

Wireless Infrastructure

RFHIC PRODUCT CATALOGUE



rfhic.com

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About RFHIC

24 Years of RF & Microwave Expertise

We are the global leaders in designing and manufacturing GaN-based RF & microwave components for various applications in wireless infrastructure, defense & aerospace and rf energy sectors. We're innovators, creating the technology that transforms industries, enhances lives, and shapes our future.



Technology Overview

Experts in GaN Device Design and Doherty Pallet Amplifier Design

We were the first to commercialize GaN-on-SiC technologies for 4G back in 2011. We are now continuing the leadership in 5G by offering industry-leading efficiency while meeting the challenging FCC and other spectrum requirements. Our GaN-on-SiC hybrid PAM solution is intensively integrated into an asymmetrical 2-stage (driver+Doherty) structure as a solution. It is also used at the drive stage by compactly combining the pre-driver and driver to provide suitable solutions.

Our Services

RFHIC's One-Stop Solution Service

We offer optimized GaN device and power amplifier design and manufacturing solutions with the customer's DPD and 3rd party DPD. We offer a broad portfolio of drive and main stage GaN-on-silicon carbide (SiC) transistors that are internally matched, and VBW extended for Doherty design. Providing products with high thermal conductivity and competitive performance operable at broad frequency bands designed for 4G and 5G macro and small cell systems.

01. Transistor Assembly

- Custom Transistor Pkg
- In-house Grade 4 Clean Room Facility
- Operable from DC-40GHz
- Power Levels up to 1kW



04. Sub-System Assembly

- Operable from 500MHz-10GHz
- Power Levels Capable of up to Multi-kWs
- Complete device to system-level replacement capabilities



02. Transistor Testing

- HTRB (High-Temperature Reverse Bias) Age Testing
- DC Testing
- Ultrasound Testing



05. After Service Care

- In-house device to system-level expertise
- Faster service
- Higher customer satisfaction and brand loyalty

