

# Preliminary

## Wideband Power Amplifier

### RWP17050-10



#### Product Features

- GaN on SiC Broadband High Power Amplifier
- 700 ~ 2700MHz Operation Bandwidth
- Power Gain 37dB @ Pin 10dBm
- 50W Typical @ Pin 10dBm

#### 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 10dBm	dB	35	37	-	700 ~ 2700MHz
Power Gain Flatness @ Pin 10dBm	dBpp	-	$\pm 1.0$	$\pm 2.0$	700 ~ 2700MHz
Output Power @ Pin 10dBm	dBm	45	47	-	700 ~ 2700MHz
Input Return Loss	dB	-	-10	-5	-
Supply Voltage	V	31.5	32	-	$V_{CC} (=V_{ds})$
Quiescent Current consumption	A	-	1.2	1.7	-
Current Consumption @ Pin 10dBm	A	-	4.5	6.0	CW 1-tone
On/Off Switching Time*	uS	-	2	5	On : TTL "Low"
					Off : TTL "High"(30mA@Disable)
Shut Down or Switch On/Off TTL Voltage**	V	0	-	0.5	On : TTL "Low"(Enable)
		2.5	5	5.5	Off : TTL "High"

#### Note.

\*. Gate On/Off : High speed switching

\*\* . Drain On/Off : 500ms delay

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**Absolute Maximum Ratings**

PARAMETER	UNIT	RATING
Input RF Power	dBm	13
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	-	80	Tc
Storage Temperature	°C	-40	-	105	Tstg
Vibration	MIL-STD-810G Method 514.6 ANNEX C				VI

**Ordering Information**

Part Number	Package
RWP17050-10	Pallet
RWP17050-1H	Module assembled with RWP17050-10

\* RWP17050-1H is a SMA connectorized housing version of RWP17050-10. Electrical parameters are all same as RWP17050-10.  
 For more information, please contact RFHIC

**Mechanical Specifications**

PARAMETER		UNIT	TYP
Dimension	Package	mm	72(L) x 50.8(W) x 16.8(H)
	Housing		98.8(L) x 75(W) x 25(H)
Weight	Package	g	105
	Housing		355
Housing RF IN/OUT Connector		-	SMA Female
Cooling		-	External Heat-sink

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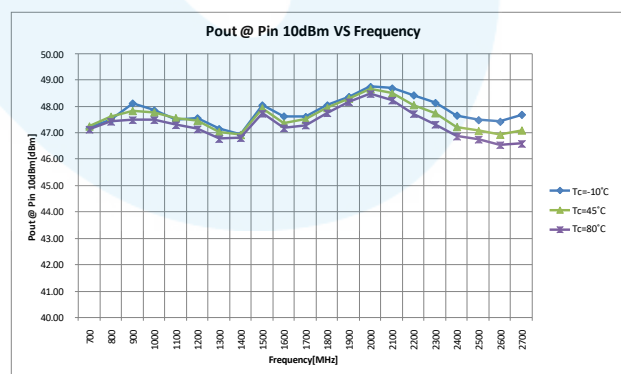
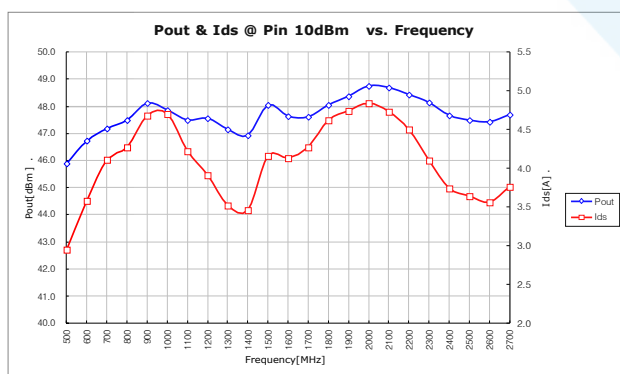
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#### Typical Performance @ 25°C

Frequency (MHz)	Pout @ Pin 10dBm (dBm)	Gp @ Pin 10dBm (dB)	Current @ Pin 10dBm (A)	PAE @ Pin 10dBm (%)	Harmonic @ Pin 10dBm	
					2 <sup>nd</sup> Harm (dBc)	3 <sup>rd</sup> Harm (dBm)
700	47.24	37.24	4.11	40.27	-20.77	-12.88
800	47.63	37.63	4.39	41.25	-25.39	-10.98
900	47.97	37.97	4.71	41.57	-14.77	-10.28
1000	47.36	37.36	4.36	39.03	-19.21	-17.77
1100	47.24	37.24	4.10	40.37	-19.15	-28.71
1200	47.01	37.01	3.80	41.31	-21.16	-34.45
1300	46.90	36.90	3.82	40.07	-15.00	-36.21
1400	47.02	37.02	3.61	43.59	-19.73	-38.16
1500	47.93	37.93	3.99	48.63	-18.48	-48.21
1600	47.32	37.32	4.08	41.32	-29.56	-27.38
1700	47.48	37.48	4.36	40.12	-38.14	-48.92
1800	47.77	37.77	4.59	40.74	-56.83	-38.97
1900	48.06	38.06	4.85	41.22	-39.62	-33.89
2000	47.86	37.86	4.82	39.61	-46.35	-31.15
2100	47.69	37.69	4.72	38.90	-47.57	-30.93
2200	47.40	37.40	4.64	37.01	-61.24	-53.48
2300	47.59	37.59	4.39	40.87	-48.43	-60.15
2400	47.04	37.04	4.18	37.82	-32.63	-33.22
2500	47.00	37.00	4.13	37.92	-52.99	-37.25
2600	46.94	36.94	4.18	36.96	-56.67	-46.96
2700	47.37	37.37	4.37	39.03	-46.87	-35.53



