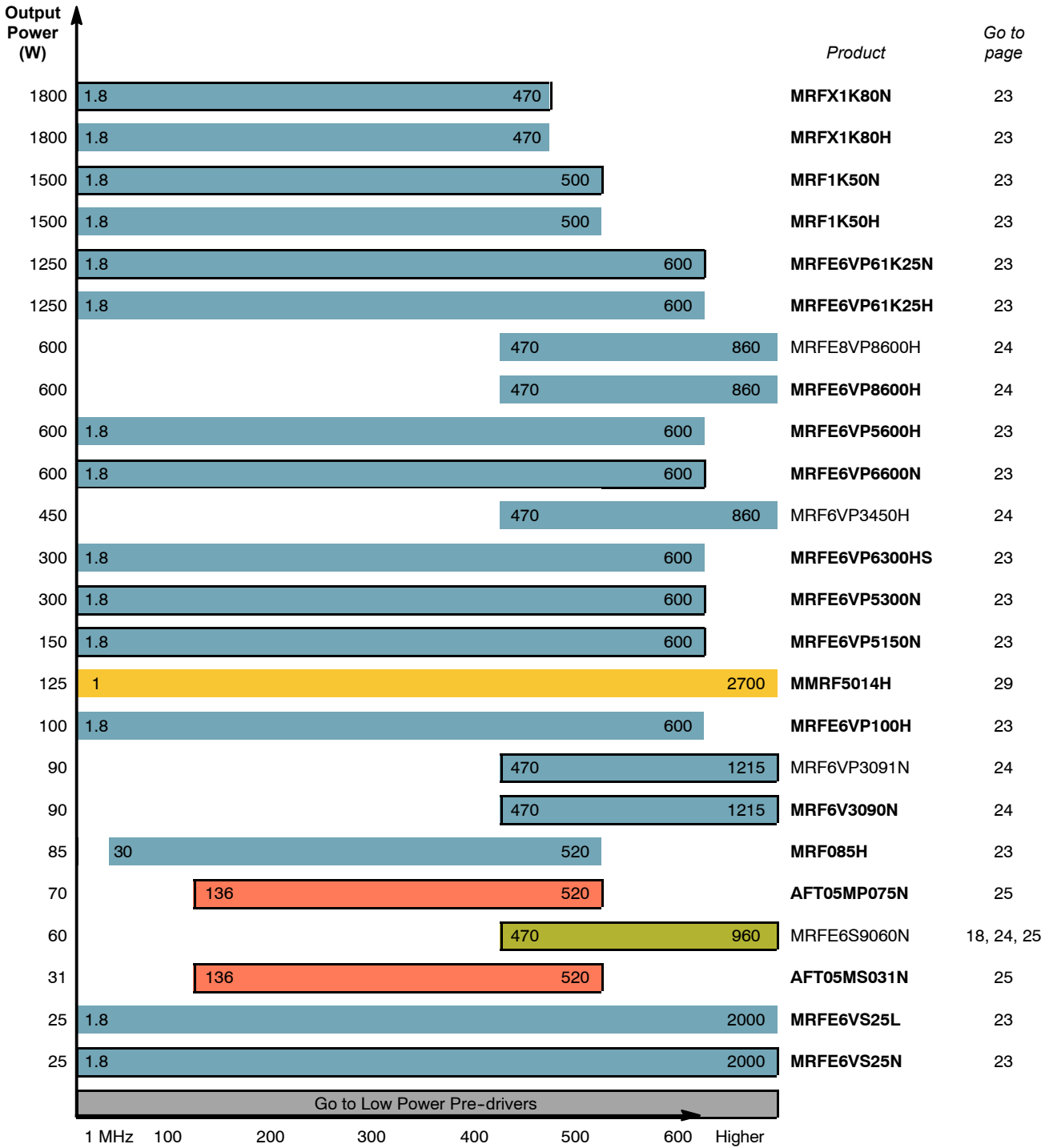


# RF Power Product Portfolio

Choose the output power and frequency range needed to meet the design requirements for your end application.



**Table 1. RF Power Products — 1–600 MHz**



(continued)

Bold = In NXP Product Longevity program  
\*Output Power measured at P3dB

# RF Power Product Portfolio (continued)

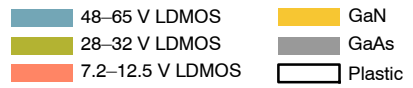
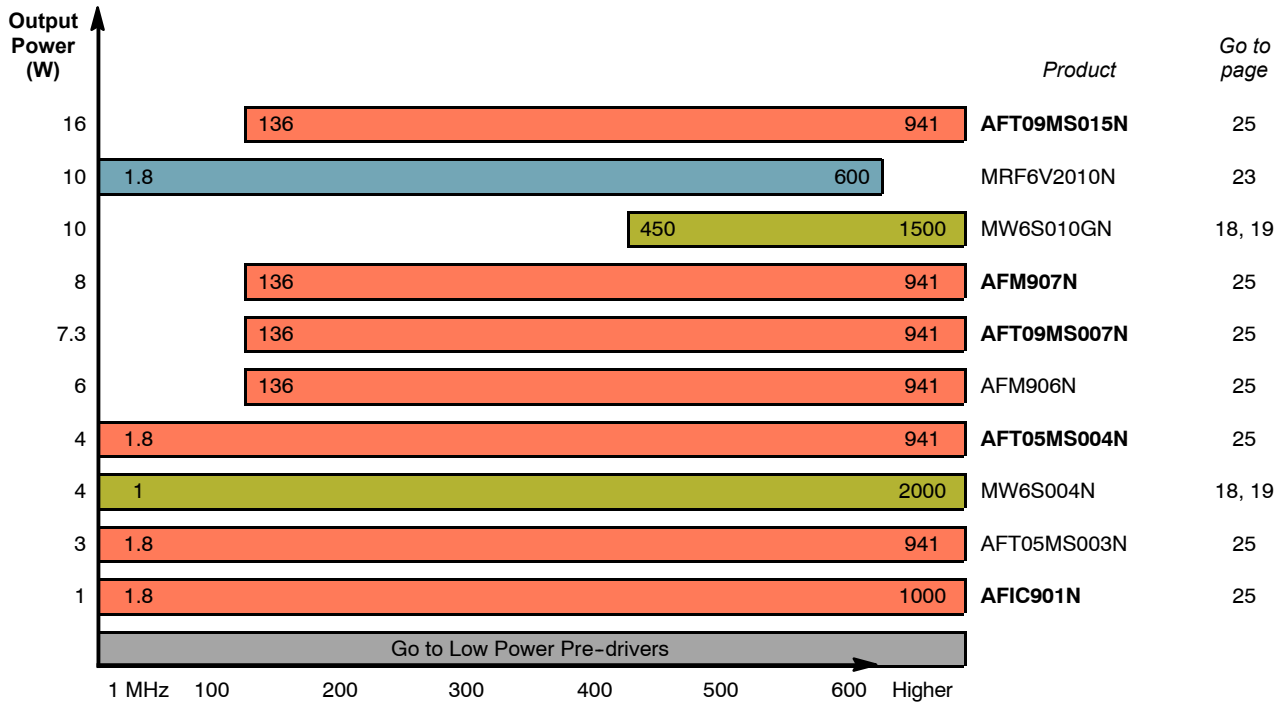


Table 1. RF Power Products — 1–600 MHz (continued)



Bold = In NXP Product Longevity program  
 \*Output Power measured at P3dB



# RF Power Product Portfolio (continued)

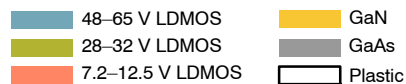
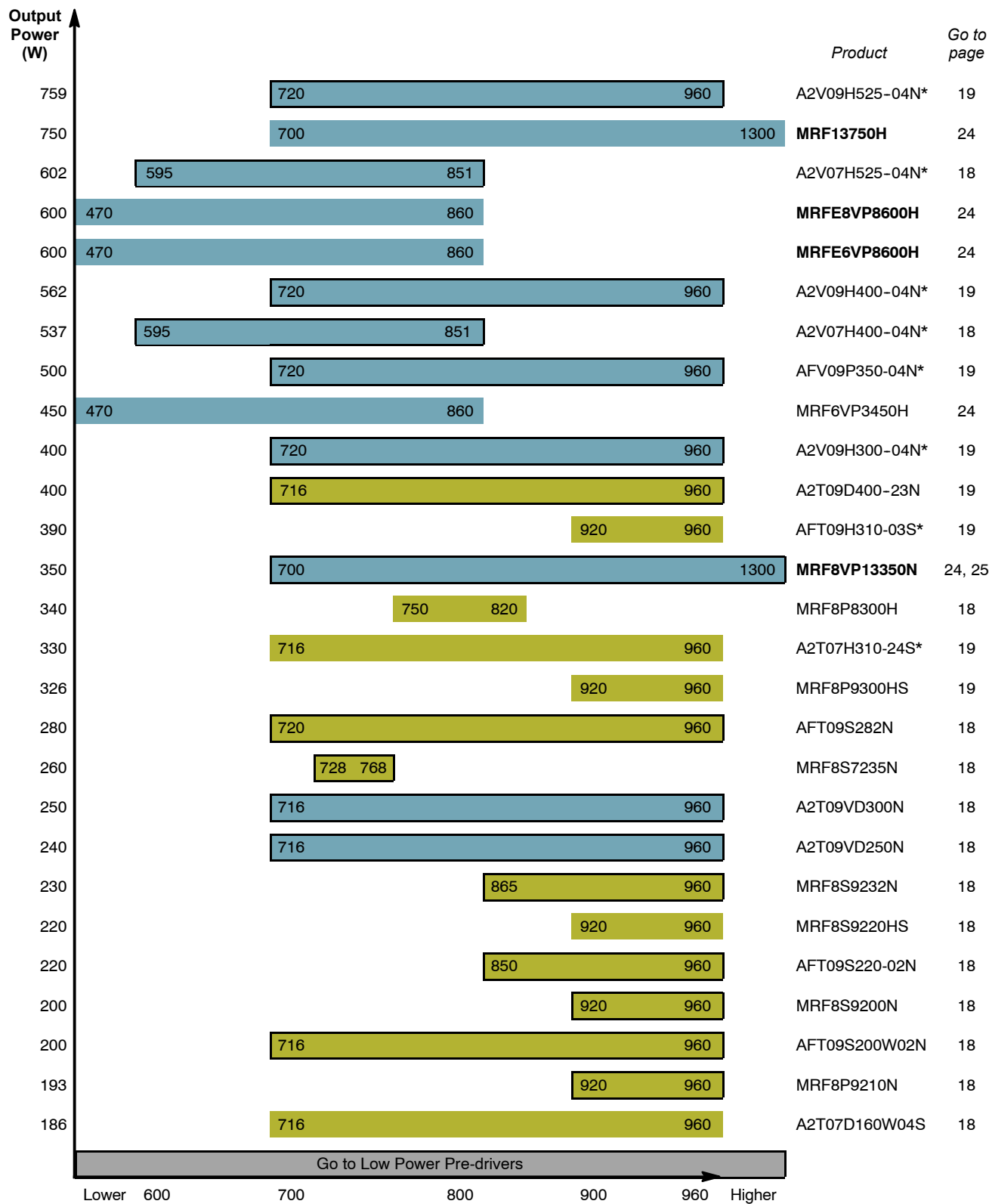