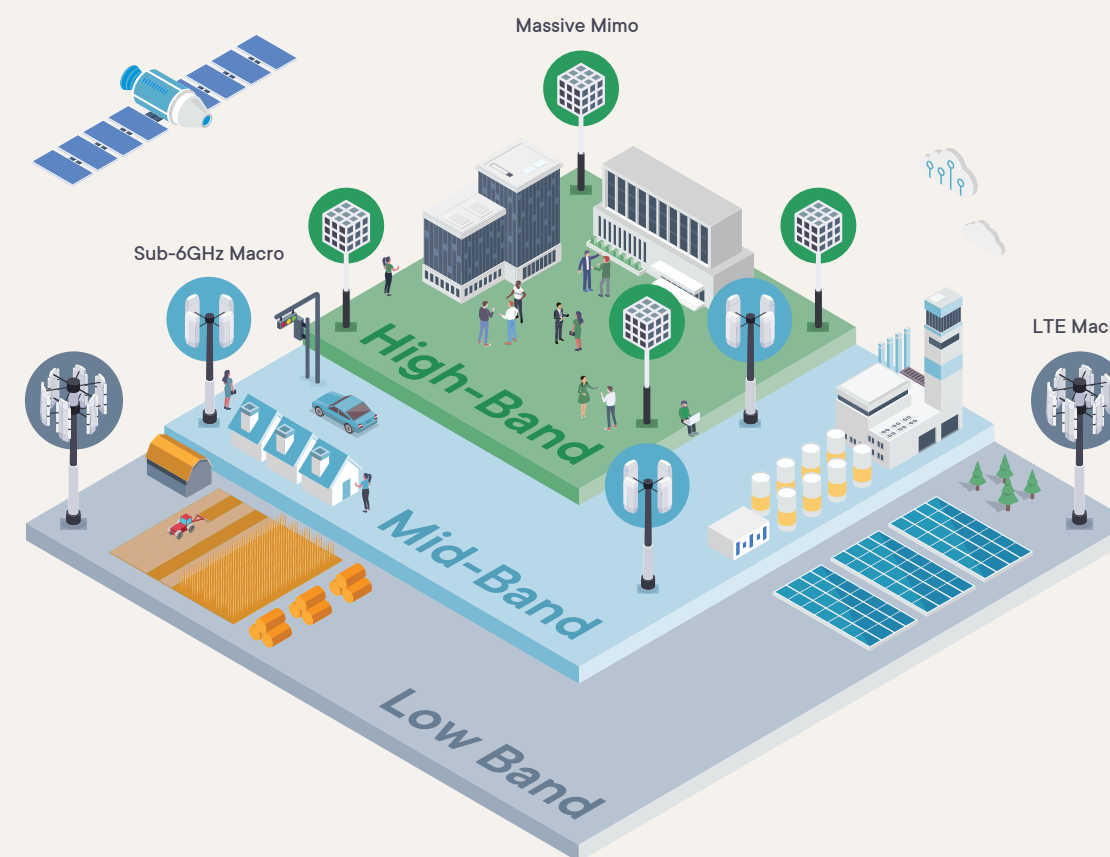


03. Power Amplifier Assembly

- In-house automated SMT line
- Faster and Robust PA Assembly
- Custom design capabilities



Wireless Infrastructure Ecosystem



Recommended Products



5G mid-band (Sub-6GHz)

SDM35005-30H	SDM39003-30H	ID36461D
SDM37003-30H	SDM39005-30H	ID38461DR
		ID41501D



4G Low-band · 3G

SDM18003-30H	ID18411D	ID22411D
SDM21003-30H	ID18461D	ID22441D
	ID19411D	ID26411D

GaN Transistors

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PACKAGE LINEUP



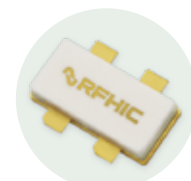
**RF12001DKR3
RF12002DKR3**
10.2 × 10.2 × 4.1



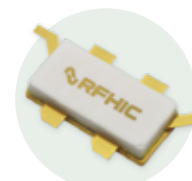
NS-AS01
10.2 × 10.2 × 4.1



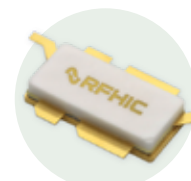
NS-CS01
5.1 × 4.1 × 4



RF24001DKR3
20.5 × 10 × 4



RF24008DKR3
20.5 × 14.4 × 4



RF24009DKR3
20.5 × 14.4 × 4

(mm)

Band	Part Number	Type	Status	Freq. [MHz]		Voltage	Peak Output Power	Avg. Output Power	Avg. Output Power	Gain	Eff Pavg	ACPR	Package	Frequency										
				Min	Max	[vds]	[W]	[dBm]	[W]	[dB]	[%]	[dBc]		Available	S Single Package	D Dual Package								
800	IE08165P	S	●	770	900	48	165	45.7	37	20.9	39.8	33.3	NS-AS01		770	900								
	IE08220P	S	●	758	858	48	220	47	50	22	38.9	29.4	NS-AS01		758	858								
	IE08330D	D	●	869	894	48	330	48	63	20.5	57.9	26.4	RF24001DKR3			869 894								
1500	IE15275D	D	●	1470	1500	48	275	47	50	17	58	26.5	RF24001DKR3					1470 1500						
1800	ID18411D	D	●	1800	1805	48	410	47.5	56.2	17.6	53.5	29.1	RF24008DKR3							1805	1880			
	ID18461D	D	Sample	1800	1805	48	460	47.5	56.2	17.4	60.4	22	RF24008DKR3							1805	1880			
	IE18085H	S	●	1805	1880	48	85	42.8	19	18.9	36.6	31.5	RF12002KR3							1805	1880			
	IE18110P	S	●	1805	1880	48	110	44	25	18.9	38.2	29.2	NS-AS01							1805	1880			
	IE18165P	S	●	1805	1880	48	165	45.7	37	18.3	39.2	31	NS-AS01							1805	1880			
	IE18220PG	S	●	1805	1880	48	220	47	50	18.1	40.9	30.3	NS-AS01							1805	1880			
	IE18250D	D	●	1805	1880	48	250	46.5	45	16.7	58.2	26.7	RF24001DKR3							1805	1880			
	IE18330D	D	●	1805	1880	48	330	48	63	15.5	57.7	25.2	RF24001DKR3							1805	1880			
	IE18330PG	S	●	1805	1880	48	330	48.7	74	15.8	40	31.9	NS-AS01							1805	1880			
IE18385D	D	●	1805	1880	48	385	48	63	15.1	56.2	25.8	RF24001DKR3							1805	1880				
1900	ID19411D	D	●	1995	2020	48	410	47.4	55	17.7	49.6	29.6	RF24008DKR3									1995 2020		
	ID19601D	D	Sample	1930	1995	48	600	49.1	81.3	16.2	48.2	34.4	RF24009DKR3								1930	1995		
														700	800	900	1000	1500	1600	1700	1800	1900	2000	[MHz]

