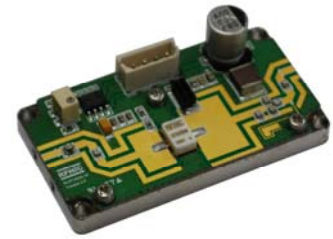


### Product Features

- Solid-state linear amplifier design
- GaN on SiC HEMT
- Small and light weight
- Wide Band Operation 500~2500MHz
- 50 Ohm Input/Output impedance matched
- Highly reliable and rugged design
- Harsh environmental condition
- High efficiency
- 20W typical Psat

### Application

- Broadband communication
- Broadcasting
- General purpose RF amplifier
- Linear applications in the L/S Frequency Bands



### Description

The RUP15020-10 is designed for RF system application frequencies from 500MHz to 2.5GHz.

This Pallet Amplifier uses GaN on SiC HEMT technology which performs high breakdown voltage, high linearity, wide bandwidth and high efficiency.

### Electrical Specifications @ VDD=+28VDC, T=25°C, 50Ω System

PARAMETER	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	500		2500	MHz
Output Power CW	Psat		20		Watt
Output Power @ P3dB G.C.P	P <sub>3dB</sub>		10		Watt
Small Signal Gain	SSG		12		dB
Small Signal Gain Flatness	ΔG		± 1.5	± 2.0	dB
Input VSWR	S11			8.5 : 1	-
Harmonics @ P1dB G.C.P	H			-10	dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	VDC	27	28	30	Volt
Supply Current @ Psat	IDD		2	3	Amp
Supply Current @ P3	IDD		1	2	Amp

\* Please DO NOT ENTER RF INPUT POWER OVER +39dBm. (to prevent the main from damaging)

### Environmental Characteristics

PARAMETER	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T <sub>c</sub>	0		+70	°C
Storage Temperature	T <sub>s</sub>	-40		+85	°C

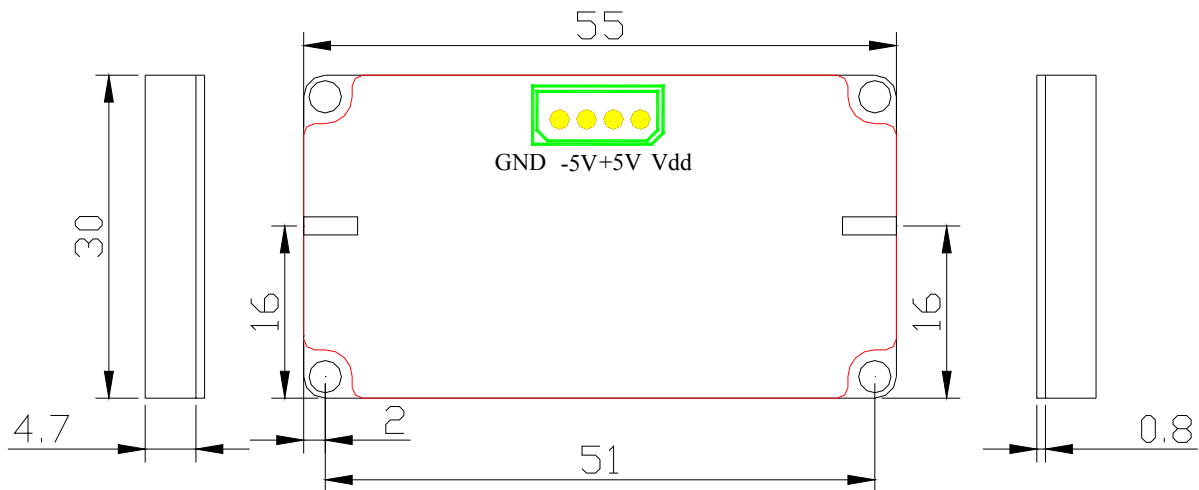
### Mechanical Specifications

PARAMETER	Value	Units	Limits
Dimensions ( L x W x H )	55.0 x 30.0 x 16.0	mm	Max
RF Connectors In/Out	SMA Female		
Cooling	External Heat sink + airflow		

**Interface Connectors**

Pin #	Description	Specifications
1	<b>Vdd.</b>	+28 Drain Voltage
2	<b>Ref.</b>	+5V Op-Amp Operate Voltage
3	<b>Vgs.</b>	-5V Gate Voltage
4	<b>GND.</b>	Ground