Table 2. RF Power Products — 600–960 MHz



(continued)

Bold = In NXP Product Longevity program  
\*Output Power measured at P3dB

# RF Power Product Portfolio (continued)

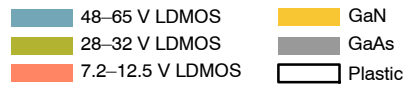
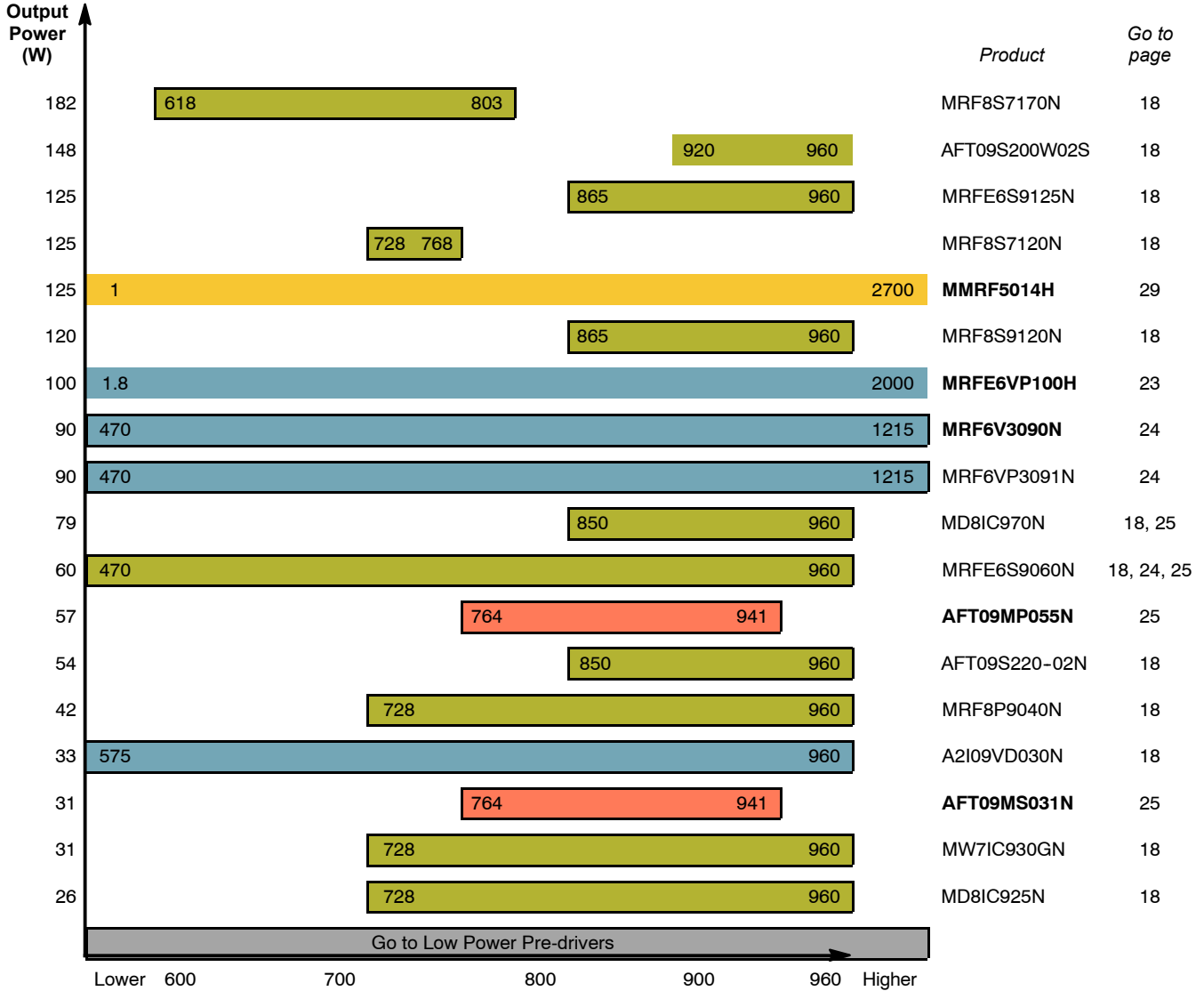


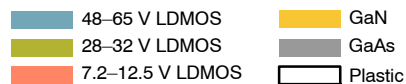
Table 2. RF Power Products — 600–960 MHz (continued)



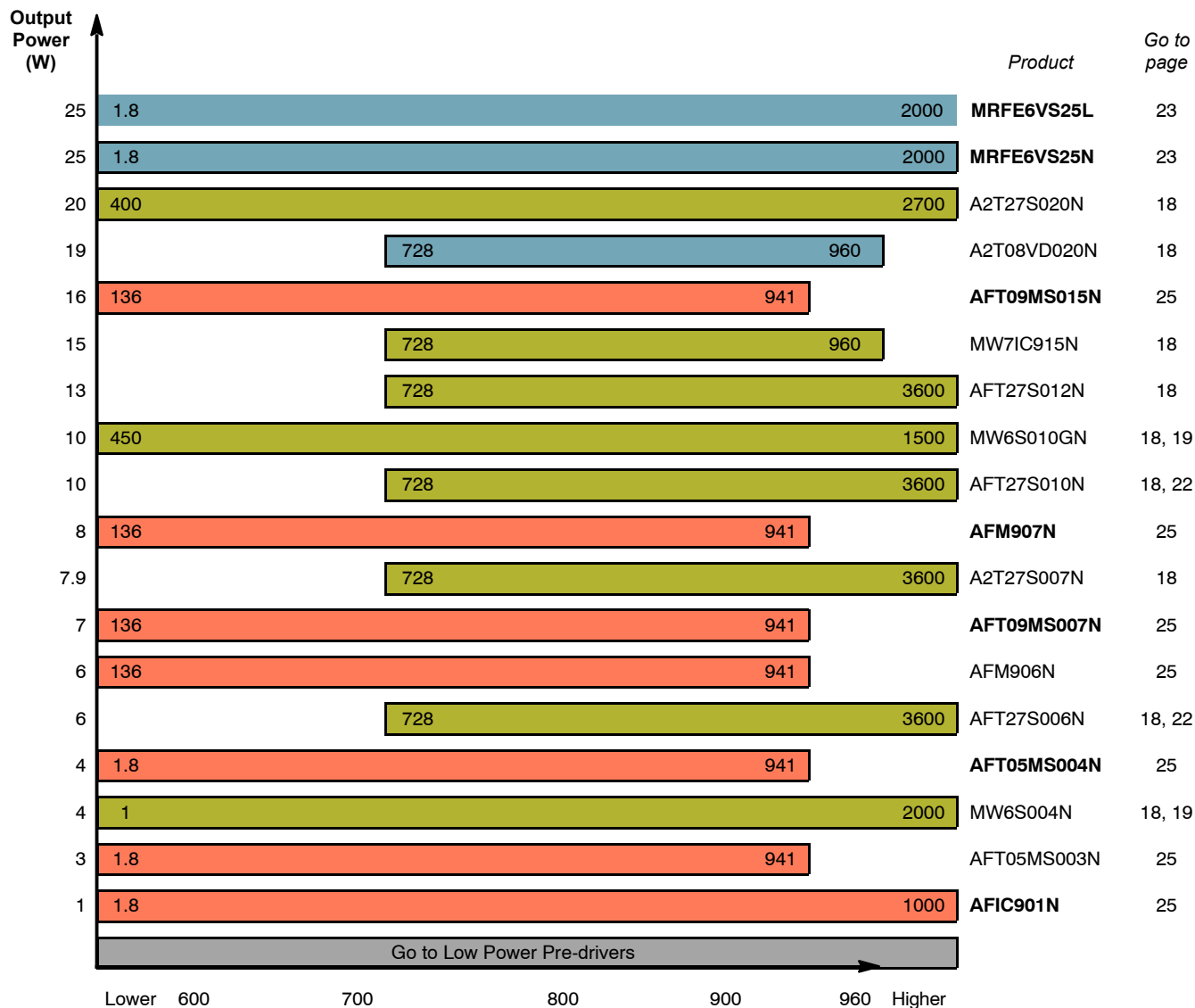
(continued)

Bold = In NXP Product Longevity program  
\*Output Power measured at P3dB

# RF Power Product Portfolio (continued)



**Table 2. RF Power Products — 600–960 MHz (continued)**



Bold = In NXP Product Longevity program  
 \*Output Power measured at P3dB

# RF Power Product Portfolio (continued)

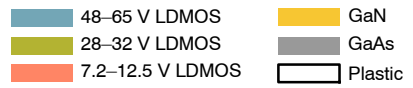
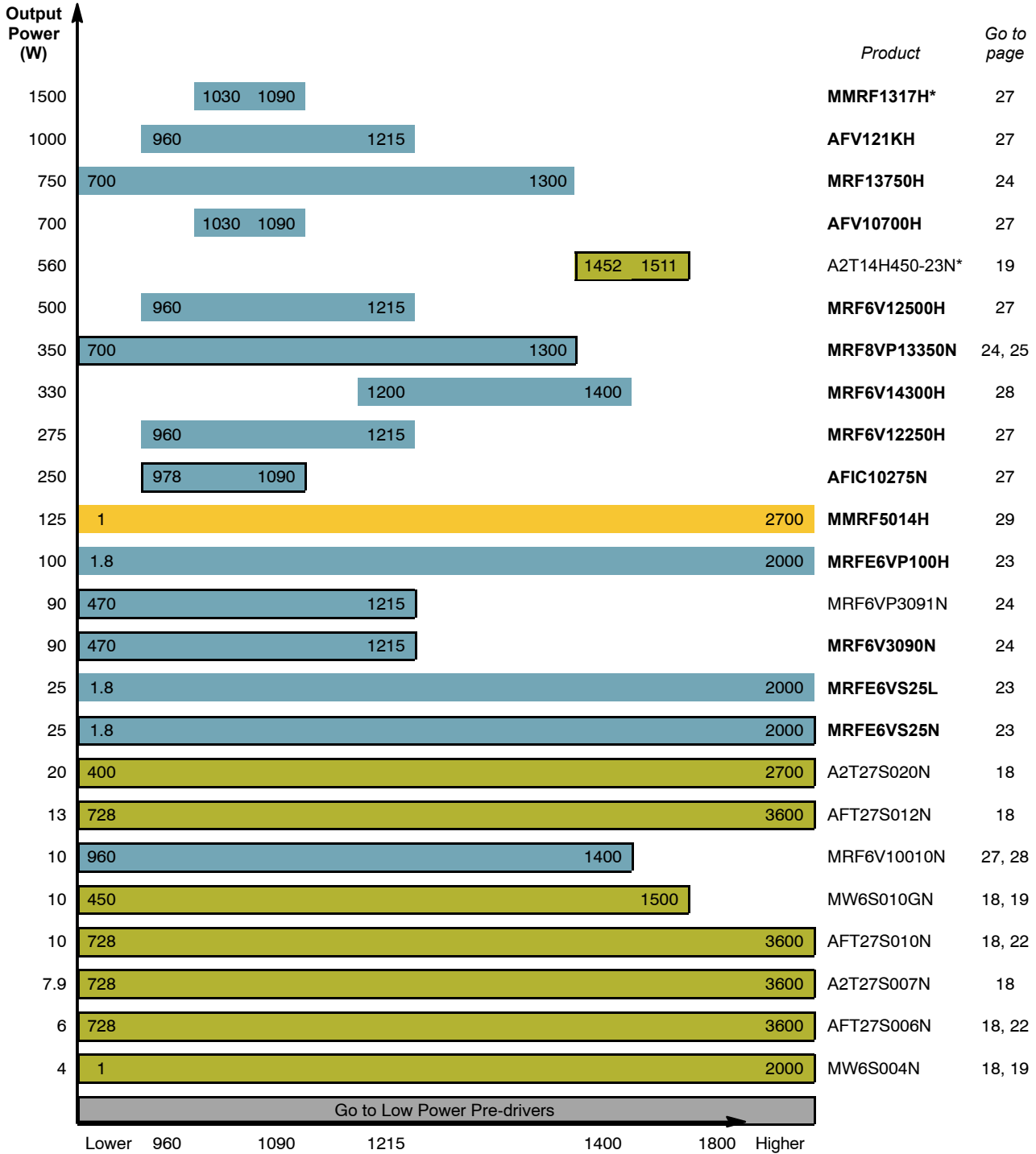


