Wideband Power Amplifier RWP03060-10

Product Features

- GaN on SiC Broadband High Power Amplifier
- 20 ~ 512MHz Operation Bandwidth
- Power Gain 38dB @ Pin 11dBm
- 80W Typical @ Pin 11dBm

Applications

- General Purpose

Description

The power amplifier module is designed for Broadcasting, Telecommunication, Medical and Other markets.
Operating frequency range is from 20 ~ 512MHz.
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; Tc = 45°C; Z_S = Z_L = 50Ω

PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Operating Frequency	MHz	20	-	512	-
Power Gain @ Pin 11dBm	dB	35	36	-	20 ~ 50MHz
		37	38	-	50 ~ 512MHz
Power Gain Flatness @ Pin 11dBm	dBpp	-	±1.0	±2.0	20 ~ 512MHz
Output Power @ Pin 11dBm	dBm	46	47	-	20 ~ 50MHz
		48	49	-	50 ~ 512MHz
Input Return Loss	dB	-	-10	-7	-
Supply Voltage	V	31.5	32	-	Vcc(=Vds)
Quiescent Current Consumption	A	-	1.5	2.0	-
Current Consumption @ Pin 11dBm	A	-	6.0	8.0	CW 1-tone
On/Off Switching Time*	uS	-	5	10	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

Absolute Maximum Ratings

PARAMETER	UNIT	RATING
Input RF Power	dBm	15
Supply Voltage	V	35
Load Mismatch Value	-	3 : 1 @all load phase

* Input Signal Condition : CW 1-Tone

Environmental Characteristics

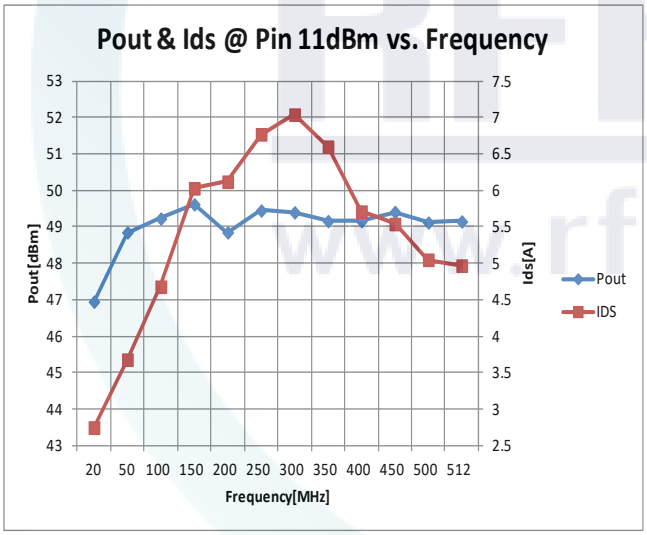
PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Flange Temperature	°C	-10	-	80	Tc
Storage Temperature	°C	-40	-	105	Tstg
Vibration	MIL-STD-810G Method 514.6 ANNEX C				VI

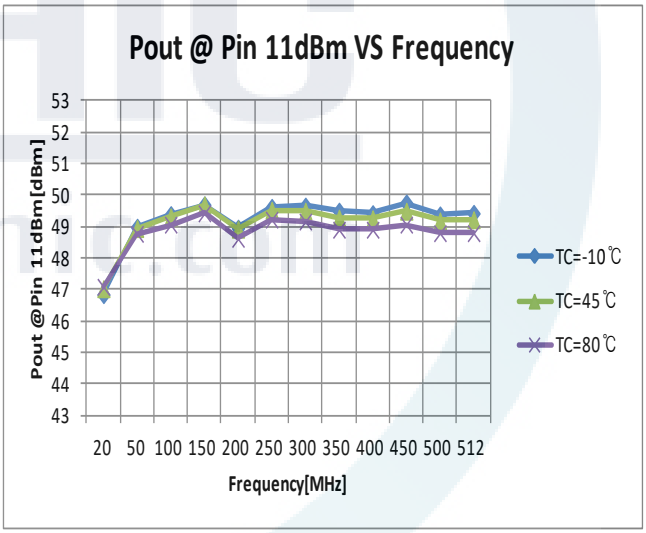
Mechanical Specifications

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

Typical Performance @ 25°C

Frequency	Pout @Pin 11dBm	Gp @Pin 11dBm	Current @Pin 11dBm	PAE @ Pin 11dBm	Harmonic @ Pin 11dBm	
					2nd Harm	3rd Harm
(MHz)	(dBm)	(dB)	(A)	(%)	(dBc)	(dBm)
20	46.9	35.94	2.75	56.17	-28.3	-11.25
50	48.87	37.87	3.69	65.29	-41.44	-13.98
100	49.28	38.28	4.69	56.45	-28.43	-14.01
150	49.61	38.61	5.97	47.85	-21.73	-10.62
200	48.87	37.87	6.10	39.49	-17.62	-10.82
250	49.52	38.52	6.73	41.58	-15.80	-11.07
300	49.37	38.37	6.93	39.00	-18.20	-12.12
350	49.18	38.18	6.46	40.05	-25.21	-15.02
400	49.24	38.24	5.82	45.07	-36.40	-19.24
450	49.43	38.43	5.62	48.77	-36.18	-21.63
500	49.25	38.25	5.18	50.76	-26.51	-30.14
512	49.33	38.33	5.08	52.72	-25.29	-32.32