GaN Transistors

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PACKAGE LINEUP



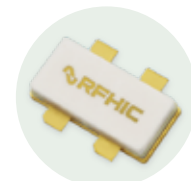
RF12001DKR3
RF12002DKR3
10.2 × 10.2 × 4.1



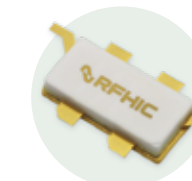
NS-AS01
10.2 × 10.2 × 4.1



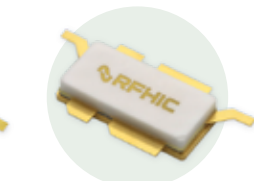
NS-CS01
5.1 × 4.1 × 4



RF24001DKR3
20.5 × 10 × 4



RF24008DKR3
20.5 × 14.4 × 4



RF24009DKR3
20.5 × 14.4 × 4

(mm)

Band	Part Number	Type	Status	Freq. [MHz]		Voltage	Peak Output Power	Avg. Output Power	Avg. Output Power	Gain	Eff Pavg	ACPR	Package	Frequency					
				Min	Max	[vds]	[W]	[dBm]	[W]	[dB]	[%]	[dBc]							
2100	IE21085P	S	●	2110	2170	48	85	42.8	19	20.7	43.1	26.6	NS-AS01		2110	2170			
	IE21110P	S	●	2110	2170	48	110	44	25	18.4	38.9	32.7	NS-AS01		2110	2170			
	IE21165PE	S	●	2110	2170	48	165	45.7	37	17.5	39.6	31.9	NS-AS01		2110	2170			
	IE21220P	S	●	2110	2170	48	220	47	50	17.4	40	30.8	NS-AS01		2110	2170			
	IE21250D	D	●	2110	2170	48	250	46.5	45	15.7	57.1	26.5	RF24001DKR3		2110	2170			
	IE21330D	D	●	2110	2170	48	330	48	63	14.8	55.7	29.4	RF24001DKR3		2110	2170			
	IE21330P	S	●	2110	2170	48	330	49	79	15.6	39.2	30.6	NS-AS01		2110	2170			
2200	IE21385D	D	●	2110	2170	48	385	48	63	14.6	55.7	25.5	RF24001DKR3		2110	2170			
	ID22411D	D	●	2110	2200	48	410	47.3	53.7	17.5	51.8	27.4	RF24008DKR3		2110	2200			
	ID22441D	D	●	2110	2170	48	440	47.3	53.7	17.4	58.9	20.3	RF24008DKR3		2110	2170			
	ID22461D	D	Devel- opment	2110	2170	48	460	47.5	56.2	16.5	56	21	RF24008DKR3		2110	2170			
2300	ID22601D	D	●	2110	2200	48	540	48.8	75.9	15.1	46.8	32	RF24009DKR3		2110	2200			
	IR23110P	S	●	2300	2400	48	110	44	25	18.2	41	30	NS-AS01				2300	2400	
2400	IR23220P	S	●	2300	2400	48	220	47	50	16.1	42.1	28.4	NS-AS01				2300	2400	
	ID24420D	D	●	2300	2400	48	385	48	63.1	14.8	53.2	25	RF24001DKR3				2300	2400	
														2000	2100	2200	2300	2400	2500 [MHz]

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				Min	Max	[vds]	[W]	[dBm]	[W]	[dB]	[%]	[dBc]	