Table 3. RF Power Products — 960–1800 MHz



Bold = In NXP Product Longevity program  
 \*Output Power measured at P3dB

# RF Power Product Portfolio (continued)

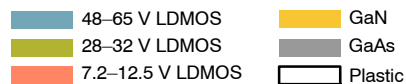
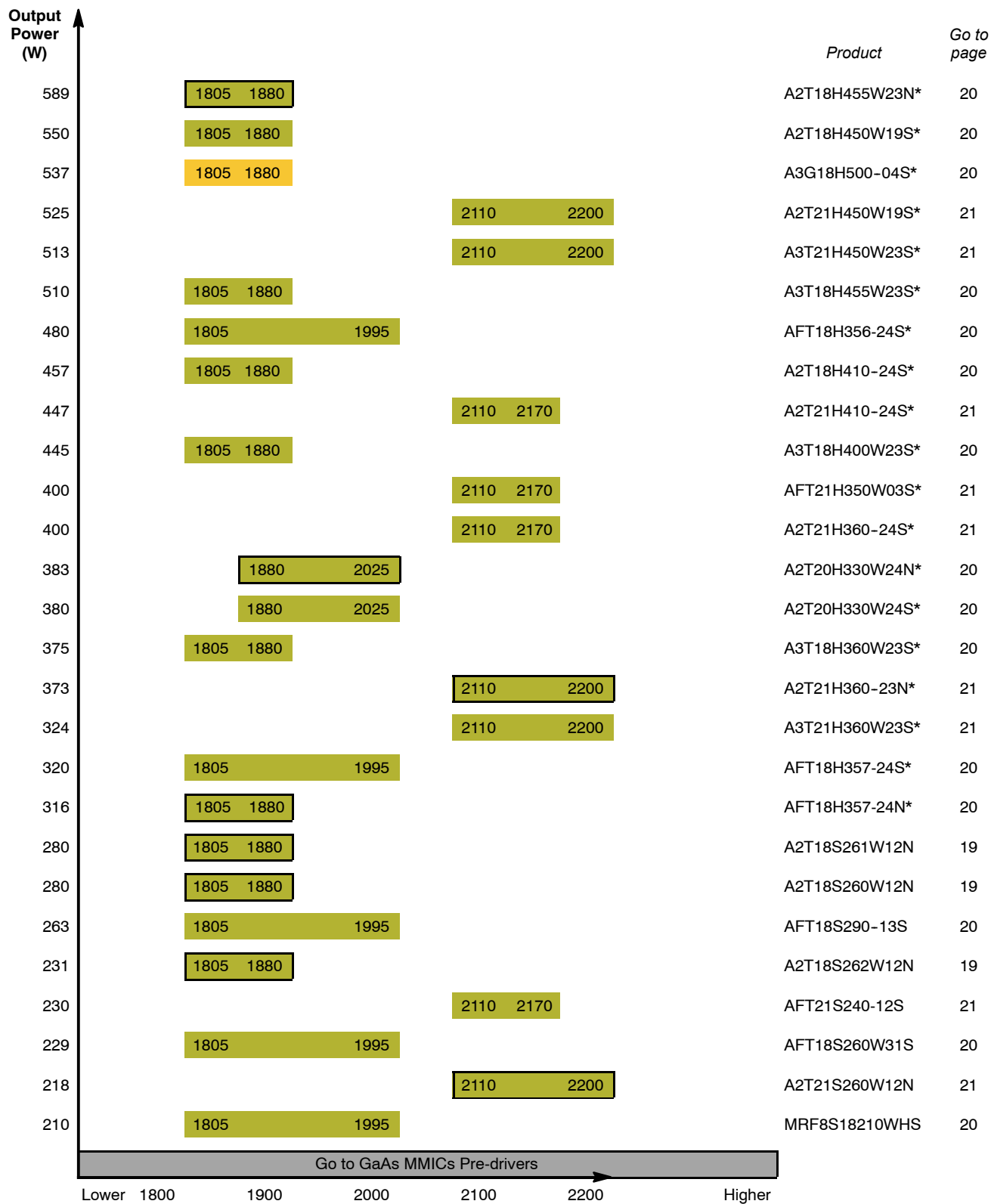


Table 4. RF Power Products — 1800–2200 MHz



(continued)

\*Output Power measured at P3dB

# RF Power Product Portfolio (continued)

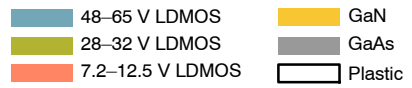
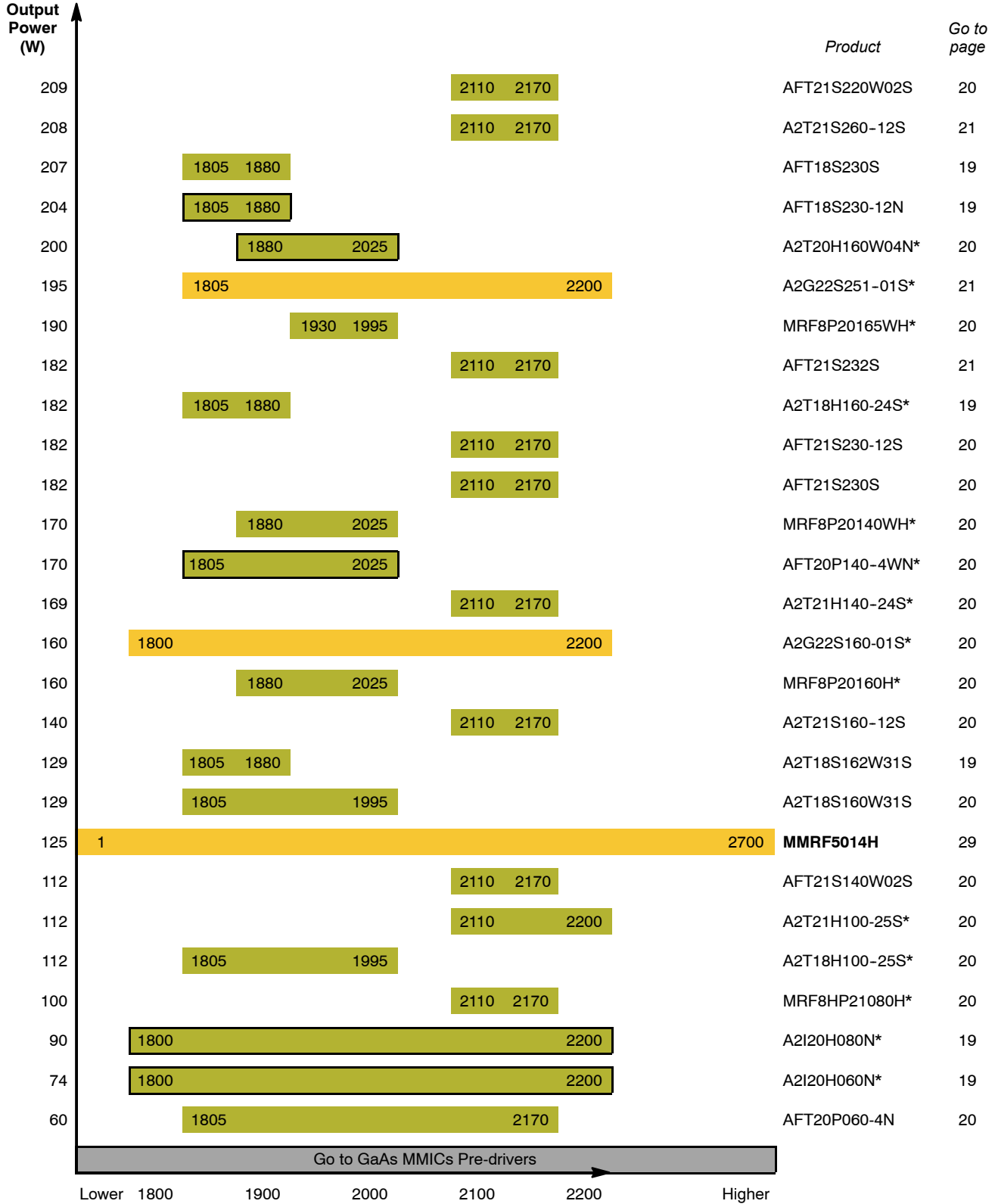


Table 4. RF Power Products — 1800–2200 MHz (continued)



(continued)

