

Product Features

- GaN on SiC Broadband High Power Amplifier
- 2000 ~ 3000MHz Operation Bandwidth
- Small Signal Gain 22dB min.
- 20W Minimum, P3dB

Applications

- General Purpose
- Telecommunication



Package Type : DP-75

Description

The power amplifier module is designed for General Purpose.

Operating frequency range is from 2000 ~ 3000MHz

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 @ $V_{CC} = 28V$; $T = 25^{\circ}C$; $Z_S = Z_L = 50\Omega$

PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Bandwidth	MHz	2000	-	3000	-
Power Gain	dB	21	22	-	@Pin 21dBm
Gain Flatness	dBp-p	-	± 1	± 2	@Pin 21dBm
Gain Variation vs Temperature	dB	-2.0	-	+2.0	-20 ~ 60°C
Output power	dBm	42	43	-	@Pin 21dBm
Input VSWR	dB	-	-6	-	-
Output VSWR	dB	-	-6	-	-
Supply Voltage	V	27.5	28	28.5	$V_{CC}(=V_{DS})$
Quiescent Current Consumption	A	-	2.5	-	-
Supply Current (IDD)	A	-	2.8	3.5	@Pin 21dBm
On/Off Switch Time	uS	-	2	5.0	On: TTL "Low" Off: TTL "High"(0.2A@Disable)
Shut Down, Switch On/Off	V	0 2.5	-	0.5 5.5	On: TTL "Low" Off: TTL "High"

Absolute Maximum Ratings

PARAMETER	UNIT	RATING	SYMBOL
Drain Voltage	V	30	VDS
Operating Flange Temperature	°C	-20 ~ 85	Tc
Storage Temperature	°C	-30 ~ 90	Tstg

Typical Performance**S/N : RWPM309090001**

	Temp : 25℃				Temp : 25℃		Temp : 65℃		Temp : -20℃	
Freq	I/L	O/L	Pin	Gp	Pout	Ids	Pout	Ids	Pout	Id
(GHz)	(dB)	(dB)	(dBm)	(dB)	(dBm)	(A)	(dBm)	(A)	(dBm)	s(A)
2.0	-6.5	-12	21	22.3	43.3	3.04	42.8	2.87	44.1	3.16
2.1	-6.4	-13	21	23.4	43.4	2.89	42.8	2.86	44.2	3.09
2.2	-6.5	-15.5	21	23.9	43.9	2.89	43.5	2.96	44.7	3.26
2.3	-6.8	-19.2	21	24.5	44.5	2.87	43.7	2.97	45.2	3.31
2.4	-7.4	-23	21	24.6	44.6	2.67	43.8	2.67	45	2.96
2.5	-8.5	-23	21	24.9	44.9	2.56	44.3	2.52	45.3	2.74
2.6	-10.9	-18	21	24.3	45.3	2.74	44.4	2.59	45.5	2.82
2.7	-13	-13	21	23.9	44.9	2.65	44.2	2.47	45.4	2.77
2.8	-14.2	-10.6	21	23.4	44.4	2.48	43.8	2.46	45.2	2.8
2.9	-17.2	-9.9	21	23.1	44.1	2.48	43.4	2.4	44.7	2.8
3.0	-13	-8.8	21	22.9	43.9	2.54	43.2	2.43	44.4	2.64

S/N : RWPM309090002

	Temp : 25℃				Temp : 25℃		Temp : 65℃		Temp : -20℃	
Freq	I/L	O/L	Pin	Gp	Pout	Ids	Pout	Ids	Pout	Id
(GHz)	(dB)	(dB)	(dBm)	(dB)	(dBm)	(A)	(dBm)	(A)	(dBm)	s(A)
2.0	-7.6	-9.9	21	22.2	43.2	3.1	42.6	2.95	44	3.2
2.1	-7.7	-11.7	21	22.3	43.3	2.99	42.7	2.92	44.2	3.15
2.2	-7.8	-13.6	21	22.5	43.5	2.96	43	2.88	44.4	3.18
2.3	-7.8	-15.4	21	23	44	2.95	43.5	2.9	44.7	3.22
2.4	-8.1	-17.6	21	23.4	44.4	2.92	44	2.85	45.1	3.15
2.5	-8	-22.1	21	23.8	44.8	2.86	44.3	2.85	45.4	3.05
2.6	-9	-26.7	21	24.6	45.6	3.0	45.1	2.92	46	2.99
2.7	-11	-21.9	21	24.3	45.3	2.97	44.9	2.94	45.7	2.93
2.8	-12.4	-16.7	21	23.6	44.6	2.78	44.1	2.7	45	2.89
2.9	-13.9	-13.8	21	23.1	44.1	2.66	43.5	2.62	44.6	2.88
3.0	-14	-11.2	21	22.5	43.5	2.63	43.1	2.58	44	2.72