														Frequency						● Available	S Single Package	D Dual Package
2600	ID26411D	D	●	2570	2620	48	410	47.7	58.9	15.2	51.1	28.1	RF24008DKR3	2570	2620							
	ID26461D	D	Devel-opment	2496	2690	48	460	47.5	56.2	16.5	56.0	26.0	RF24008DKR3	2496	2690							
	ID26601D	D	Sample	2620	2690	48	600	49.3	85.1	14.7	47.4	40.2	RF24009DKR3	2620	2690							
	IE26085P	S	●	2496	2690	48	85	42.8	19.0	20.2	42.0	26.2	NS-AS01	2496	2690							
	IE26110P	S	●	2500	2690	48	110	44.0	25.0	19.1	39.6	27.7	NS-AS01	2500	2690							
	IR26220P	S	●	2496	2690	48	220	47.0	50.0	16.2	36.0	33.3	NS-AS01	2496	2690							
2700	IE27165PE	S	●	2620	2690	48	165	46.0	40.0	16.9	43.1	28.9	NS-AS01	2620	2690							
	IE27220PE	S	●	2620	2690	48	220	47.0	50.0	17.0	41.5	27.0	NS-AS01	2620	2690							
	IE27275D	D	●	2575	2635	48	275	47.0	50.0	14.1	59.4	21.5	RF24001DKR3	2575	2635							
	IE27330D	D	●	2620	2690	48	330	48.0	63.0	14.2	54.1	22.5	RF24001DKR3	2620	2690							
	IE27330P	S	●	2620	2690	48	330	49.0	79.0	15.4	39.1	29.2	NS-AS01	2620	2690							
	IE27385D	D	●	2620	2690	48	385	48.4	69.0	13.8	53.6	23.7	RF24001DKR3	2620	2690							
3600	ID36170W	S	●	3500	3600	48	160	45.5	35.0	16.3	34.1	28.5	RF12002KR3					3500	3600			
	ID36340W	D	●	3500	3600	48	340	47.5	56.2	16.2	32.3	31.9	RF24001KR3					3500	3600			
	ID36410DR	D	●	3500	3600	48	410	47.5	56.2	13.4	45.3	25.2	RF24001DKR3					3500	3600			
	ID36411D	D	●	3500	3600	48	410	47.2	52.5	14.7	47.5	24.5	RF24008DKR3					3500	3600			
	IE36085W	S	●	3400	3600	48	85	42.8	19.0	17.3	35.4	30.2	RF12002KR3			3400	3600					
3700	ID37411D	D	●	3600	3800	48	410	47.5	56.2	14.4	47.2	25.9	RF24008DKR3					3600	3800			
														2500	2600	2700	3300	3400	3500	3600	3700	3800 [MHz]



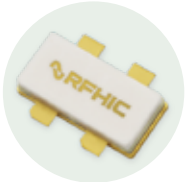
RF12001DKR3
RF12002DKR3
10.2 × 10.2 × 4.1



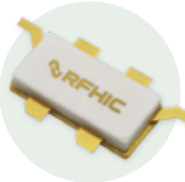
NS-AS01
10.2 × 10.2 × 4.1



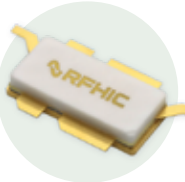
NS-CS01
5.1 × 4.1 × 4



RF24001DKR3
20.5 × 10 × 4



RF24008DKR3
20.5 × 14.4 × 4



RF24009DKR3
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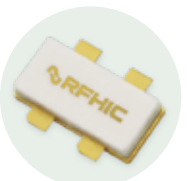
**RF12001DKR3
RF12002DKR3**
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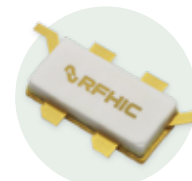
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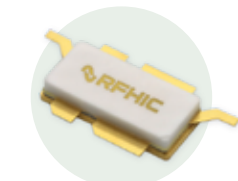
NS-CS01
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RF24008DKR3
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RF24009DKR3
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(mm)

Band	Part Number	Type	Status	Freq. [MHz]		Voltage	Peak Output Power	Avg. Output Power	Avg. Output Power	Gain	Eff Pavg	ACPR	Package	Frequency									
				Min	Max	[vds]	[W]	[dBm]	[W]	[dB]	[%]	[dBc]											
3800	ID38410DR	D	●	3600	3800	48	410	47.5	56.2	14.2	44.6	25.1	RF24001DKR3		3600	3800							
	ID38411DR	D	●	3700	4000	48	410	47.5	56.2	14.4	46.1	27.7	RF24008DKR3			3700	4000						
	ID38461DR	D	●	3700	3980	48	460	47.5	56.2	14.6	44.2	26	RF24008DKR3			3700	3980						
4100	ID41411DR	D	●	3700	4100	48	410	47.5	56.2	14.2	46.1	26.1	RF24008DKR3			3700	4100						
4600	ID46531D	D	●	4500	4600	48	530	48.5	70.8	13.1	41.8	31.7	RF24009DKR3					4500	4600				
4900	ID49531D	D	Sample	4800	5000	48	500	47.5	56.2	13.3	42.7	31	RF24009DKR3							4800	5000		
3300 ~ 3800	ID36461D	D	●	3400	3600	48	460	47.5	56.2	14.4	46.9	28.3	RF24008DKR3	3400	3600								
3300 ~ 4200	ID39084W	S	●	3700	4100	48	84	34.7	3	17.5	14.3	38.3	RF12002KR3			3700	4100						
														3400	3600	3800	4000	4200	4400	4600	4800	5000	[MHz]