\* Output Power measured at P3dB

# RF Power Product Portfolio (continued)

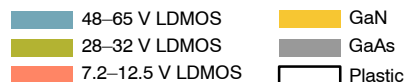
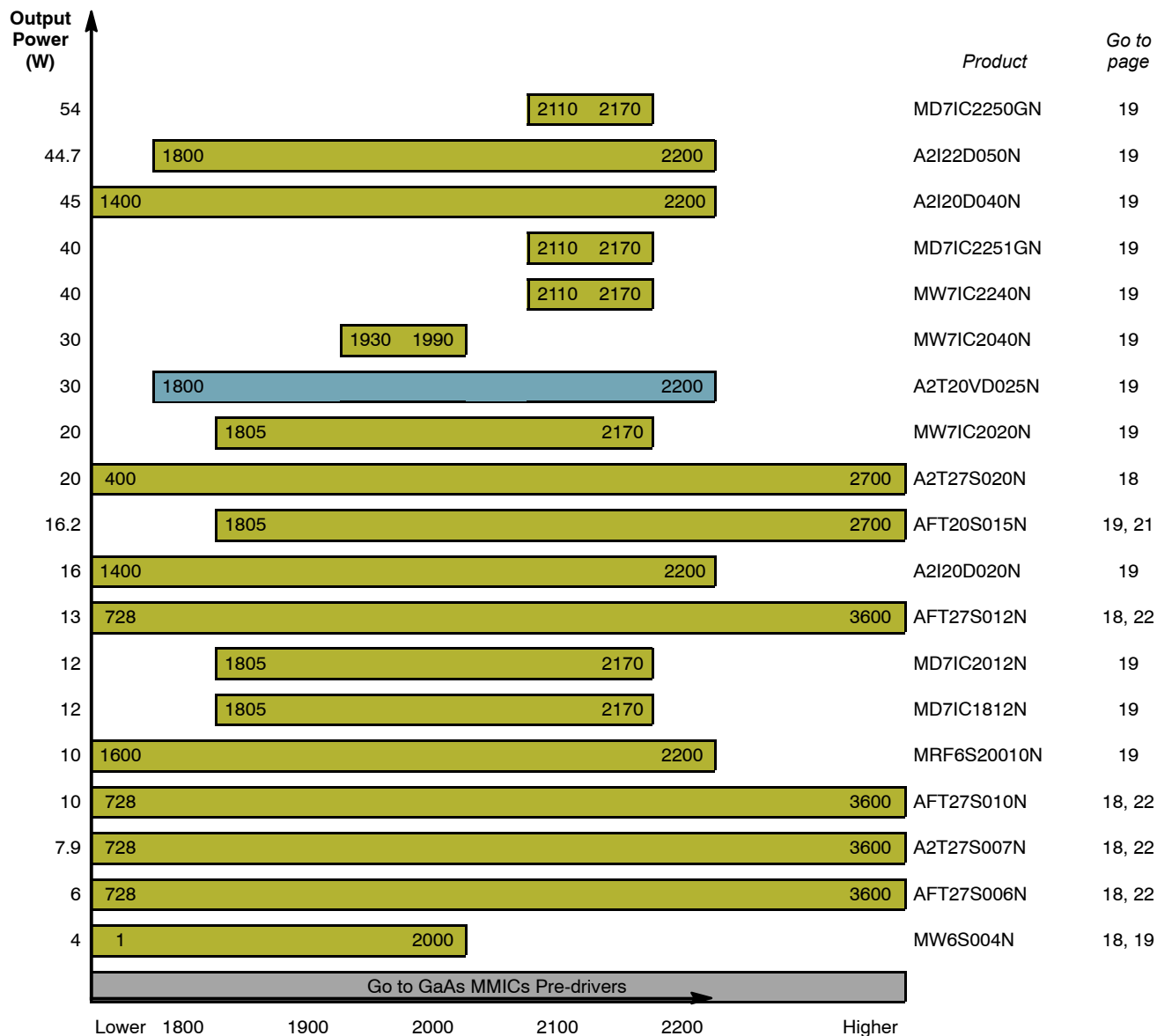


Table 4. RF Power Products — 1800–2200 MHz (continued)



\*Output Power measured at P3dB

# RF Power Product Portfolio (continued)

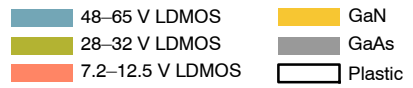
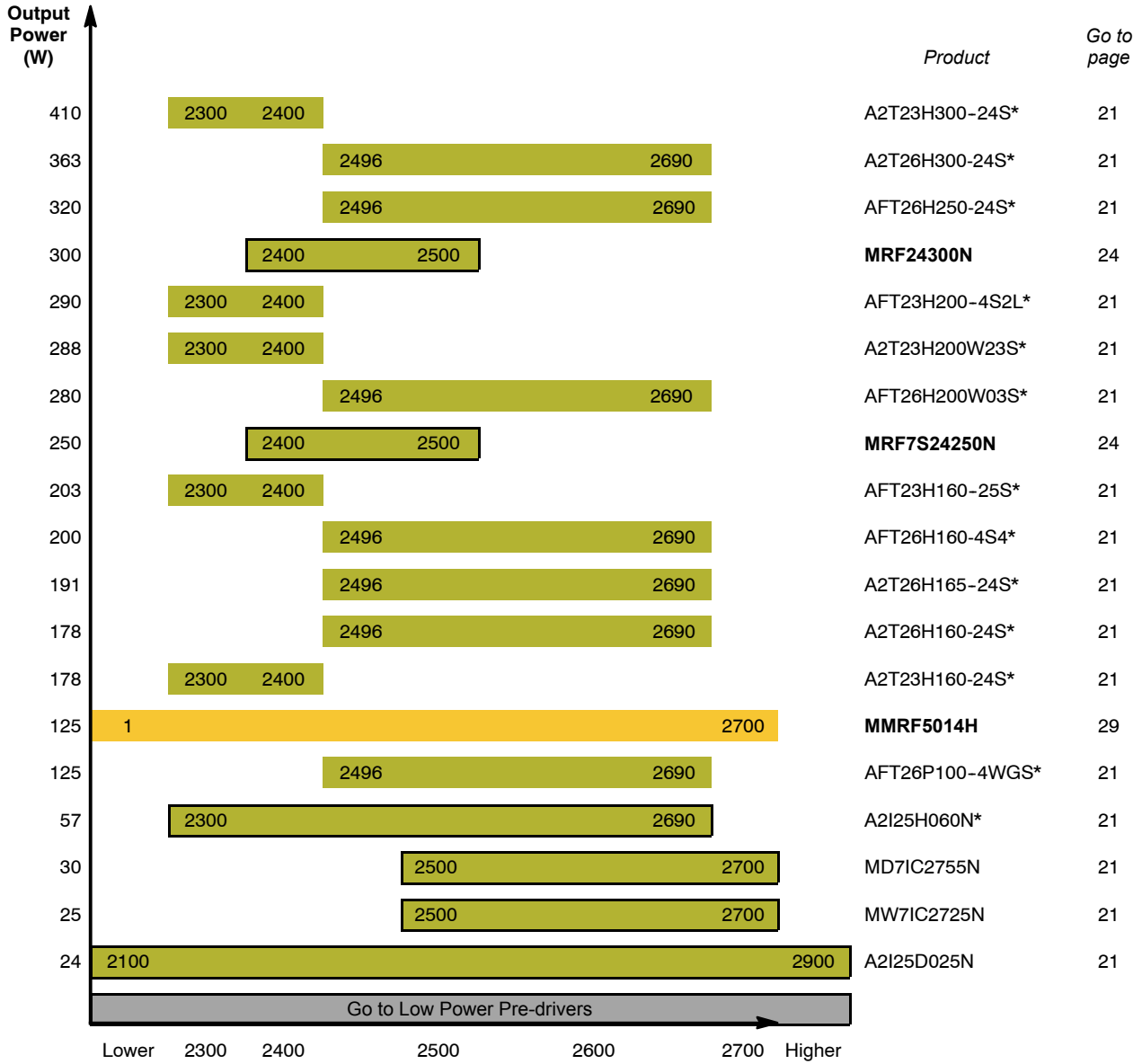


Table 5. RF Power Products — 2200–2700 MHz



(continued)

Bold = In NXP Product Longevity program  
\*Output Power measured at P3dB



# RF Power Product Porfolio (continued)

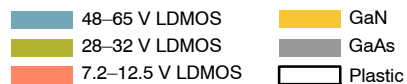
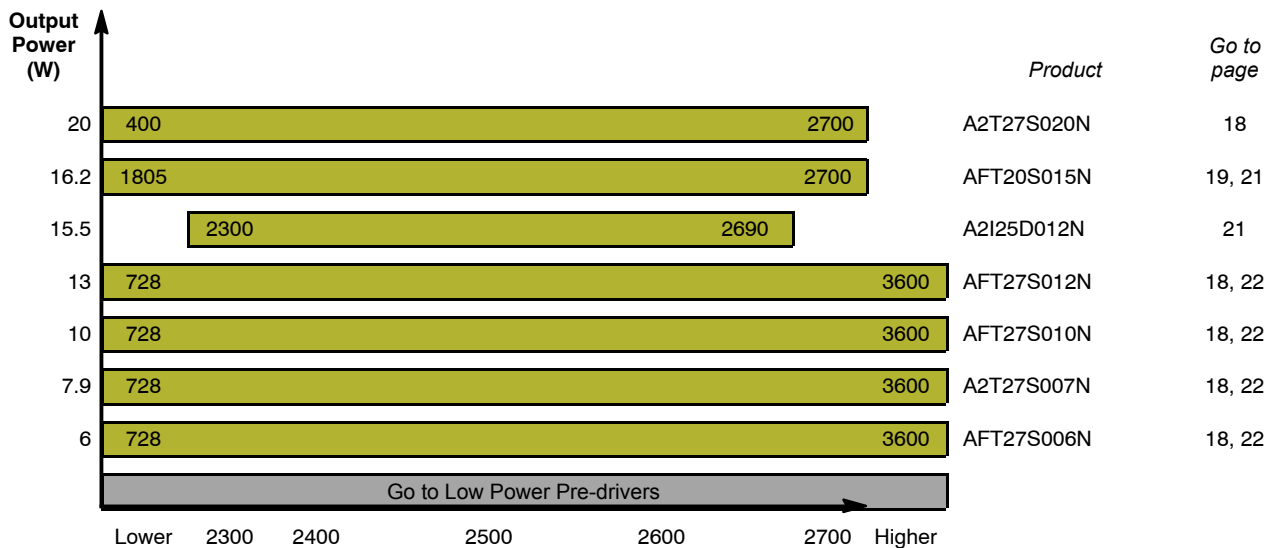


Table 5. RF Power Products — 2200–2700 MHz (continued)



