

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
- 25W typical Psat
- Built-in sequence bias included

Applications

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

**Description**

RUP15020-11 has been designed for RF system application frequencies from 500 ~ 2500MHz.

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

Electrical Specifications @ VDD=30VDC, T=25°C, 50Ω System

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	500	-	2500	f_O
Operating Bandwidth	MHz	-	2000	-	BW
Output Power CW	W	10	25	-	P_{SAT}
Output Power @ P _{3dB} G.C.P	W	5	15	-	P_{3dB}
Small Signal Gain	dB	45	50	-	G_S
Small Signal Gain Flatness	dB	-	± 1.5	± 2.0	ΔG_S
Input VSWR	-	-	2.0:1	2.5 : 1	S_{11}
Harmonics @ P _{1dB} G.C.P	dBc	10	-	-	H_{P1dB}
Spurious Signals	dBc	60	70	-	Spur
Operating Voltage	V	28	30	32	V
Supply Current @ P _{3dB}	A	-	2.5	-	I_{DD}
Supply Current @ P _{sat}	A	-	3.5	-	I_{DD}

* Please DO NOT ENTER RF INPUT POWER OVER +5dBm. (to prevent the main transistor from damaging)

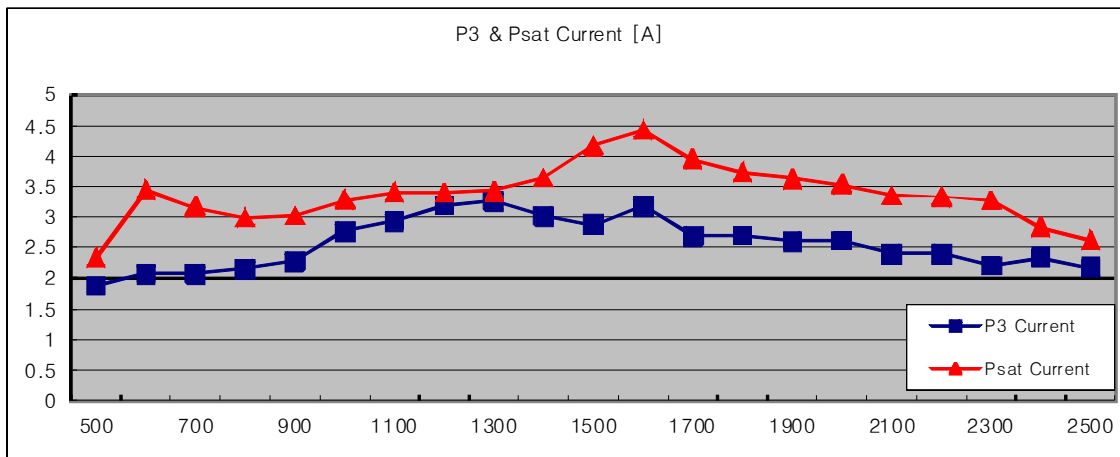
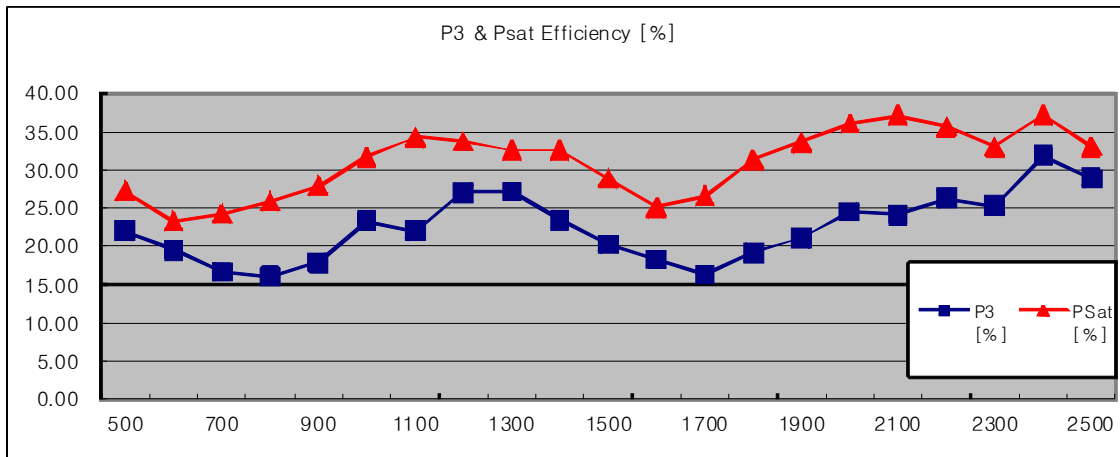
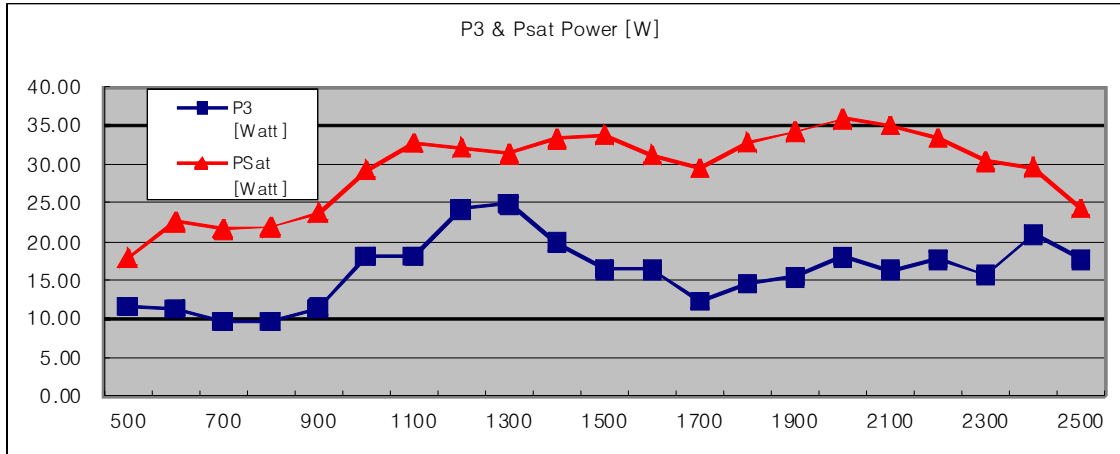
Environmental Characteristics