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RF12002DKR3
10.2 × 10.2 × 4.1



NS-AS01
10.2 × 10.2 × 4.1



NS-CS01
5.1 × 4.1 × 4



RF24001DKR3
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(mm)

Band	Part Number	Type	Status	Freq. [MHz]		Voltage	Peak Output Power	Avg. Output Power	Avg. Output Power	Gain	Eff Pavg	ACPR	Package	Frequency									
				Min	Max	[vds]	[W]	[dBm]	[W]	[dB]	[%]	[dBc]											
Driver 0~4000	HT12028PB	S	●	2496	2690	48	28	33	2	19	21.5	25	NS-CS01				2496	2690					
Driver 0~5000	AT12035P	S	●	2000	2015	48	35.5	39	7.9	18.8	36.1	36	NS-CS01	2000 2015									
	AT12065P	S	●	2496	2690	48	65	41	12.6	18.8	36.6	37	NS-CS01				2496	2690					
Driver 0~6000	DT12030P	S	●	2496	2690	50	30	38.5	7.1	18.7	39.7	30.4	NS-CS01				2496	2690					
	DT12060P	S	●	2496	2690	50	60	41.5	14.1	17	37.5	31.7	NS-CS01				2496	2690					
	ET12028PA	S	●	3400	3800	48	28	38	6.3	16.4	35.3	31.9	NS-CS01							3400	3800		
	RT12014P	S	●	2496	2690	48	14	35	3.2	17.5	35.2	37.3	NS-CS01				2496	2690					
	RT12028P	S	●	2496	2690	48	28	38	6.3	17.6	29.7	37.1	NS-CS01				2496	2690					
	RT12055P	S	●	2496	2690	48	55	41	12.6	15.7	34.1	36.5	NS-CS01				2496	2690					
														2000	2200	2400	2600	2800	3000	3500	4000	[MHz]	

Faster, Compact & Energy Efficient

Data is being transmitted at faster speeds than ever before. With the massive increase in throughput and back-haul reliable and efficient devices are required. Discover how RFHIC's gallium-nitride (GaN) solutions meet the energy demands of today's demanding network.

GaN Hybrid PAM

Discover RFHIC’s broad range of hybrid power amplifiers designed precisely for sub-6GHz small-cell applications. RFHIC’s transformative technology enables higher output power, efficiency, and size.