Bold = In NXP Product Longevity program

# RF Power Product Portfolio (continued)

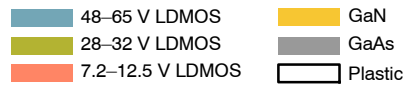
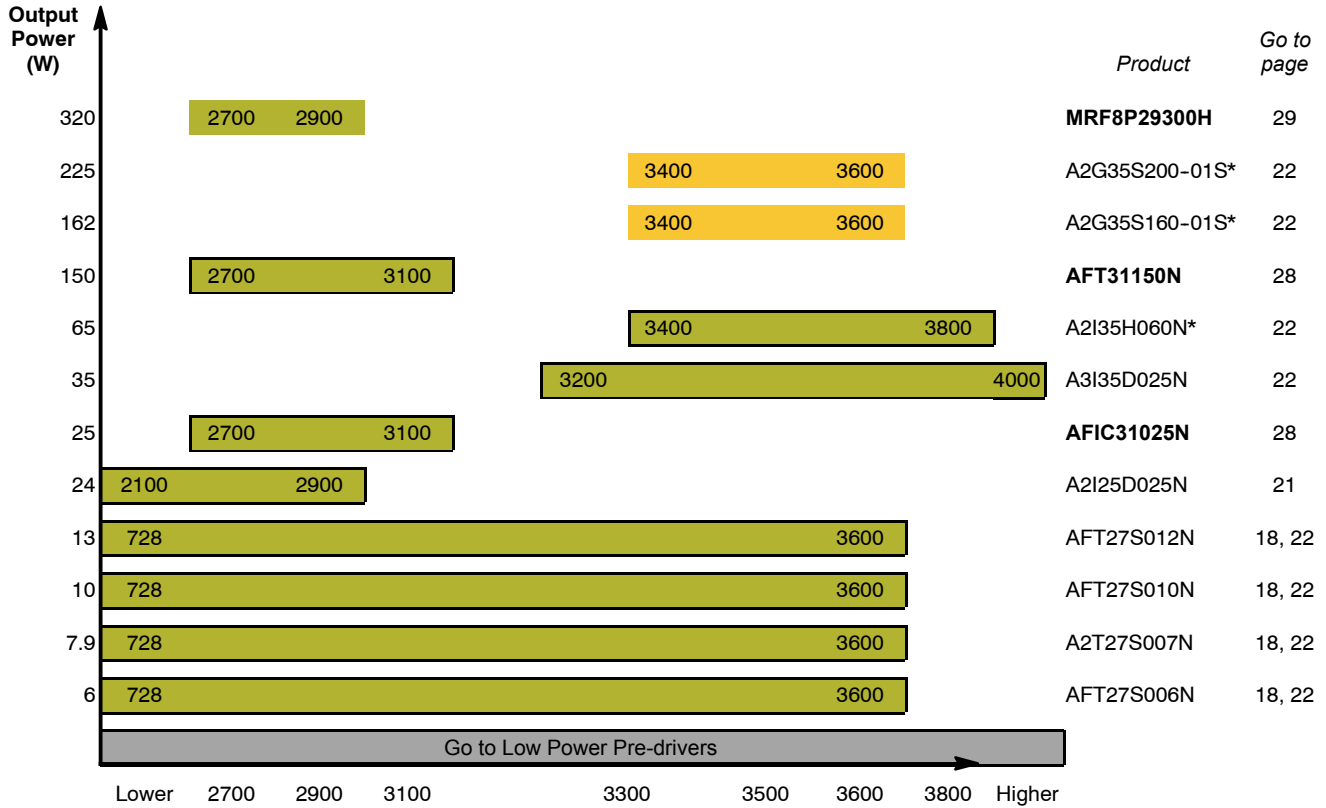


Table 6. RF Power Products — 2700–3800 MHz



Bold = In NXP Product Longevity program  
 \*Output Power measured at P3dB

# RF Power Product Portfolio (continued)

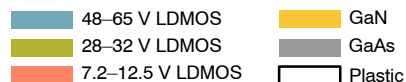
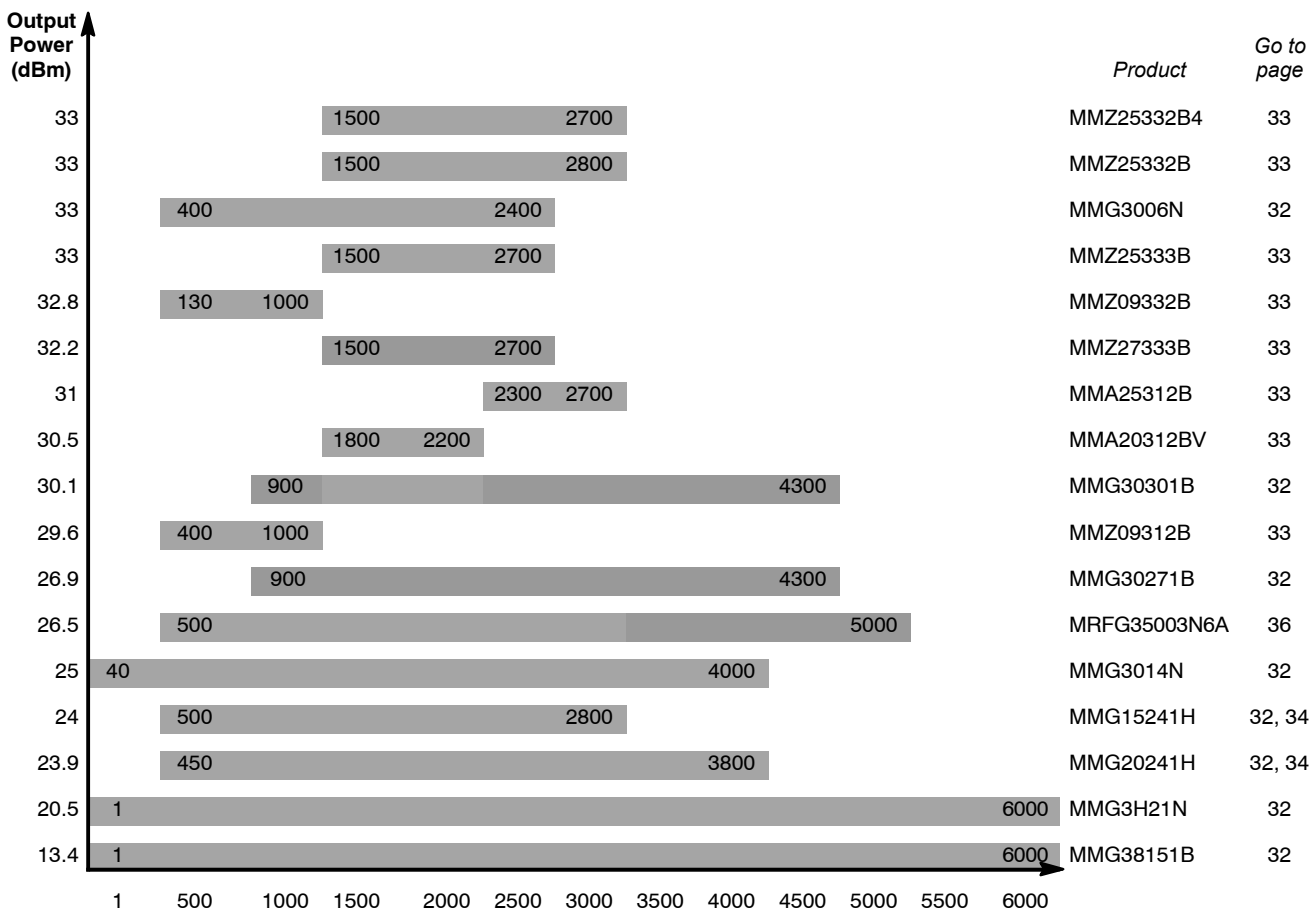


Table 7. RF Power Products — Low Power Pre-drivers



# RF Cellular Infrastructure

The NXP RF cellular infrastructure high power portfolio offers a full lineup of LDMOS and GaN power transistors and solutions for base stations and wireless infrastructure applications. Devices are designed for 450–1000 MHz, 1450–2200 MHz, 2300–2690 MHz and 3400–3800 MHz frequency operation, supporting cellular standards such as LTE, W-CDMA/UMTS, GSM, EDGE, CDMA and TD-SCDMA.

**Table 1. 450–1000 MHz**

Product	Frequency Band <sup>(3)</sup> MHz	P <sub>out</sub> (Typ) Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging	
MW6S004NT1	U	1–2000	4 PEP	2-Tone	28	18/1960	33	8.8	PLD-1.5
A2V07H400-04N <sup>(2b)</sup>	I	595–851	107 Avg.	W-CDMA	48	19.9/623	59.4	—	OM-780-4L
AFT27S006NT1	U	728–3600	0.76 Avg.	W-CDMA	28	22.5/2170	20.2	3.4	PLD-1.5W
A2T27S007NT1★	I/O	728–3600	0.76 Avg.	W-CDMA	28	22/2140	21.2	3.8	DFN 4 × 6
AFT27S010NT1	U	728–3600	1.26 Avg.	W-CDMA	28	21.7/2170	22.6	3.5	PLD-1.5W
AFT27S012NT1★	U	728–3600	1.6 Avg.	W-CDMA	28	21.7/2170	22.6	3.5	PLD-1.5W
MW6S010GNR1	U	450–1500	10 PEP	2-Tone	28	18/960	32	2.85	TO-270G-2
MW7IC915NT1	I	865–895	1.6 Avg.	W-CDMA	28	38/880	17.4	3.2	PQFN 8 × 8
A2T27S020NR1★	U	400–2700	2.5 Avg.	W-CDMA	28	21.1/1840	20.9	1.6	TO-270-2
A2T27S020GNR1★	U	400–2700	2.5 Avg.	W-CDMA	28	21.1/1840	20.9	1.6	TO-270G-2
A2T08VD020NT1	I	728–960	2 Avg.	W-CDMA	48	19.1/960	21.1	3.7	PQFN 8 × 8
MD8IC925NR1	I/O	728–960	2.5 Avg.	W-CDMA	28	36.2/940	17.4	1.8	TO-270WB-14
MD8IC925GNR1	I/O	728–960	2.5 Avg.	W-CDMA	28	36.2/940	17.4	1.8	TO-270WBG-14
A2I09VD030NR1★	I	575–960	4 Avg.	W-CDMA	48	34.3/960	19.8	2.8	TO-270WB-15
A2I09VD030GNR1★	I	575–960	4 Avg.	W-CDMA	48	34.3/960	19.8	2.8	TO-270WBG-15
MW7IC930GNR1	I/O	920–960	3.2 Avg.	W-CDMA	28	35.9/940	16.5	1.6	TO-270WBLG-16
A2I08H040NR1	I	728–960	9 Avg.	W-CDMA	28	30.7/920	45.9	3.4	TO-270WB-15
A2I08H040GNR1	I	728–960	9 Avg.	W-CDMA	28	30.7/920	45.9	3.4	TO-270WBG-15
MRF8S7120NR3	I/O	728–768	32 Avg.	W-CDMA	28	19.2/768	38.1	0.65	OM-780-2L
MRF8S7170NR3	I/O	728–768	50 Avg.	W-CDMA	28	19.5/748	37	0.37	OM-780-2L
MRF8S7235NR3	I/O	728–768	63 Avg.	W-CDMA	28	20/728	36.1	0.33	OM-780-2L
MRF8P8300HR6	I/O	790–820	96 Avg.	W-CDMA	28	20.9/820	35.7	0.26	NI-1230H-4S
MRF8P8300HSR6	I/O	790–820	96 Avg.	W-CDMA	28	20.9/820	35.7	0.26	NI-1230S-4S
A2V07H525-04NR6★	I	595–851	120 Avg.	W-CDMA	48	17.5/623	56.9	0.42	OM-1230-4L
MRFE6S9060NR1	U	865–895	14 Avg.	N-CDMA	28	21.4/880	32.1	0.88	TO-270-2
MRFE6S9125NR1	I	865–895	27 Avg.	N-CDMA	28	20.2/880	31	0.45	TO-270WB-4
MRFE6S9125NBR1	I	865–895	27 Avg.	N-CDMA	28	20.2/880	31	0.45	TO-272WB-4
MD8IC970NR1	I/O	850–940	35 Avg.	2-Tone	28	32.6/940	42.1	0.6	TO-270WBL-16
MD8IC970GNR1	I/O	850–940	35 Avg.	2-Tone	28	32.6/940	42.1	0.6	TO-270WBLG-16
MRF8P9040NR1	I	728–960	4 Avg.	W-CDMA	28	19.9/960	19.1	1.5	TO-270WB-4
MRF8S9120NR3	I/O	865–960	33 Avg.	W-CDMA	28	19.8/960	34.2	0.62	OM-780-2L
A2T07D160W04SR3	I/O	716–960	30 Avg.	W-CDMA	28	21.5/803	48.5	0.63	NI-780S-4L
AFT09S200W02NR3	I/O	716–960	56 Avg.	W-CDMA	28	19.2/960	36.5	0.35	OM-780-2L
AFT09S200W02GNR3	I/O	716–960	56 Avg.	W-CDMA	28	19.2/960	36.5	0.35	OM-780G-2L
AFT09S200W02SR3	I/O	920–960	56 Avg.	W-CDMA	28	19.4/960	35.6	0.34	NI-780S-2L
MRF8S9200NR3	I/O	920–960	58 Avg.	W-CDMA	28	19.9/940	37.1	0.30	OM-780-2L
MRF8P9210NR3	I/O	920–960	63 Avg.	W-CDMA	28	16.7/960	47.4	0.53	OM-780-4L
AFT09S220-02NR3	I/O	850–960	54 Avg.	W-CDMA	28	19.5/920	35.8	0.3	OM-780-2L
MRF8S9220HSR3	I/O	920–960	65 Avg.	W-CDMA	28	19.4/960	35.7	0.39	NI-780S-2L
MRF8S9232NR3	I/O	865–960	63 Avg.	W-CDMA	28	18.1/960	36.3	0.27	OM-780-2L
A2T09VD250NR1	I	716–960	65 Avg.	W-CDMA	48	22.5/920	34.8	0.56	TO-270WB-6A
AFT09S282NR3	I/O	720–960	80 Avg.	W-CDMA	28	20/960	36.1	0.31	OM-780-2L
A2T09VD300NR1	I	716–960	79 Avg.	W-CDMA	48	21.5/920	34.4	0.66	TO-270WB-6A