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Case Temperature	°C	0	-	70	T_C
Storage Temperature	°C	-40	-	85	T_S

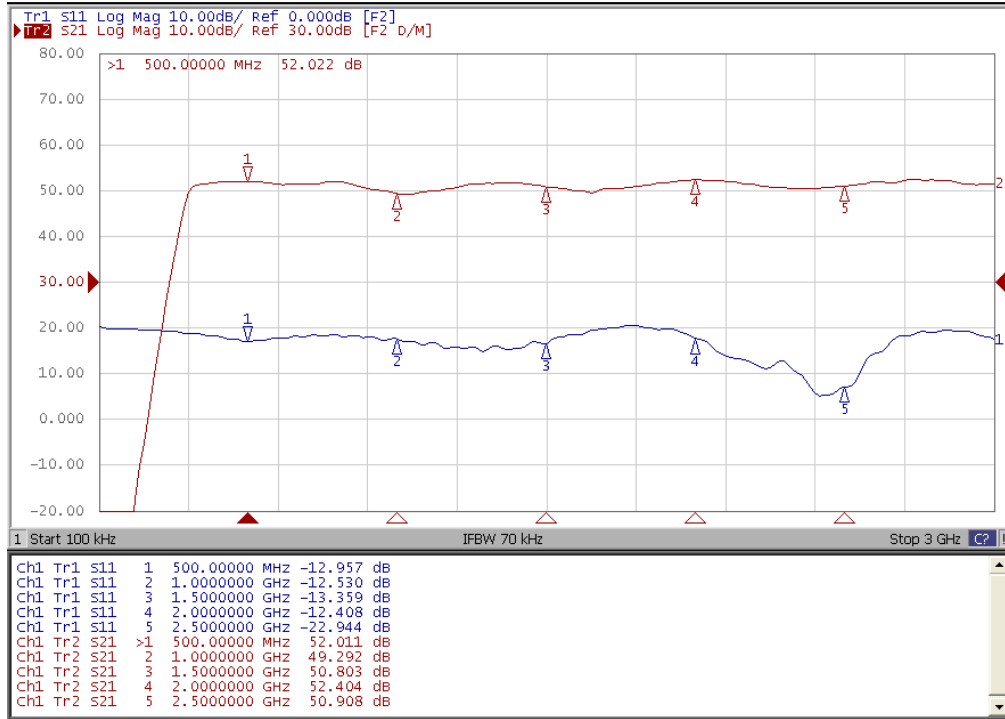
Typical Performance @ 25°C

Freq.	P3 Output Power, Current, Efficiency				Psat Output Power, Current, Efficiency			
	Output	Output	Current	Efficiency	Output	Output	Current	Efficiency
MHz	dBm	W	A	%	dBm	W	A	%
500	40.65	11.61	1.88	22.06	42.52	17.86	2.34	27.27
600	40.54	11.32	2.07	19.54	43.53	22.54	3.45	23.34
700	39.86	9.68	2.07	16.71	43.34	21.58	3.17	24.31
800	39.86	9.68	2.15	16.08	43.39	21.83	3.00	25.98
900	40.58	11.43	2.28	17.90	43.75	23.71	3.03	27.95
1000	42.58	18.11	2.77	23.35	44.66	29.24	3.29	31.74
1100	42.57	18.07	2.93	22.03	45.15	32.73	3.41	34.28
1200	43.84	24.21	3.19	27.10	45.07	32.14	3.40	33.76
1300	43.95	24.83	3.26	27.20	44.96	31.33	3.43	32.62
1400	42.98	19.86	3.02	23.49	45.22	33.27	3.64	32.64
1500	42.15	16.41	2.88	20.34	45.29	33.81	4.17	28.95
1600	42.13	16.33	3.18	18.34	44.94	31.19	4.44	25.08
1700	40.9	12.30	2.69	16.33	44.69	29.44	3.95	26.62
1800	41.62	14.52	2.70	19.21	45.16	32.81	3.74	31.33
1900	41.88	15.42	2.61	21.10	45.34	34.20	3.63	33.64
2000	42.55	17.99	2.62	24.52	45.54	35.81	3.54	36.13
2100	42.1	16.22	2.40	24.13	45.44	34.99	3.36	37.19
2200	42.48	17.70	2.40	26.34	45.23	33.34	3.34	35.65
2300	41.95	15.67	2.21	25.32	44.82	30.34	3.28	33.03
2400	43.2	20.89	2.34	31.89	44.71	29.58	2.84	37.19
2500	42.47	17.66	2.18	28.93	43.86	24.32	2.63	33.03

