

Product Features

- GaN on SiC Broadband High Power Amplifier
- 700 ~ 2700MHz Operation Bandwidth
- Power Gain 53dB @ Pin -3dBm
- 100W Typical @ Pin -3dBm

Applications

- General Purpose

**Description**

The power amplifier module is designed for Broadcasting, Telecommunication, Medical and Other markets.

Operating frequency range is from 700 ~ 2700MHz.

Gallium Nitride on SiC technology is used and attached on an aluminum sub carrier. Full in/out matching for broadband performance is already applied.

Improved thermal handling by patented technology.

Electrical Specifications @ $V_{CC} = 32V$; $T_c = 45^\circ C$; $Z_s = Z_L = 50\Omega$

PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Operating Frequency	MHz	700	-	2700	-
Power Gain @ Pin -3dBm	dB	50	53	-	700 ~ 2700MHz
Power Gain Flatness @ Pin -3dBm	dBpp	-	± 1.0	± 2.0	700 ~ 2700MHz
Output Power @ Pin -3dBm	dBm	48	50	-	700 ~ 2700MHz
Input Return Loss	dB	-	-9	-5	-
Supply Voltage	V	31.5	32	-	$V_{CC}(=V_{ds})$
Quiescent Current consumption	A	-	2.5	2.7	-
Current Consumption @ Pin -3dBm	A	-	10	12	CW 1-tone

Absolute Maximum Ratings

PARAMETER	UNIT	RATING
Input RF Power	dBm	0
Supply Voltage	V	35
Load Mismatch Value	-	3 : 1 @all load phase

* Input Signal Condition : CW 1-Tone

Environmental Characteristics

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Flange Temperature	°C	-10	-	70	Tc
Storage Temperature	°C	-40	-	105	Tstg
Vibration	MIL-STD-810G Method 514.6 ANNEX C				VI

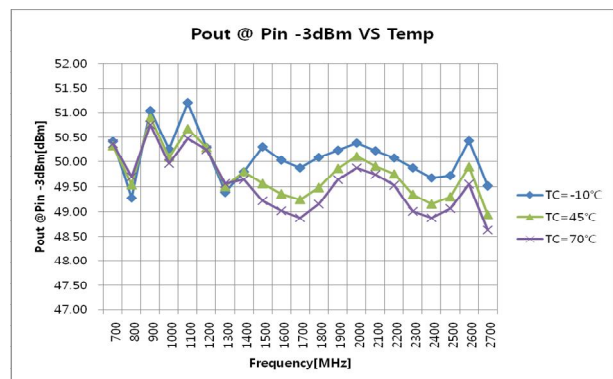
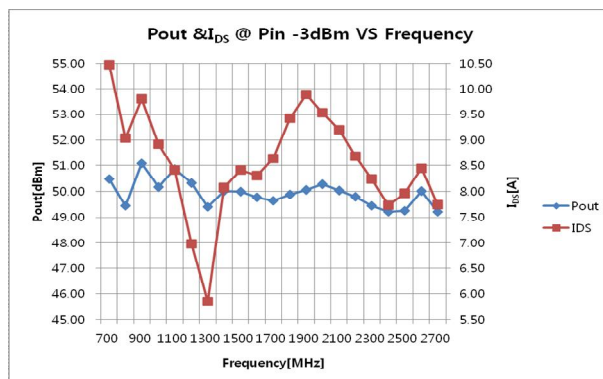
Mechanical Specifications

PARAMETER	UNIT	TYP
Dimension	mm	134(L) x 105(W) x 30(H)
Weight	g	635
RF Connector	-	RF Input : SMA Female
		RF Output : N-Type Female
DC Connector	-	C7W2 / D-SUB / Male type
Cooling	-	External Heat-sink

*Dimension and weight may change without notice.

Typical Performance @ 25°C

Frequency (MHz)	Pout @Pin -3dBm (dBm)	Gp @Pin -3dBm (dB)	Current @Pin -3dBm (A)	PAE @ Pin -3dBm (%)	Harmonic	
					2 nd Harm (dBc)	3 rd Harm (dBm)
700	50.47	53.47	10.47	33.26	-12.26	-31.88
800	49.45	52.45	9.04	30.46	-15.66	-24.97
900	51.07	54.07	9.80	40.80	-22.20	-24.46
1000	50.18	53.18	8.92	36.52	-16.51	-40.08
1100	50.87	53.87	8.41	45.40	-21.79	-38.36
1200	50.33	53.33	6.98	48.31	-19.76	-33.86
1300	49.42	52.42	5.85	46.74	-18.99	-18.83
1400	50.01	53.01	8.07	38.81	-28.13	-30.48
1500	50.00	53.00	8.41	37.16	-34.43	-40.04
1600	49.78	52.78	8.30	35.79	-34.02	-54.08
1700	49.66	52.66	8.64	33.45	-43.59	-56.70
1800	49.88	52.88	9.43	32.24	-35.86	-64.36
1900	50.07	53.07	9.89	32.11	-21.00	-58.44
2000	50.29	53.29	9.53	35.06	-21.04	-45.14
2100	50.04	53.04	9.20	34.28	-41.85	-49.81
2200	49.81	52.81	8.68	34.46	-47.34	-61.68
2300	49.45	52.45	8.24	33.41	-42.68	-59.77
2400	49.21	52.21	7.74	33.66	-62.21	-63.68
2500	49.26	52.26	7.97	33.07	-51.35	-69.88
2600	50.03	53.03	8.44	37.28	-57.91	-46.57
2700	49.22	52.22	7.75	33.69	-61.61	-55.20