<sup>(2)</sup>To be introduced: a) 2Q17; b) 3Q17; c) 4Q17.

<sup>(3)</sup>U = Unmatched; I = Input; I/O = Input/Output.

★New Product

## RF Cellular Infrastructure (continued)

**Table 1. 450–1000 MHz (continued)**

Product	Frequency Band <sup>(3)</sup> MHz	P <sub>out</sub> (Typ) Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
A2V09H300-04NR3	I/O 720–960	79 Avg.	W-CDMA	48	19.7/940	55.9	0.34	OM-780-4L
A2V09H400-04NR3★	I 720–960	107 Avg.	W-CDMA	48	18/780	55.8	0.5	OM-780-4L
A2T09D400-23NR6	I/O 716–960	93 Avg.	W-CDMA	28	17.9/836	48	0.29	OM-1230-4L2S
MRF8P9300HSR6	I/O 920–960	100 Avg.	W-CDMA	28	19.4/960	35.8	0.22	NI-1230S-4S
A2T07H310-24SR6	I/O 716–960	47 Avg.	W-CDMA	28	18.6/880	51.3	0.36	NI-1230S-4L2L
AFT09H310-03SR6	I/O 920–960	56 Avg.	W-CDMA	28	17.9/920	47.4	0.41	NI-1230S-4S
AFT09H310-04GSR6	I/O 920–960	56 Avg.	W-CDMA	28	17.9/920	47.4	0.41	NI-1230GS-4L
AFV09P350-04NR3	I/O 720–960	100 Avg.	W-CDMA	48	19.5/920	48.5	0.45	OM-780-4L
AFV09P350-04GNR3	I/O 720–960	100 Avg.	W-CDMA	48	19.5/920	48.5	0.45	OM-780G-4L
A2V09H525-04NR6★	I 720–960	120 Avg.	W-CDMA	48	18.9/940	56.7	0.23	OM-1230-4L

**Table 2. 1450–2200 MHz**

Product	Frequency Band <sup>(3)</sup> MHz	P <sub>out</sub> (Typ) Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
MW6S004NT1	U 1–2000	4 PEP	2-Tone	28	18/1960	33	8.8	PLD-1.5
MW6S010GNR1	U 450–1500	10 PEP	2-Tone	28	18/960	32	2.85	TO-270G-2
A2T14H450-23NR6★	I/O 1452–1511	93 Avg.	W-CDMA	31	18.8/1452	48.2	0.27	OM-1230-4L2S
MRF6S20010NR1	I 1600–2200	10 PEP	2-Tone	28	15.5/2170	36	5.9	TO-270-2
MRF6S20010GNR1	I 1600–2200	10 PEP	2-Tone	28	15.5/2170	36	5.9	TO-270G-2
MD7IC1812NR1	I/O 1805–2170	1.3 Avg.	W-CDMA	28	31.5/1880	14	2.9	TO-270WB-14
MD7IC1812GNR1	I/O 1805–2170	1.3 Avg.	W-CDMA	28	31.5/1880	14	2.9	TO-270WBG-14
MD7IC2012NR1	I/O 1805–2170	1.3 Avg.	W-CDMA	28	31.5/2170	14.9	3.1	TO-270WB-14
AFT20S015NR1	I 1805–2700	1.5 Avg.	W-CDMA	28	17.6/2170	22	4.2	TO-270-2
AFT20S015GNR1	I 1805–2700	1.5 Avg.	W-CDMA	28	17.6/2170	22	4.2	TO-270G-2
MW7IC2020NT1	I/O 1805–2170	2.4 Avg.	W-CDMA	28	32.6/2140	17	1.9	PQFN 8 × 8
A2I20D020NR1	I/O 1400–2200	2.5 Avg	W-CDMA	28	31/1800	19.7	2.9	TO-270WB-17
A2I20D020GNR1	I/O 1400–2200	2.5 Avg	W-CDMA	28	31/1800	19.7	2.9	TO-270WBG-17
A2T20VD025N <sup>(2b)</sup>	I/O 1800–2200	4 Avg.	W-CDMA	48	21.8/1840	18.4	—	TO-270-4
A2T20VD025GN <sup>(2b)</sup>	I/O 1800–2200	4 Avg.	W-CDMA	48	21.8/1840	18.4	—	TO-270G-4
MW7IC2040NR1	I/O 1930–1990	4 Avg.	W-CDMA	28	32/1930	17.5	1.5	TO-270WBL-16
MW7IC2240NR1	I/O 2110–2170	4 Avg.	W-CDMA	28	30/2110	14	1.3	TO-270WB-16
A2I20D040NR1	I/O 1400–2200	5 Avg	W-CDMA	28	32.7/1800	21.8	1.3	TO-270WB-17
A2I20D040GNR1	I/O 1400–2200	5 Avg	W-CDMA	28	32.7/1800	21.8	1.3	TO-270WBG-17
A2I22D050NR1	I 1800–2200	5.3 Avg.	W-CDMA	28	32.6/2170	17.9	1.1	TO-270WB-15
A2I22D050GNR1	I 1800–2200	5.3 Avg.	W-CDMA	28	32.6/2170	17.9	1.1	TO-270WBG-15
MD7IC2250GNR1	I/O 2110–2170	5.3 Avg.	W-CDMA	28	31.1/2170	16.8	1.1	TO-270WBG-14
MD7IC2251GNR1	I/O 2110–2170	12 Avg.	W-CDMA	28	29.0/2140	37.9	1.5	TO-270WBG-14
A2I20H060NR1	I/O 1800–2200	12 Avg	W-CDMA	28	28.4/1840	43.8	1.6	TO-270WB-15
A2I20H060GNR1	I/O 1800–2200	12 Avg	W-CDMA	28	28.4/1840	43.8	1.6	TO-270WBG-15
A2I20H080NR1	I/O 1800–2200	13.5 Avg	W-CDMA	30	28.2/1840	43.4	1.9	TO-270WB-15
A2I20H080GNR1	I/O 1800–2200	13.5 Avg	W-CDMA	30	28.2/1840	43.4	1.9	TO-270WBG-15
A2T18H160-24SR3	I/O 1805–1880	28 Avg.	W-CDMA	28	17.9/1805	49.9	0.45	NI-780S-4L2L
A2T18S162W31SR3	I/O 1805–1880	32 Avg.	W-CDMA	28	20.1/1840	33.9	0.36	NI-780S-2L2LA
A2T18S162W31GSR3	I/O 1805–1880	32 Avg.	W-CDMA	28	20.1/1840	33.9	0.36	NI-780GS-2L2LA
AFT18S230-12NR3	I/O 1805–1880	50 Avg.	W-CDMA	28	17.6/1880	33.8	0.27	OM-780-2L2L
AFT18S230SR3	I/O 1805–1880	50 Avg.	W-CDMA	28	19.0/1880	32.0	0.41	NI-780S-2L4S
A2T18S260W12NR3	I/O 1805–1880	56 Avg.	W-CDMA	28	18.7/1880	34.4	0.23	OM-880X-2L2L
A2T18S261W12NR3★	I/O 1805–1880	56 Avg.	W-CDMA	28	18.2/1880	34.8	0.23	OM-880X-2L2L
A2T18S262W12NR3★	I/O 1805–1880	56 Avg.	W-CDMA	28	19.3/1880	33.1	0.23	OM-880X-2L2L

<sup>(2)</sup>To be introduced: a) 2Q17; b) 3Q17; c) 4Q17.

<sup>(3)</sup>U = Unmatched; I = Input; I/O = Input/Output.