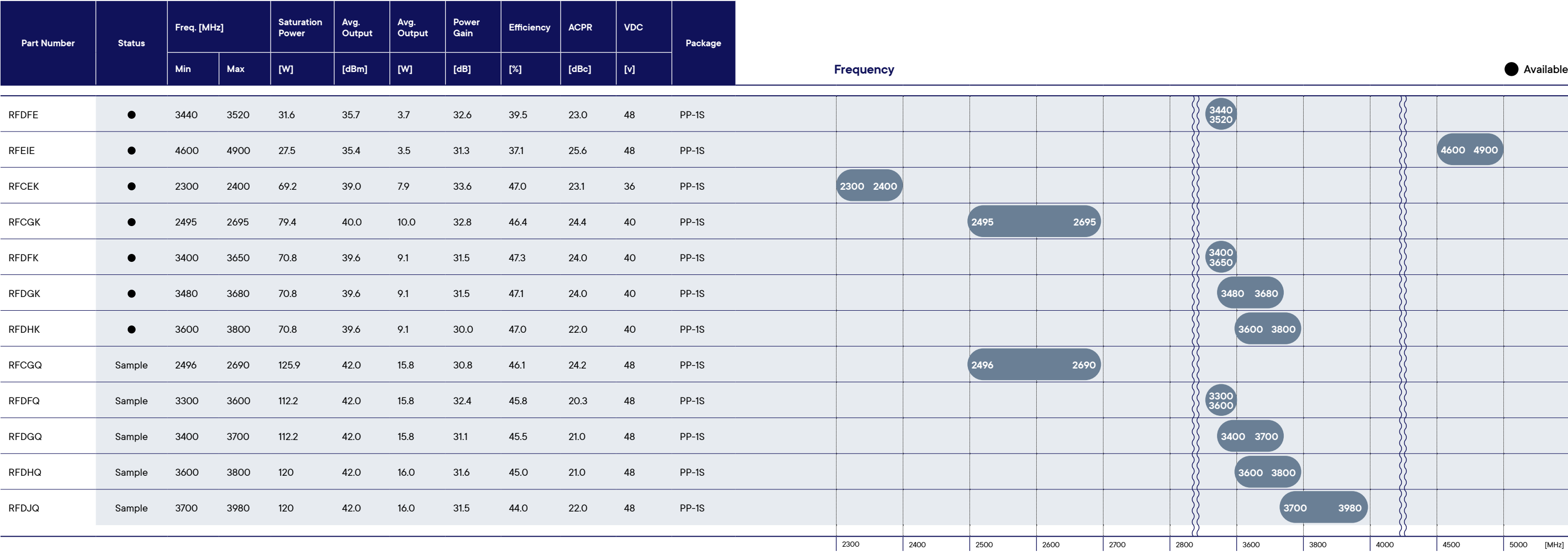
PACKAGE LINEUP



PP-1S
17 × 13 × 2.6



PP-3G
14 × 8 × 2.85



GaN Hybrid PAM

Discover RFHIC’s broad range of hybrid power amplifiers designed precisely for sub-6GHz small-cell applications. RFHIC’s transformative technology enables higher output power, efficiency, and size.

PACKAGE LINEUP



PP-1S
17 × 13 × 2.6



PP-3G
14 × 8 × 2.85

Part Number	Status	Freq. [MHz]		P3dB Power	Avg. Output	Avg. Output	Power Gain	Efficiency	ACPR	VDC	Package
		Min	Max	[W]	[dBm]	[W]	[dB]	[%]	[dBc]	[v]	

SRFCGK	●	2496	2690	63.1	38.7	7.4	32.0	45.0	24.0	36	PP-3G					2496	2690						
SRFDGK	●	3400	3800	70.8	38.8	7.6	32.0	42.0	23.0	44	PP-3G								3400	3800			
SRFDIK	●	3550	3980	81.3	39.5	8.9	31.0	42.0	21.0	48	PP-3G									3550	3980		
SRFDJK	●	3700	3980	80	39.1	8.1	31.0	45.0	23.0	44	PP-3G										3700	3980	
SRFCGF	Development	2496	2690	50.1	37.4	5.5	33.0	43.6	26.0	36	PP-3G					2496	2690						

Part Number	Status	Freq. [MHz]		Saturation Power	Avg. Output	Avg. Output	Power Gain	Efficiency	ACPR	VDC	Package
		Min	Max	[W]	[dBm]	[W]	[dB]	[%]	[dBc]	[v]	

SDM18003-30H	●	1805	1880	39.8	30.5	1.1	44.0	12.5	42.0	48	PP-3G	1805	1880										
SDM21003-30H	●	2110	2170	39.8	30.3	1.1	44.0	12.6	44.0	48	PP-3G		2110	2170									
SDM37003-30H	●	3400	3800	39.8	34.0	2.5	32.0	17.4	40.0	48	PP-3G								3400	3800			
SDM39003-30H	●	3700	3980	39.8	34.0	2.5	31.0	17.0	38.0	48	PP-3G									3700	3980		
SDM26005-30H	Development	2496	2690	70.8	35.0	3.2	38.0	13.9	38.0	48	PP-3G					2496	2690						
SDM35005-30H	●	3300	3700	70.8	35.0	3.2	35.0	14.5	41.0	48	PP-3G								3300	3700			
SDM39005-30H	●	3700	3980	63.1	35.0	3.2	34.0	16.0	40.0	48	PP-3G										3700	3980	

180020002200240026002800300032003400360038004000 [MHz]

● Available