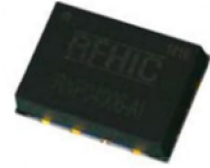


**Product Features**

- Surface Mount Hybrid Type
- No matching circuit needed
- High Efficiency
- High Linearity
- Psat 4W Power
- Alumina Substrate
- GaN on SiC Chip on board

**Applications**

- RF Sub-Systems
- Base Station



Package Type : HY-6

**Description**

GaN on SiC is used and attached on a board. It is connected by using bias and in/out matching circuit method with gold wire bonding.

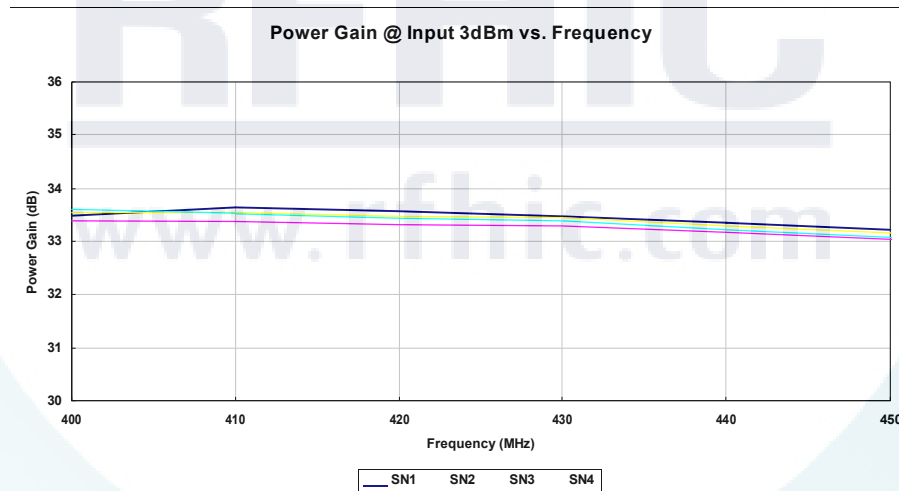
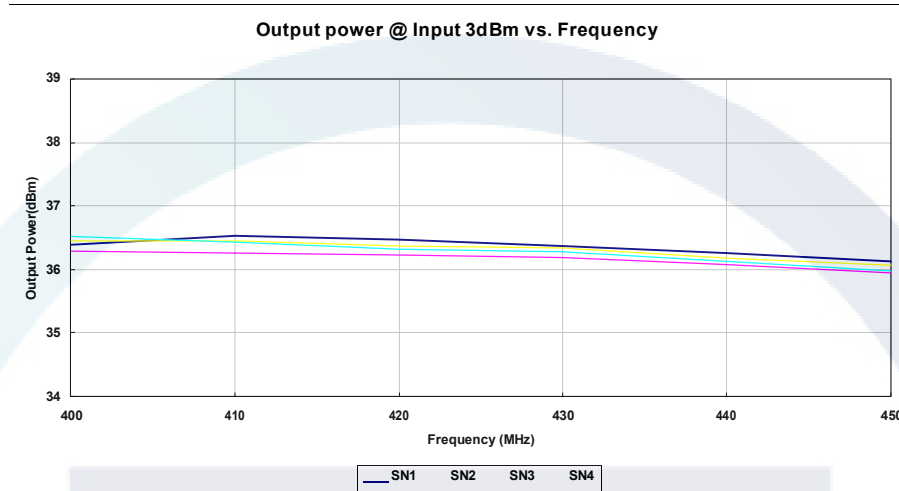
**Electrical Specifications @ Ta=25°C**