★New Product

## RF Cellular Infrastructure (continued)

Table 2. 1450–2200 MHz (continued)

Product	Frequency Band <sup>(3)</sup> MHz	P <sub>out</sub> (Typ) Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
AFT18H357-24NR6	I/O 1805–1880	63 Avg.	W-CDMA	28	17.5/1805	48.7	0.23	OM-1230-4L2L
A3T18H360W23SR6★	I/O 1805–1880	63 Avg.	W-CDMA	28	16.6/1880	51.6	0.22	ACP-1230S-4L2S
A3T18H400W23S <sup>(2b)</sup>	I/O 1805–1880	71 Avg.	W-CDMA	28	16.8/1840	53.4	—	ACP-1230S-4L2S
A2T18H410-24SR6	I/O 1805–1880	71 Avg.	W-CDMA	28	17.4/1805	51.2	0.24	NI-1230S-4L2L
A2T18H450W19SR6	I/O 1805–1880	89 Avg.	W-CDMA	30	16.5/1880	47.7	0.27	NI-1230S-4S4S
A2T18H455W23NR6	I/O 1805–1880	87 Avg.	W-CDMA	31.5	15.9/1880	48.4	0.23	OM-1230-4L2S
A3T18H455W23S <sup>(2b)</sup>	I/O 1805–1880	87 Avg.	W-CDMA	30	16.7/1805	50.4	—	ACP-1230S-4L2S
A3G18H500-04SR3★	I/O 1805–1880	107 Avg.	W-CDMA	28	15.4/1840	57.7	0.60	NI-780S-4L
A2T18H100-25SR3	I/O 1805–1995	18 Avg.	W-CDMA	28	18.1/1805	50.2	0.74	NI-780S-4L4S
A2T18S160W31SR3	I/O 1805–1995	32 Avg.	W-CDMA	28	19.9/1880	31.6	0.36	NI-780S-2L2LA
A2T18S160W31GSR3	I/O 1805–1995	32 Avg.	W-CDMA	28	19.9/1880	31.6	0.36	NI-780GS-2L2LA
A2T18S165-12SR3★	I/O 1805–1995	38 Avg.	W-CDMA	28	18.0/1840	34.3	0.39	NI-780S-2L2L
A2T18S260-12SR3★	I/O 1805–1995	50 Avg.	W-CDMA	28	18.9/1805	30.1	0.36	NI-780S-2L2L
MRF8P20165WHR3	I/O 1930–1995	37 Avg.	W-CDMA	28	16.3/1995	46.0	0.79	NI-780H-4L
AFT18S260W31SR3	I/O 1805–1995	50 Avg.	W-CDMA	28	19.8/1880	29.3	0.32	NI-780S-2L2LA
AFT18S260W31GSR3	I/O 1805–1995	50 Avg.	W-CDMA	28	19.8/1880	29.3	0.32	NI-780GS-2L2LA
MRF8S18210WHR3	I/O 1805–1995	50 Avg.	W-CDMA	30	17.8/1930	29.2	0.48	NI-880XS-2L
MRF8S18210WGHR3	I/O 1805–1995	50 Avg.	W-CDMA	30	17.8/1930	29.2	0.48	NI-880XGS-2L
AFT18S290-13SR3	I/O 1805–1995	63 Avg.	W-CDMA	28	18.2/1960	31.2	0.42	NI-880XS-2L4S
AFT18H356-24SR6	I/O 1805–1995	63 Avg.	W-CDMA	28	15/1880	46.7	0.47	NI-1230S-4L2L
AFT18H357-24SR6	I/O 1805–1995	63 Avg.	W-CDMA	28	17.3/1805	50.3	0.43	NI-1230S-4L2L
AFT20P140-4WNR3	I/O 1880–2025	24 Avg.	W-CDMA	28	17.6/2025	41.2	0.60	OM-780-4L
MRF8P20140WHR3	I/O 1880–2025	24 Avg.	W-CDMA	28	15.9/2025	42.0	0.68	NI-780H-4L
MRF8P20140WHR3	I/O 1880–2025	24 Avg.	W-CDMA	28	15.9/2025	42.0	0.68	NI-780S-4L
MRF8P20140WGHR3	I/O 1880–2025	24 Avg.	W-CDMA	28	15.9/2025	42.0	0.68	NI-780GS-4L
A2T20H160W04NR3	I/O 1880–2025	28 Avg.	W-CDMA	28	17/1960	47.7	0.45	OM-780-4L
MRF8P20160HR3	I/O 1880–2025	37 Avg.	W-CDMA	28	16.5/1920	45.8	0.75	NI-780H-4L
A2T20H330W24NR6★	I/O 1880–2025	55 Avg.	W-CDMA	28	15.9/1880	49.8	0.26	OM-1230-4L2L
A2T20H330W24SR6	I/O 1880–2025	58 Avg.	W-CDMA	28	16.5/1880	50.9	0.25	NI-1230S-4L2L
AFT20P060-4NR3	I/O 1805–2170	6.3 Avg.	W-CDMA	28	18.9/2170	20	0.56	OM-780-4L
AFT20P060-4GHR3	I/O 1805–2170	6.3 Avg.	W-CDMA	28	18.9/2170	20	0.56	OM-780G-4L
MRF8HP21080HR3	I/O 2110–2170	16 Avg.	W-CDMA	28	14.4/2170	45.7	1.0	NI-780H-4L
A2T21H100-25SR3	I/O 2110–2170	18 Avg.	W-CDMA	28	17.4/2170	50.5	0.76	NI-780S-4L4S
AFT21S140W02SR3	I/O 2110–2170	32 Avg.	W-CDMA	28	19.3/2140	33.5	0.59	NI-780S-2L
A2T21H140-24SR3★	I/O 2110–2170	36 Avg.	W-CDMA	28	17.4/2110	53.1	0.45	NI-780S-4L2L
A2T21S160-12SR3	I/O 2110–2170	38 Avg.	W-CDMA	28	18.4/2170	32.9	0.3	NI-780S-2L2L
A2G22S160-01SR3	I 1800–2200	32 Avg.	W-CDMA	48	19.6/2110	38	1.7	NI-400S-2S
AFT21S220W02SR3	I/O 2110–2170	50 Avg.	W-CDMA	28	19.1/2140	29.3	0.56	NI-780S-2L
AFT21S230SR3	I/O 2110–2170	50 Avg.	W-CDMA	28	16.7/2110	30.5	0.43	NI-780S-2L4S
AFT21S230-12SR3	I/O 2110–2170	50 Avg.	W-CDMA	28	16.7/2110	30.5	0.43	NI-780S-2L2L

<sup>(2)</sup>To be introduced: a) 2Q17; b) 3Q17; c) 4Q17.

<sup>(3)</sup>U = Unmatched; I = Input; I/O = Input/Output.

★New Product

## RF Cellular Infrastructure (continued)

**Table 2. 1450–2200 MHz (continued)**

Product	Frequency Band <sup>(3)</sup> MHz	P <sub>out</sub> (Typ) Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
AFT21S232SR3	I/O 2110–2170	50 Avg.	W-CDMA	28	16.7/2110	30.5	0.43	NI-780S-2L
AFT21S240-12SR3	I/O 2110–2170	55 Avg.	W-CDMA	28	20.4/2170	33.9	0.35	NI-880XS-2L2L
A2G22S251-01SR3	I 1805–2200	48 Avg.	W-CDMA	48	17.7/2170	37.5	1.3	NI-400S-2S
A2T21S260W12NR3★	I/O 2110–2220	56 Avg.	W-CDMA	28	17.9/2170	31.8	0.24	OM-880X-2L2L
A2T21S260-12SR3	I/O 2110–2170	65 Avg.	W-CDMA	28	18.7/2170	30.6	0.28	NI-780S-2L2L
AFT21H350W03SR6	I/O 2110–2170	63 Avg.	W-CDMA	28	16.4/2110	47.1	0.49	NI-1230S-4S
AFT21H350W04GSR6	I/O 2110–2170	63 Avg.	W-CDMA	28	16.4/2110	47.1	0.49	NI-1230GS-4L
A3T21H360W23S <sup>(2b)</sup>	I/O 2110–2200	56 Avg.	W-CDMA	28	16.5/2200	48.7	—	ACP-1230S-4L2S
A2T21H360-23NR6	I/O 2110–2200	63 Avg.	W-CDMA	28	16.8/2140	49.7	0.19	OM-1230-4L2S
A2T21H360-24SR6	I/O 2110–2170	63 Avg.	W-CDMA	28	16.2/2140	51.8	0.33	NI-1230S-4L2L
A2T21H410-24SR6	I/O 2110–2170	72 Avg.	W-CDMA	28	15.6/2170	48.9	0.24	NI-1230S-4L2L
A3T21H450W23S <sup>(2b)</sup>	I/O 2110–2200	87 Avg.	W-CDMA	30	15.1/2110	46.7	—	ACP-1230S-4L2S
A2T21H450W19SR6	I/O 2110–2200	89 Avg.	W-CDMA	30	15.7/2110	46.1	0.26	NI-1230S-4S4S

**Table 3. 2300–2690 MHz**

Product	Frequency Band <sup>(3)</sup> MHz	P <sub>out</sub> (Typ) Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
A2I25D012NR1	I 2300–2690	2.2 Avg.	W-CDMA	28	33.2/2690	19.8	3.3	TO-270WB-15
A2I25D012GNR1	I 2300–2690	2.2 Avg.	W-CDMA	28	33.2/2690	19.8	3.3	TO-270WBG-15
AFT20S015NR1	I 1805–2690	1.5 Avg.	W-CDMA	28	17.6/2170	22	4.2	TO-270-2
AFT20S015GNR1	I 1805–2690	1.5 Avg.	W-CDMA	28	17.6/2170	22	4.2	TO-270G-2
A2I25D025NR1	I 2100–2900	3.2 Avg.	W-CDMA	28	32.5/2600	20	1.8	TO-270WB-17
A2I25D025GNR1	I 2100–2900	3.2 Avg.	W-CDMA	28	32.5/2600	20	1.8	TO-270WBG-17
MW7IC2725NR1	I/O 2500–2700	4 Avg.	WiMAX	28	28.5/2700	17	1.4	TO-270WB-16
MD7IC2755NR1	I/O 2500–2700	10 Avg.	WiMAX	28	25/2700	25	1.8	TO-270WB-14
A2I25H060NR1	I 2300–2690	10.5 Avg.	W-CDMA	28	27.5/2590	40.9	2.2	TO-270WB-17
A2I25H060GNR1	I 2300–2690	10.5 Avg.	W-CDMA	28	27.5/2590	40.9	2.2	TO-270WBG-17
A2T23H160-24SR3	I/O 2300–2400	28 Avg.	W-CDMA	28	17.7/2300	48.8	0.49	NI-780S-4L2L
AFT23H160-25SR3	I/O 2300–2400	32 Avg.	W-CDMA	28	16.7/2300	46.6	0.40	NI-880XS-4L4S
A2T23H200W23S <sup>(2a)</sup>	I/O 2300–2400	51 Avg.	W-CDMA	28	15.5/2300	50.7	0.29	ACP-1230S-4L2S
AFT23H200-4S2LR6	I/O 2300–2400	45 Avg.	W-CDMA	28	15.3/2300	42.8	0.32	NI-1230S-4L2L
AFT23H201-24SR6★	I/O 2300–2400	45 Avg.	W-CDMA	28	15.6/2300	46.2	0.027	ACP-1230S-4L2L
A2T23H300-24SR6	I/O 2300–2400	66 Avg.	W-CDMA	28	14.9/2300	46.7	0.25	NI-1230S-4L2L
AFT26P100-4WGSR3	I/O 2496–2690	22 Avg.	W-CDMA	28	15.3/2690	43.9	0.60	NI-780GS-4L
A2T26H160-24SR3	I/O 2496–2690	28 Avg.	W-CDMA	28	16.4/2690	48.1	0.56	NI-780S-4L2L
AFT26H160-4S4R3	I/O 2496–2690	32 Avg.	W-CDMA	28	14.9/2496	45.7	0.41	NI-880XS-4L4S
A2T26H165-24SR3	I/O 2496–2690	32 Avg.	W-CDMA	28	14.7/2496	45.4	0.45	NI-780S-4L2L
AFT26H200W03SR6	I/O 2496–2690	45 Avg.	W-CDMA	28	14.1/2496	45.2	0.46	NI-1230S-4S
AFT26H250-24SR6	I/O 2496–2690	50 Avg.	W-CDMA	28	14.1/2496	44.6	0.42	NI-1230S-4L2L
A2G26H281-04SR3★	I 2496–2690	50 Avg.	W-CDMA	48	14.3/2635	60.9	1.0	NI-780S-4L
A2T26H300-24SR6	I/O 2496–2690	60 Avg.	W-CDMA	28	14.5/2496	42.5	0.29	NI-1230S-4L2L

<sup>(2)</sup>To be introduced: a) 2Q17; b) 3Q17; c) 4Q17.