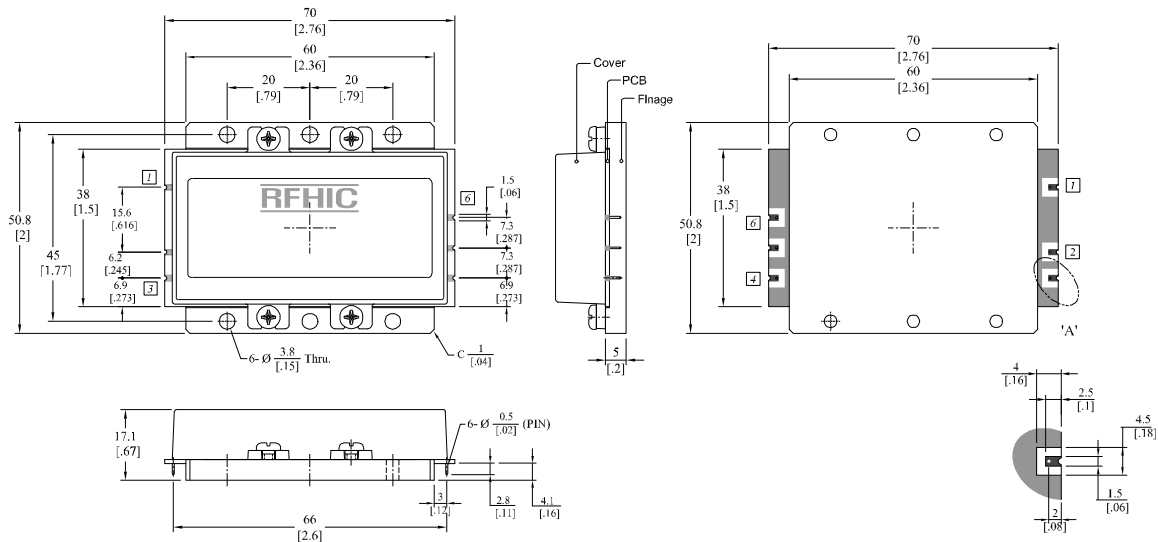
S/N : RWPM309090003

	Temp : 25℃				Temp : 25℃		Temp : 65℃		Temp : -20℃	
Freq	I/L	O/L	Pin	Gp	Pout	Ids	Pout	Ids	Pout	Id
(GHz)	(dB)	(dB)	(dBm)	(dB)	(dBm)	(A)	(dBm)	(A)	(dBm)	s(A)
2.0	-7	-10.2	21	22.1	43.1	3.1	42.4	2.87	43.5	3.3
2.1	-6.8	-12	21	22.2	43.2	2.98	42.5	2.85	44	3.2
2.2	-6.8	-14	21	22.4	43.4	2.97	42.8	2.93	44.2	3.27
2.3	-7	-16.3	21	22.8	43.8	2.96	43	3.0	44.3	3.31
2.4	-7.4	-19	21	23	44	2.86	43	2.88	44.4	3.19
2.5	-8.1	-22.1	21	23.1	44.1	2.75	43.2	2.67	44.8	3.02
2.6	-9.7	-23.2	21	23.8	44.8	2.86	43.5	2.66	45.4	3.01
2.7	-11.2	-18.3	21	23.5	44.5	2.79	43.5	2.6	45	2.89
2.8	-11.7	-13.8	21	23	44	2.6	43.3	2.55	44.8	2.83
2.9	-15.3	-12.2	21	22.5	43.5	2.54	42.9	2.54	44.4	2.84
3.0	-16.4	-10.1	21	22.2	43.2	2.56	42.7	2.49	43.7	2.74

Mechanical Specifications

PARAMETER		UNIT	TYP
Dimension	Package	mm	70 x 50.8 x 17.1
	Housing		90 x 75 x 25
Weight	Package	g	75
	Housing		270
Housing RF IN/OUT Connector		-	SMA Female
Cooling		-	External Heat-sink

Package Dimensions (Type: DP-75)