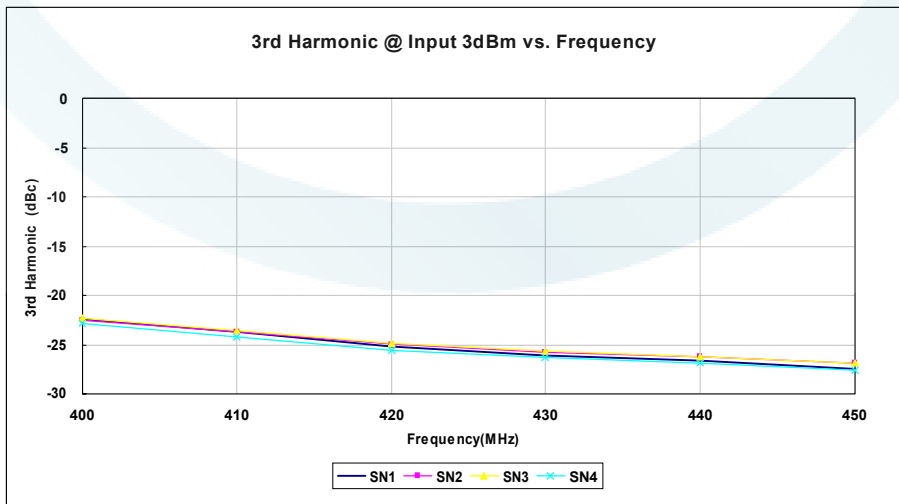
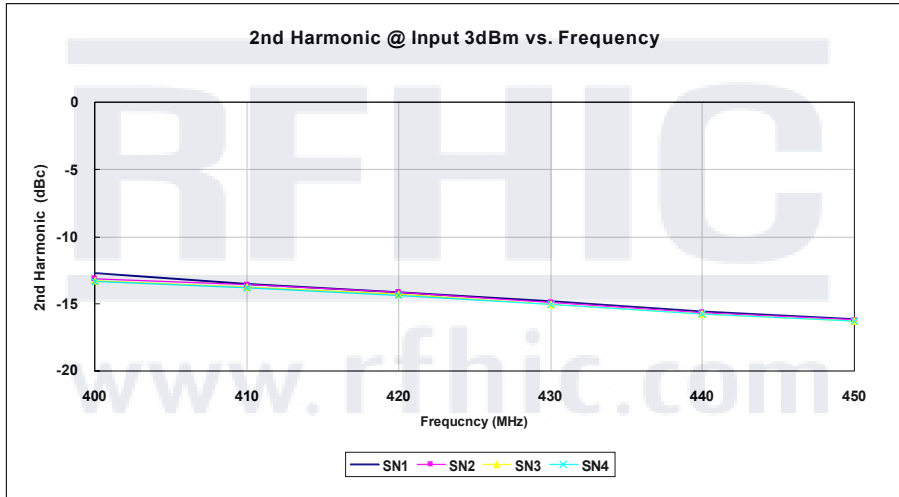
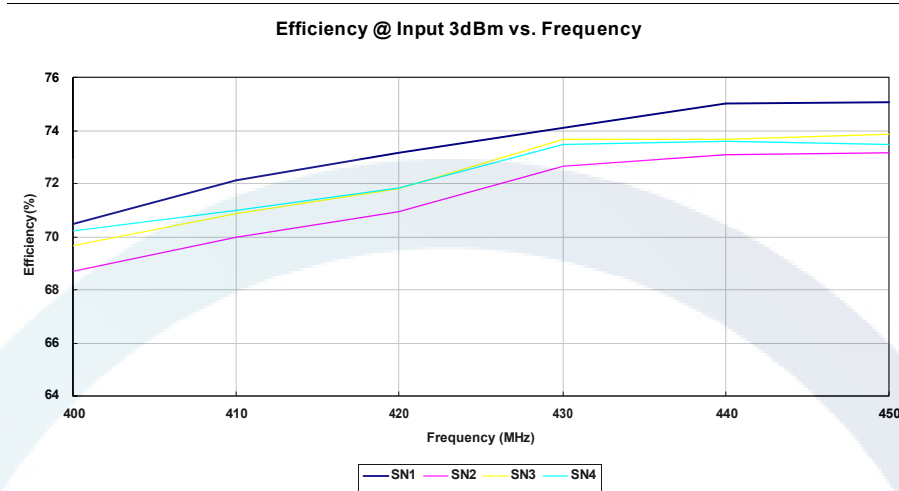
PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Frequency Range	MHz	400	-	450	Z <sub>S</sub> = Z <sub>L</sub> = 50 ohm
Power Gain	dB	32	33	-	@ Input 3 dBm
Input Return Loss	dB	-	-10	-6	-
Output Power	dBm	35.5	36	-	@ Input 3 dBm
Efficiency	%	65	70	-	
N <sup>TH</sup> Harmonic suppression	dBc	10	15	-	
Total Current consumption	Drive	mA	90	-	-
	Main		230	-	
Weight	g	-	-	2	-
Supply Voltage	V	-	4	-	Drive Amp
		-	-3.2	-	Gate Bias
		-	24	-	Main Bias
Dimensions (W×L×H)	mm	20 × 14.5 × 4.8			

\* **Caution** : The drain voltage must be supplied to the device after the gate voltage is supplied.