Typical Performance @ 25°C



Small Signal Gain @ Input Power : -10dBm, 25°C

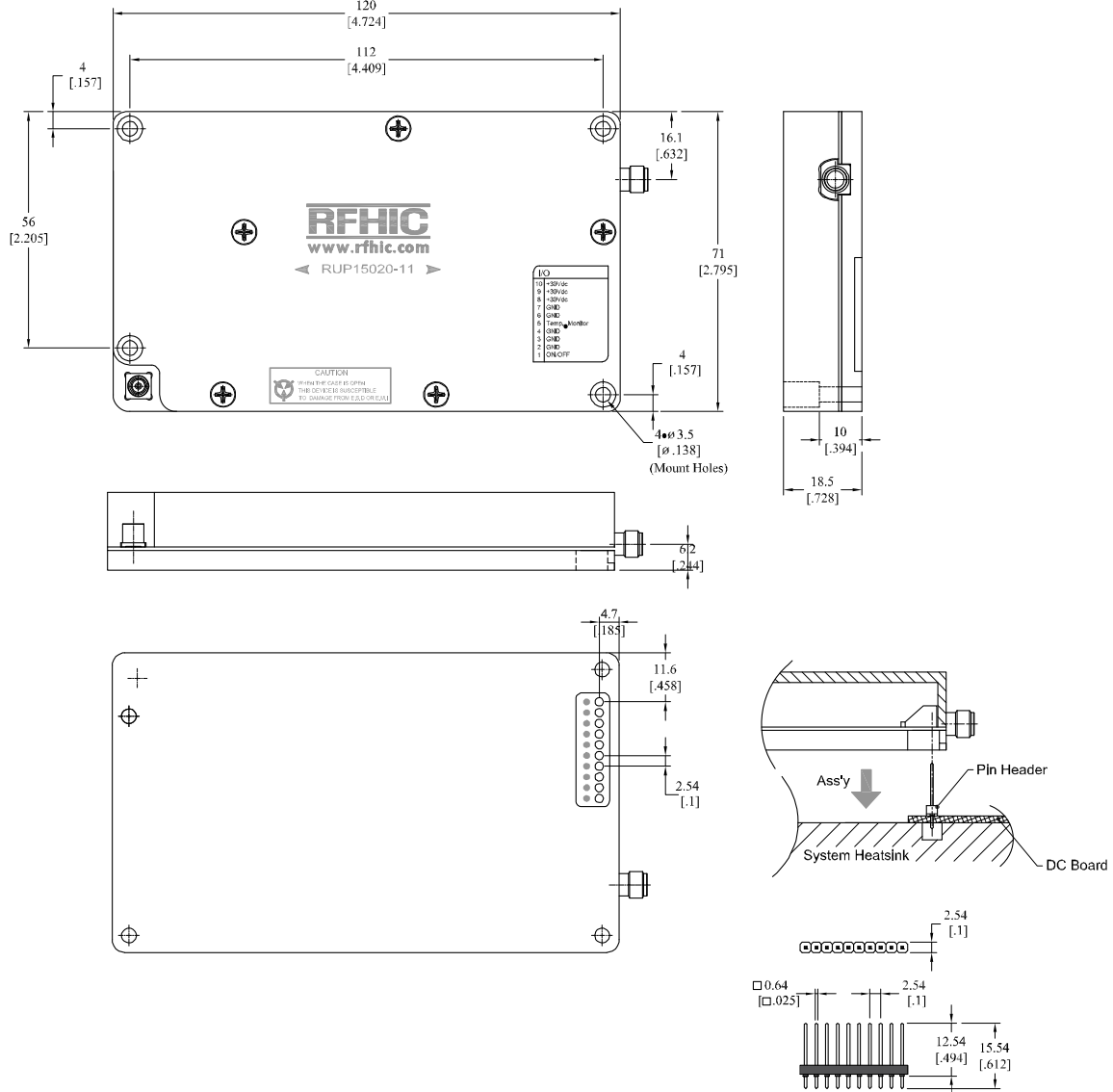


Mechanical Specifications

PARAMETER	UNIT	VALUE	LIMIT
Dimensions (L x W x H)	mm	120.0 x 71 x 18.5	Max
RF Connectors In/Out	-	MCX / SMA Female	-
Cooling	-	External Heat sink + airflow	-

Outline Drawing

* Unit: mm[inch] | Tolerance ±0.2[.008]



Pin Description

Pin No	Description	Specifications	Pin No	Description	Specifications
1	On/Off	Enable / Disable	6	GND	Ground
2	GND	Ground	7	GND	Ground
3	GND	Ground	8	V _{DD}	+30 Drain Voltage
4	GND	Ground	9	V _{DD}	+30 Drain Voltage
5	Temp	Reporting Temperature data [0.75V/25°C]	10	V _{DD}	+30 Drain Voltage

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RUP15020-11	2012.02.04	3.0	TR Package Change	-
RUP15020-11	2010.06.28	2.0	Internal DC Part Change	-
RUP15020-11	2009.08.27	1.0	-	-

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