#### 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 80°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

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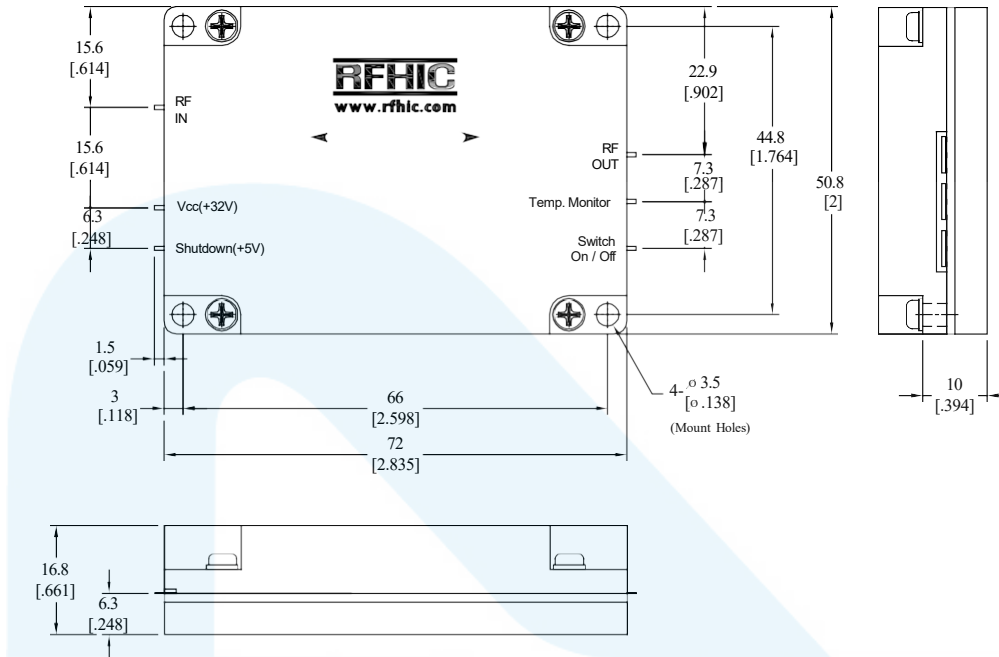
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#### Package Dimensions

\* Unit: mm[inch] | Tolerance: ±0.3[.012]

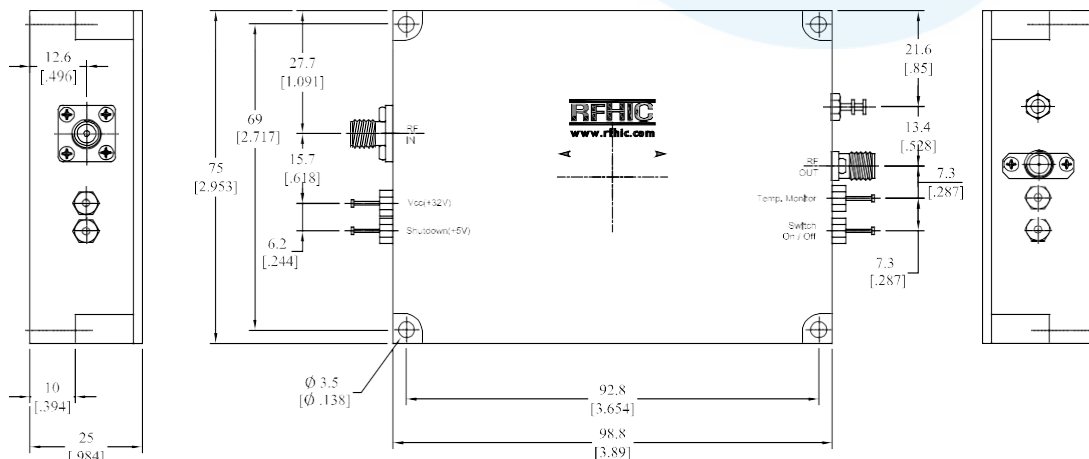


Pin Description			
Pin No	Function	Pin No	Function
1	RF IN	4	Switch ON/OFF
2	Vcc(+32V)	5	Temp Monitor
3	Shut Down(+5V)	6	RF OUT

\* Recommended Screw Torque : 8.0kgf.cm±1 using SEMS M3 14mm Bolt

#### SMA Connectorized Housing Dimension

\* Unit: mm[inch] | Tolerance: ±0.3[.012]



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**Revision History**

Part Number	Release Date	Version	Modification	Data Sheet Status
RWP17050-10	2023.04.13	1.7	Image Change	-
RWP17050-10	2019.07.18	1.6	Package Dimensions	-
RWP17050-10	2015.11.10	1.5	Package Dimensions & Graph	-
RWP17050-10	2015.01.15	1.4	Notice Change	-



**Certification**

This product is manufactured by a company that is certified for the AS9100D quality management system.

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