**Performance Charts**

\* Bias Voltage Condition : Pin4. Drive Amp(+4V) , Pin5. Gate Bias(-3.2V), Pin7.Main Bias(24V), Ta=25 °C





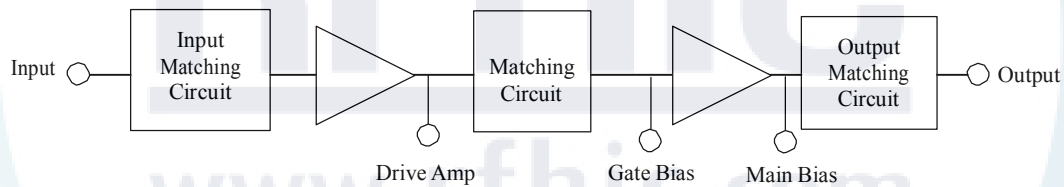
**Absolute Maximum Ratings**

PARAMETER	UNIT	RATING
Operating Case Temperature	°C	80
Input RF Power	dBm	5
Supply Voltage ( Main Bias )	V	24.5
Load Mismatch Value	-	3 : 1 @ all load phase

**Environmental Characteristics**

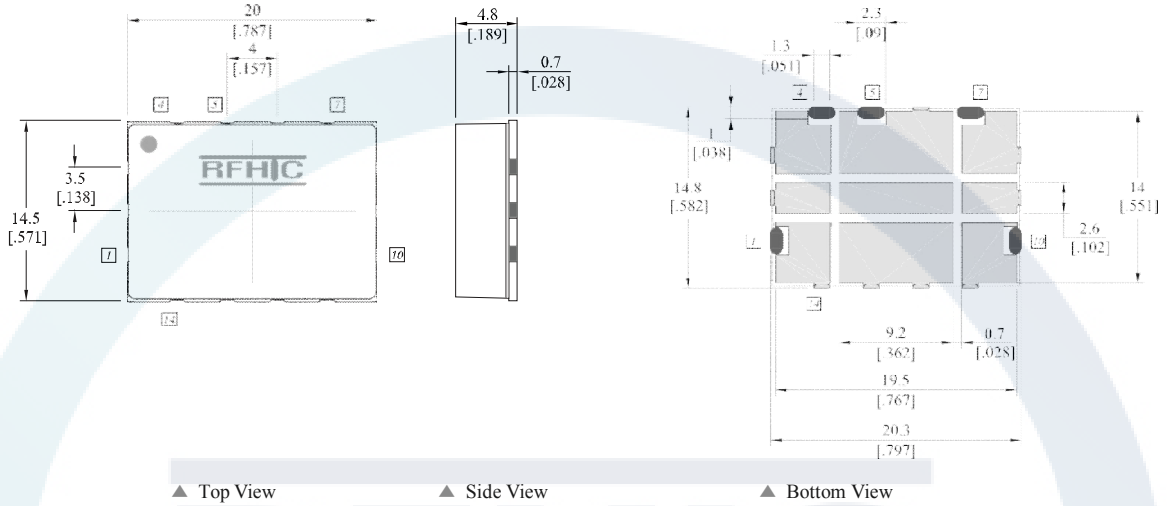
PARAMETER	UNIT	MIN	TYP	MAX
Operating Temperature	°C	-40	-	80
Storage Temperature	°C	-40	-	105
Vibration	MIL-STD-810G Method 514.6 ANNEX C			

**Block Diagram**



Package Dimensions (Type: HY-6)