<sup>(3)</sup>U = Unmatched; I = Input; I/O = Input/Output.

★New Product

## RF Cellular Infrastructure (continued)

**Table 4. 3400–3800 MHz**

Product	Frequency Band <sup>(3)</sup> MHz		P <sub>out</sub> (Typ) Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
AFT27S006NT1	U	728–3600	0.76 Avg.	W-CDMA	28	22.5/2170	20.2	3.4	PLD-1.5W
A2T27S007NT1★	I/O	728–3600	0.76 Avg.	W-CDMA	28	22/2140	21.2	3.8	DFN 4 × 6
AFT27S010NT1	U	728–3600	1.26 Avg.	W-CDMA	28	21.7/2170	22.6	3.5	PLD-1.5W
AFT27S012NT1★	U	728–3600	1.6 Avg.	W-CDMA	28	21.7/2170	22.6	3.5	PLD-1.5W
A3I35D025N <sup>(2c)</sup>	I/O	3200–4000	3.4 Avg.	W-CDMA	28	27.8/3600	16.3	—	TO-270WB-17
A3I35D025GN <sup>(2c)</sup>	I/O	3200–4000	3.4 Avg.	W-CDMA	28	27.8/3600	16.3	—	TO-270WBG-17
A2I35H060NR1	I/O	3400–3800	10 Avg.	W-CDMA	28	24/3400	32.4	1.7	TO-270WB-17
A2I35H060GNR1	I/O	3400–3800	10 Avg.	W-CDMA	28	24/3400	32.4	1.7	TO-270WBG-17
A2G35S160-01SR3	I	3400–3600	32 Avg.	W-CDMA	48	15.7/3500	36.7	1.9	NI-400S-2S
A2G35S200-01SR3	I	3400–3600	40 Avg.	W-CDMA	48	16.1/3500	35.3	1.3	NI-400S-2S

<sup>(2)</sup>To be introduced: a) 2Q17; b) 3Q17; c) 4Q17.

<sup>(3)</sup>U = Unmatched; I = Input; I/O = Input/Output.

★New Product



# RF ISM (Industrial, Scientific and Medical) and Broadcast

NXP RF industrial, scientific, medical (ISM) and broadcast RF power transistors are designed to simplify the use of solid-state RF in high-powered ISM applications at frequencies from 1 to 600 MHz. The devices serve applications in the 915, 1300 and 2450 MHz frequency bands and are well-suited for FM radio and VHF and UHF TV broadcast.

**Table 1. Wideband GaN — 1–2500 MHz**

Product	Frequency Band <sup>(3)</sup> MHz		P <sub>out</sub> Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
	I								
AFG24S100HR5	I	1–2500	125 CW	CW	50	16/2500	64.2	0.86	NI-360H-2SB

**Table 2. Wideband LDMOS — 1–2000 MHz**

Product	Frequency Band <sup>(3)</sup> MHz		P <sub>out</sub> Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
	U								
MRFE6VS25NR1	U	1.8–2000	25 CW	CW	50	25.5/512	75.0	1.2	TO-270-2
MRFE6VS25GNR1	U	1.8–2000	25 CW	CW	50	25.5/512	75.0	1.2	TO-270G-2
MRFE6VS25LR5	U	1.8–2000	25 CW	CW	50	25.9/512	74.0	1.4	NI-360H-2L
MRFE6VP100HR5	U	1.8–2000	100 CW	CW	50	27.2/512	70.0	0.38	NI-780H-4L
MRFE6VP100HSR5	U	1.8–2000	100 CW	CW	50	27.2/512	70.0	0.38	NI-780S-4L

**Table 3. ISM and Broadcast LDMOS — 1–600 MHz**

Product	Frequency Band <sup>(3)</sup> MHz		P <sub>out</sub> Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
	U								
MRF6V2010NR1	U	1.8–600	10 CW	CW	50	23.9/220	62	3.0	TO-270-2
MRF6V2010GNR1	U	1.8–600	10 CW	CW	50	23.9/220	62	3.0	TO-270G-2
MRF085H <sup>(2b)</sup>	U	30–520	85 CW	CW	50	25.2/520	73.5	—	NI-650H-4L
MRFE6VP5150NR1	U	1.8–600	150 CW	CW	50	26.3/230	72	0.21	TO-270WB-4
MRFE6VP5150GNR1	U	1.8–600	150 CW	CW	50	26.3/230	72	0.21	TO-270WBG-4
MRFE6VP5300NR1	U	1.8–600	300 CW	CW	50	25/230	70	0.22	TO-270WB-4
MRFE6VP5300GNR1	U	1.8–600	300 CW	CW	50	25/230	70	0.22	TO-270WBG-4
MRFE6VP6300HSR5	U	1.8–600	300 CW	CW	50	25/130	80	0.19	NI-780S-4L
MRFE6VP6300GSR5	U	1.8–600	300 CW	CW	50	25/130	80	0.19	NI-1230GS-4L
MRFE6VP5600HR6	U	1.8–600	600 CW	CW	50	24.6/230	75.2	0.12	NI-1230H-4S
MRFE6VP5600HSR5	U	1.8–600	600 CW	CW	50	24.6/230	75.2	0.12	NI-1230S-4S
MRFE6VP6600NR3	U	1.8–600	600 CW	CW	50	24/98	81.8	0.33	OM-780-4L
MRFE6VP6600GNR3	U	1.8–600	600 CW	CW	50	24/98	81.8	0.33	OM-780G-4L
MRFE6VP61K25HR5	U	1.8–600	1250 CW	CW	50	22.9/230	74.6	0.15	NI-1230H-4S
MRFE6VP61K25HR6	U	1.8–600	1250 CW	CW	50	22.9/230	74.6	0.15	NI-1230H-4S
MRFE6VP61K25HSR5	U	1.8–600	1250 CW	CW	50	22.9/230	74.6	0.15	NI-1230S-4S
MRFE6VP61K25GSR5	U	1.8–600	1250 CW	CW	50	22.9/230	74.6	0.15	NI-1230GS-4L
MRFE6VP61K25NR6	U	1.8–600	1250 CW	CW	50	22.5/230	72.3	0.06	OM-1230-4L
MRFE6VP61K25GNR6	U	1.8–600	1250 CW	CW	50	22.5/230	72.3	0.06	OM-1230G-4L
MRF1K50HR5★	U	1.8–500	1500 CW	CW	50	23/230	74	0.028	NI-1230H-4S
MRF1K50NR5★	U	1.8–500	1500 CW	CW	50	23.4/230	75.1	0.015	OM-1230-4L
MRF1K50GNR5★	U	1.8–500	1500 CW	CW	50	23.4/230	75.1	0.015	OM-1230G-4L
MRFX1K80H <sup>(2b)</sup>	U	1.8–470	1800 CW	CW	65	24/230	74	0.09	NI-1230H-4S
MRFX1K80N <sup>(2b)</sup>	U	1.8–470	1800 CW	CW	65	24/230	74	—	OM-1230-4L
MRFX1K80GN <sup>(2b)</sup>	U	1.8–470	1800 CW	CW	65	24/230	74	—	OM-1230G-4L

<sup>(2)</sup>To be introduced: a) 2Q17; b) 3Q17; c) 4Q17.

<sup>(3)</sup>U = Unmatched; I = Input; I/O = Input/Output.

★New Product

## RF ISM (Industrial, Scientific and Medical) and Broadcast (continued)

**Table 4. UHF Broadcast LDMOS — 470–860 MHz**

Product	Frequency Band <sup>(3)</sup> MHz		P <sub>out</sub> Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
MRFE6S9060NR1	U	470–860	14 Avg.	N-CDMA	28	21.4/880	32.1	0.88	TO-270-2
MRF6V3090NR1	I	470–1215	18 Avg.	OFDM	50	22/860	28.5	0.79	TO-270WB-4
MRF6VP3091NR1	I	470–1215	18 Avg.	OFDM	50	22/860	28.5	0.79	TO-270WB-4
MRF6VP3450HR5	I	470–860	90 Avg.	OFDM	50	22.5/860	28	0.27	NI-1230H-4S
MRFE6VP8600HR5	I	470–860	125 Avg.	OFDM	50	19.3/860	30	0.19	NI-1230H-4S
MRFE6VP8600HSR5	I	470–860	125 Avg.	OFDM	50	19.3/860	30	0.19	NI-1230S-4S
MRFE8VP8600HR5	I	470–860	140 Avg.	OFDM	50	20/810	34	0.16	NI-1230H-4S
MRFE8VP8600HSR5★	I	470–860	140 Avg.	OFDM	50	20/810	34	0.16	NI-1230S-4S

**Table 5. ISM LDMOS — 700–1300 MHz**

Product	Frequency Band <sup>(3)</sup> MHz		P <sub>out</sub> Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
MRFE6S9060NR1	U	470–860	14 Avg.	N-CDMA	28	21.4/880	32.1	0.88	TO-270-2
MRF8VP13350NR3	I	700–1300	350 CW	CW	50	20.7/915	67.5	0.24	OM-780-4L
MRF8VP13350GNR3	I	700–1300	350 CW	CW	50	20.7/915	67.5	0.24	OM-780G-4L
MRF13750H <sup>(2c)</sup>	I	700–1300	750 CW	CW	50	19.5/915	63	—	NI-1230H-4S
MRF13750HS <sup>(2c)</sup>	I	700–1300	750 CW	CW	50	19.5/915	63	—	NI-1230S-4S

**Table 6. ISM LDMOS — 2400–2500 MHz**

Product	Frequency Band <sup>(3)</sup> MHz		P <sub>out</sub> Watts	Test Signal	V <sub>DD</sub> Volts	Gain (Typ)/Freq. dB/MHz	Eff. (Typ) %	θ <sub>JC</sub> °C/W	Packaging
MRF7S24250NR3	I/O	2400–2500	250 CW	CW	32	15.9/2450	59	0.26	OM-780-2L
MRF24300NR3	I/O	2400–2500	300 CW	CW	32	13.1/2450	60.5	0.24	OM-780-2L

<sup>(2)</sup>To be introduced: a) 2Q17; b) 3Q17; c) 4Q17.

<sup>(3)</sup>U = Unmatched; I = Input; I/O = Input/Output.

★New Product