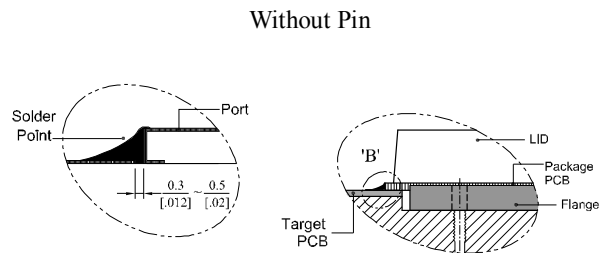
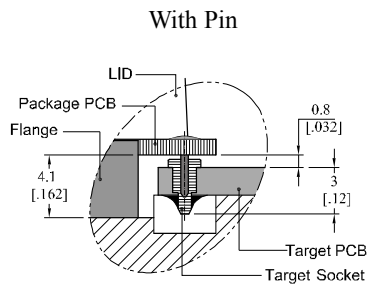
* Unit: mm[inch] | Tolerance: ± 0.2 [.008]

Pin Description			
Pin No	Function	Pin No	Function
1	RF IN	4	Switch ON/OFF
2	Vcc(+28V)	5	GND
3	Shut Down(+5V)	6	RF OUT

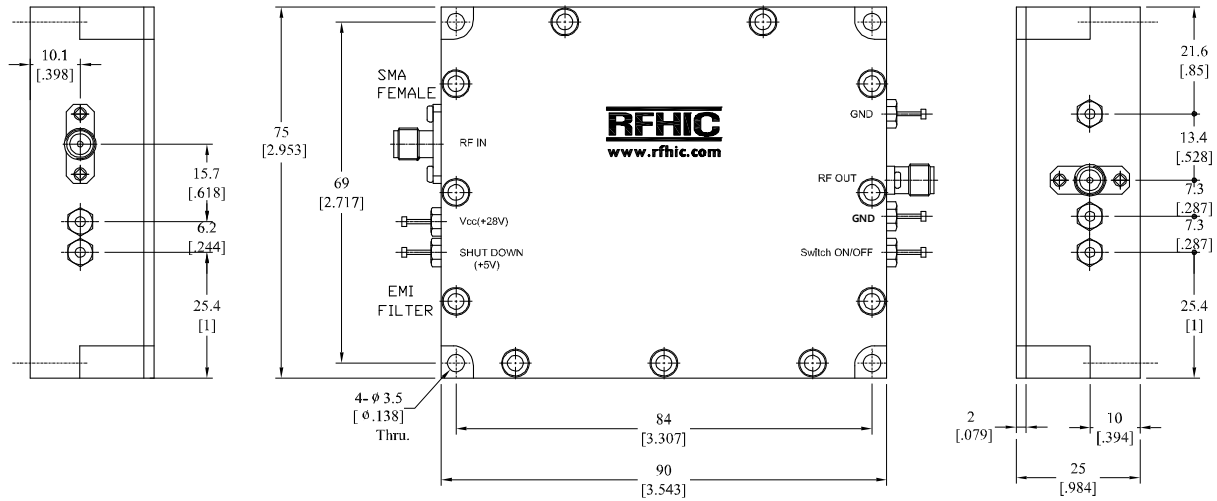
* Terminal Pin Information : ASK206091,AA (Acethink, Pin) , ASK20556,AA-1 (Acethink, Pin Socket)

* Recommended Screw Torque : 8.0kgf.cm ± 1 using SEMS M3 10mm Bolt

How to connected the package to a target PCB



SMA Connectorized Housing Dimensions



Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RWP25020-50	2014.4.2	1.3	Mechanical Specifications	-
RWP25020-50	2013.9.26	1.2	SMA Connectorized Housing Dimensions	-
RWP25020-50	2012.9.5	1.1	-	-

RFHIC Corporation reserves the right to make changes to any products herein or to discontinue any product at any time without notice. While product specifications have been thoroughly examined for reliability, RFHIC Corporation strongly recommends buyers to verify that the information they are using is accurate before ordering. RFHIC Corporation does not assume any liability for the suitability of its products for any particular purpose, and disclaims any and all liability, including without limitation consequential or incidental damages. RFHIC products are not intended for use in life support equipment or application where malfunction of the product can be expected to result in personal injury or death. Buyer uses or sells such products for any such unintended or unauthorized application, buyer shall indemnify, protect and hold RFHIC Corporation and its directors, officers, stockholders, employees, representatives and distributors harmless against any and all claims arising out of such unauthorized use.

Sales, inquiries and support should be directed to the local authorized geographic distributor for RFHIC Corporation. For customers in the US, please contact the US Sales Team at 919-677-8780. For all other inquiries, please contact the International Sales Team at 82-31-8069-3036