\* Unit: mm[inch] | Tolerance  $\pm 0.15[.006]$



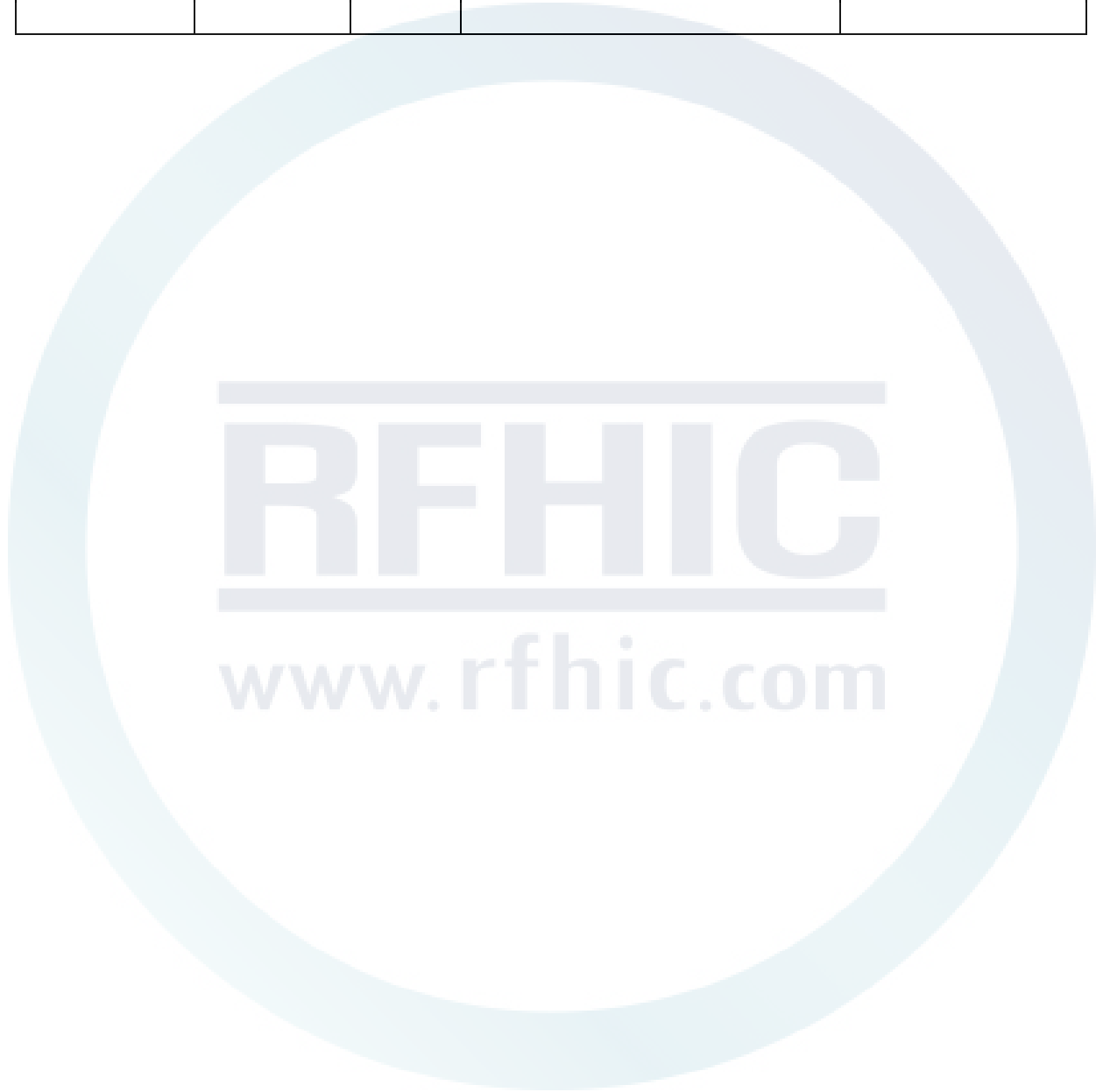
Pin Description							
Pin No	Function	Pin No	Function	Pin No	Function	Pin No	Function
1	RF Input	4	Drive AMP(+4V)	8	GND	11	GND
2	GND	5	Gate Bias(-3.2V)	9	GND	12	GND
3	GND	6	GND	10	RF Output	13	GND
-	-	7	Drain Bias(+24V)	-	-	14	GND

\* Mounting Configuration Notes

1. Ground / thermal via holes are critical for the proper performance of this device.
2. Add as much copper as possible to inner and outer layers near the part to ensure optimal thermal performance.
3. Mounting screws can be added near the part to fasten the board to a heatsink. Ensure that the ground / thermal via hole region contacts the heatsink.
4. Do not put solder mask on the backside of the PCB in the region where the board contacts the heatsink.
5. RF trace width depends upon the PCB material and construction.
6. Use 1 oz. Copper minimum.

**Revision History**

Part Number	Release Date	Version	Modification	Data Sheet Status
RNP04006-A1	2012.9.28	1.0	-	-



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