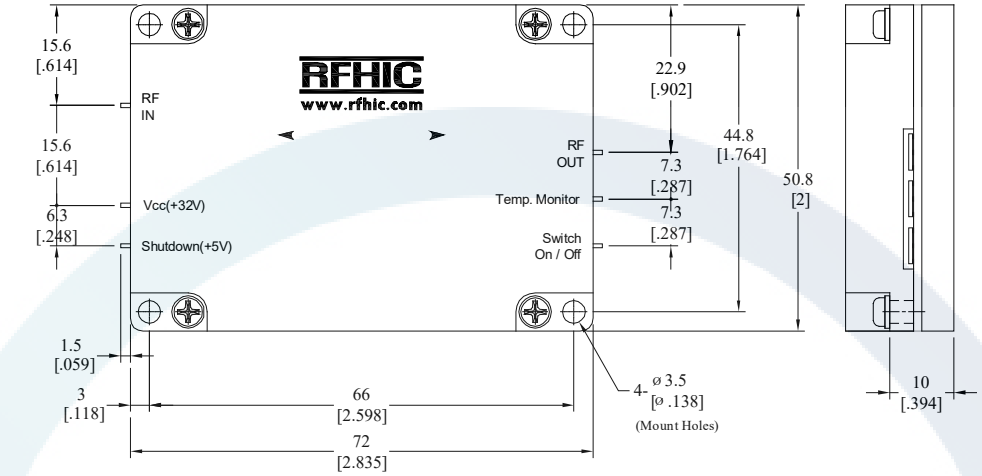


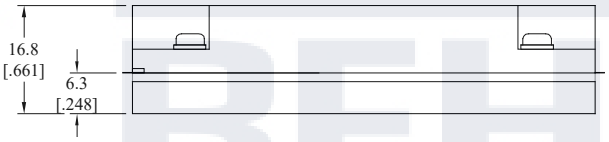
Precautions

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.

Package Dimensions

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



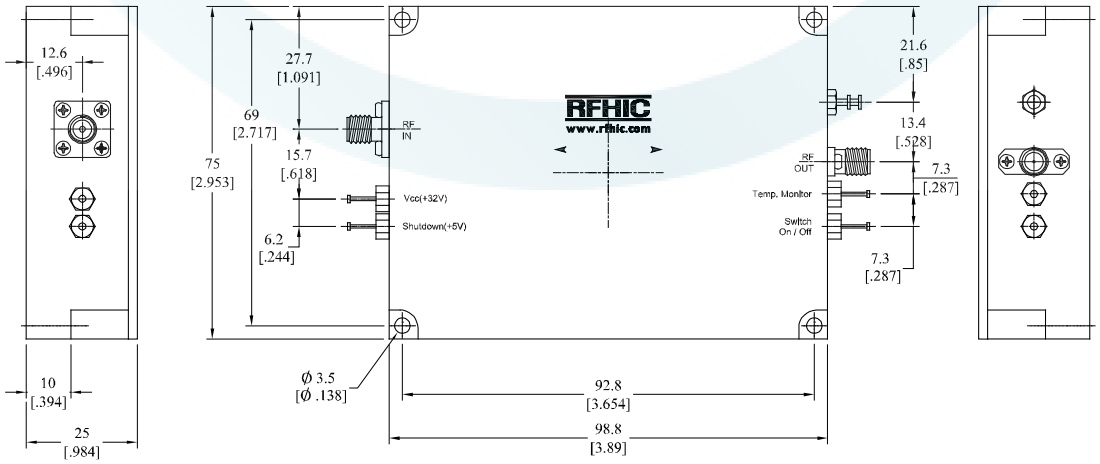


Pin Description			
Pin No	**Function**	**Pin No**	**Function**
1	RF IN	4	Switch ON/OFF
2	Vcc(+32V)	5	Temp Monitor
3	Shut Down(+5V)	6	RF OUT

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

SMA Connectorized Housing Dimension

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



Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RWP03060-10	2019.07.18	1.5	Package Dimensions	-
RWP03060-10	2015.11.10	1.4	Package Dimensions & Note	-
RWP03060-10	2015.01.15	1.3	Notice Change	-