**Outline Drawing**



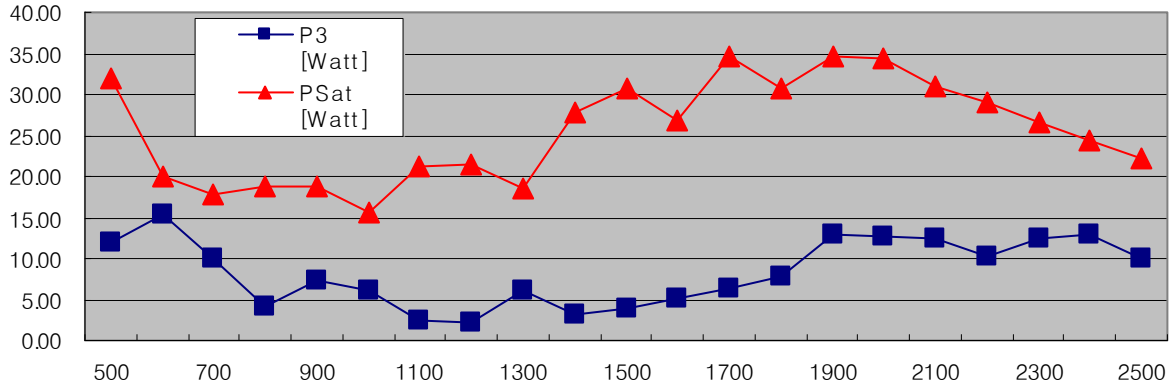
Typical Performance Chart @ 25°C

RFHIC RUP15020-10 Test Result								
Freq. [MHz]	P3 Output Power, Current, Efficiency				P <sub>sat</sub> Output Power, Current, Efficiency			
	Output [dBm]	Output [Watt]	Current [A]	Efficiency [%]	Output [dBm]	Output [Watt]	Current [A]	Efficiency [%]
500	40.76	11.91	0.95	40.80	45.06	32.06	1.68	51.58
600	41.84	15.28	0.86	60.54	43.01	20.00	0.99	51.62
700	40.00	10.00	0.69	49.21	42.49	17.74	0.95	51.38
800	36.18	4.15	0.56	22.98	42.71	18.66	1.47	26.40
900	38.65	7.33	0.79	30.50	42.75	18.84	1.25	31.54
1000	37.93	6.21	0.86	23.10	41.90	15.49	1.49	14.70
1100	34.01	2.52	0.63	12.91	43.27	21.23	2.45	16.27
1200	33.63	2.31	0.54	12.95	43.32	21.48	1.64	25.49
1300	37.91	6.18	1.10	19.21	42.70	18.62	1.47	24.75
1400	34.92	3.10	0.76	13.06	44.46	27.93	2.47	27.96
1500	35.99	3.97	0.81	15.42	44.89	30.83	2.15	34.83
1600	37.06	5.08	0.94	17.92	44.30	26.92	2.25	21.94
1700	37.95	6.24	0.93	21.75	45.41	34.75	2.23	36.23
1800	38.86	7.69	0.97	25.66	44.86	30.62	2.00	35.85
1900	41.12	12.94	1.20	35.92	45.38	34.51	1.95	43.50
2000	41.07	12.79	1.17	35.37	45.35	34.28	1.92	48.04
	40.98	12.53	1.19	33.48	44.90	30.90	1.86	44.12
2200	40.07	10.16	1.14	26.02	44.63	29.04	1.91	38.46
2300	40.95	12.45	1.37	26.58	44.23	26.49	2.00	30.24
2400	41.11	12.91	1.60	24.61	43.88	24.43	2.21	23.44
2500	40.05	10.12	1.54	17.71	43.48	22.28	2.33	19.98

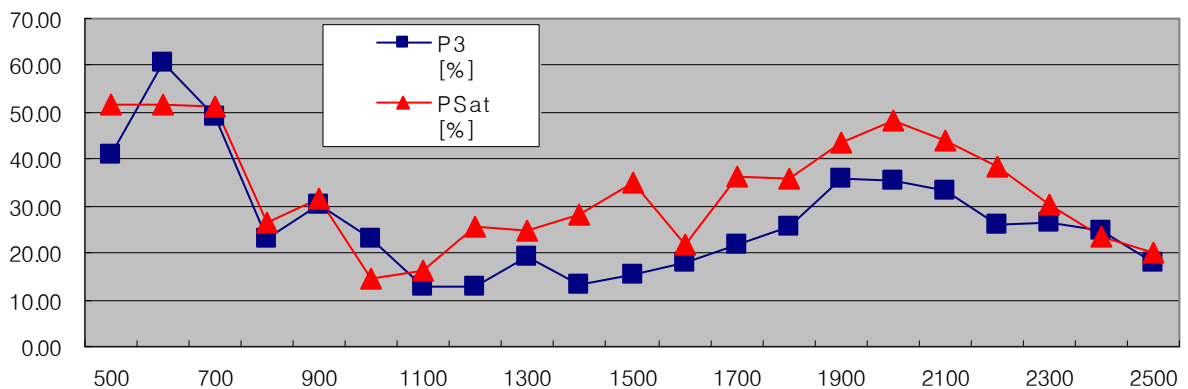
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**Typical Performance Chart @ 25°C**

P3 & Psat Power [W]



P3 & Psat Efficiency [%]



P3 & Psat Current [A]