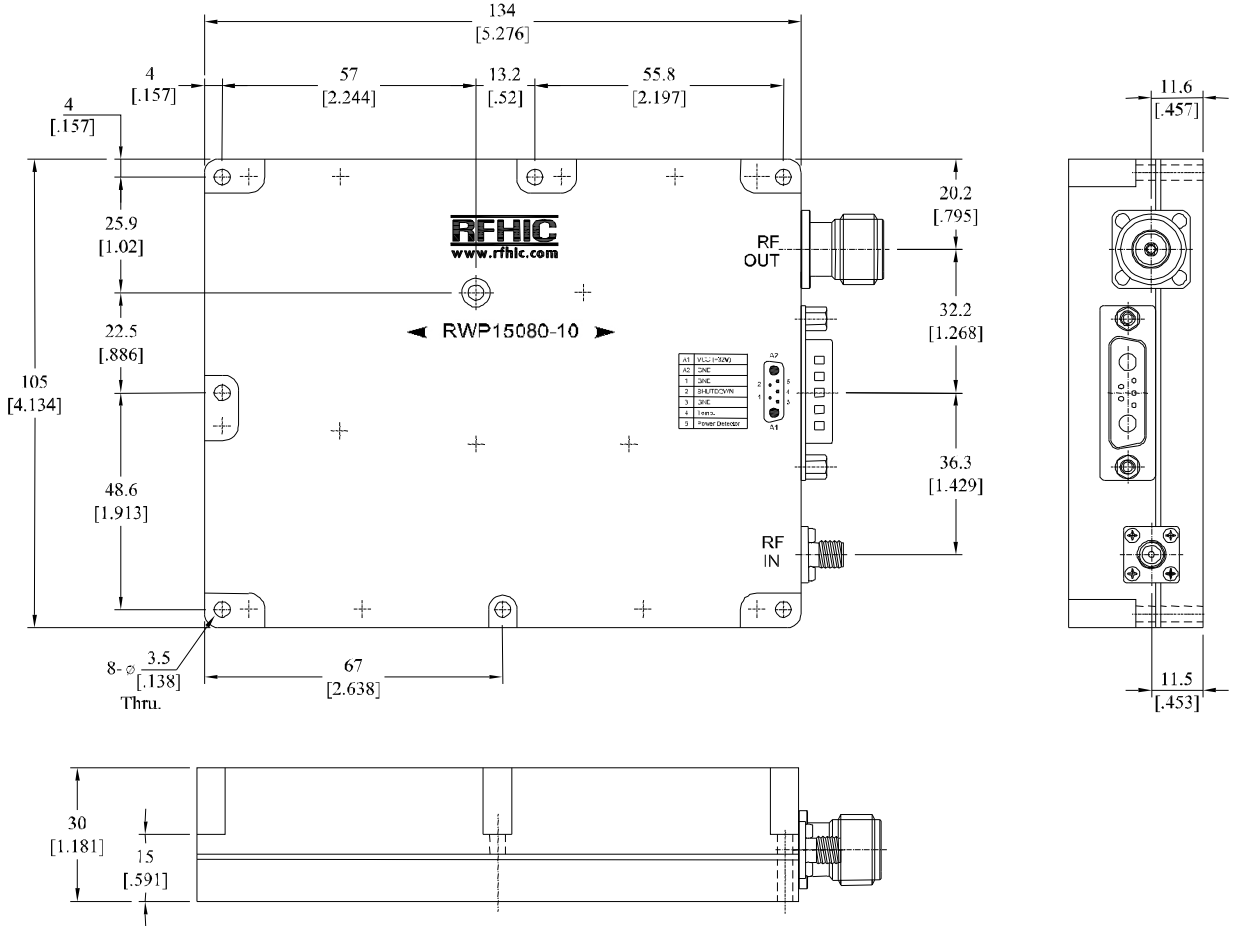


Precautions

1. This product is designed to be used for broadband amplification. Heat generation is higher when there is RF signal in the device. Therefore, the worst case scenario is when there is RF signal. The temperature must be calculated properly. Case temperature must maintain below 70°C.
2. Thermal Grease or Metal Thermal Interface Materials are recommended for heat dissipation. An example would be spreading thermal grease on the bottom of the device.

Package Dimensions

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



Pin Description (C7W2 / D-SUB / Male type)			
Pin No	Description	I/O	Specifications
A1	Vcc	I	+32VDC
A2	GND	I	Ground
1	GND	I	Ground
2	Shout Down	I	Enable : TTL "Low", Disable : TTL "High" (Low : 0 ~ 0.5V, High : 2.5 ~ 5V) Disable Status : 150mA Current consumption
3	GND	I	Ground
4	Temperature Monitor	O	Reference voltage : 750mV @ 25°C, Scale : 10mV/°C
5	Power Monitor	O	Pout 48dBm Voltage : 700 ~ 1000mV, Scale : 25mV/dB

* Recommended Screw Torque : 8.0kgf.cm±1 using SEMS M3 19mm Bolt

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RWP15080-10	2014.5.23	1.2	Mechanical Specifications addition.	-
RWP15080-10	2014.4.2	1.1	Mechanical Specifications.	-
RWP15080-10	2014.3.14	1.0	-	

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