

Product Features

- GaN on SiC Broadband High Power Amplifier
- 500 ~ 1000MHz Operation Bandwidth
- Small Signal Gain 40dB min.
- 40W Typical. @ P3dB

Applications

- General Purpose



Package Type : DP-75

Description

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

Operating frequency range is from 500 ~ 1000MHz.

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 @ $V_{CC} = 28V$; $T_c = 45^\circ C$; $Z_S = Z_L = 50\Omega$

PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Operating Frequency	MHz	500	-	1000	-
Small Signal Gain	dB	40	42	44	-
Gain Variation vs Frequency	dBpp	-	± 1	± 2	-
P_3 dB	dBm	44	45	-	500 ~ 700MHz
		46	47	-	700 ~ 1000MHz
OIP3 @ $P_o = +33$ dBm (1MHz Tone spacing, CW 2-Tone)	dBm	46	48	-	500 ~ 1000 MHz
Input Return Loss	dB	-	-5	-3	-
Output Return Loss	dB	-	-12	-7	-
2 nd Harmonic suppression	dBc	-	-35	-30	CW 1-tone @ $P_o = +30$ dBm, Freq 500MHz
Supply Voltage	V	27.5	28	30	$V_{cc}(=V_{ds})$
Quiescent Current consumption	A	-	3	3.5	-
Current Consumption	A	-	4.5	5	CW 1-tone @ $P_o = +46$ dBm
On/Off Switching Time*	uS	-	3	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 : 300ms delay

Absolute Maximum Ratings

PARAMETER	UNIT	RATING
Input RF Power	dBm	12
Supply Voltage	V	30
Load Mismatch Value	-	3 : 1 @all load phase

* Input Signal Condition : CW 1-Tone

Environmental Characteristics

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Case 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
RWP06040-60	Pallet
RWP06040-6H*	Module assembled with RWP06040-60

* RWP06040-6H is a SMA connectorized housing version of RWP06040-60. Electrical parameters are all same as RWP06040-60.

For more information, please contact RFHIC

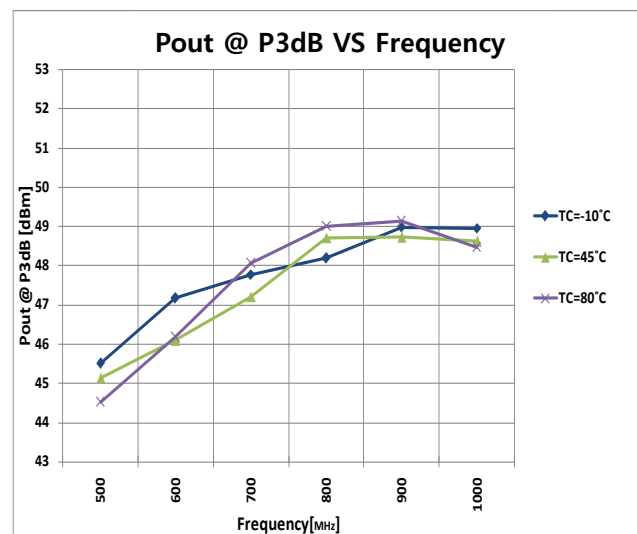
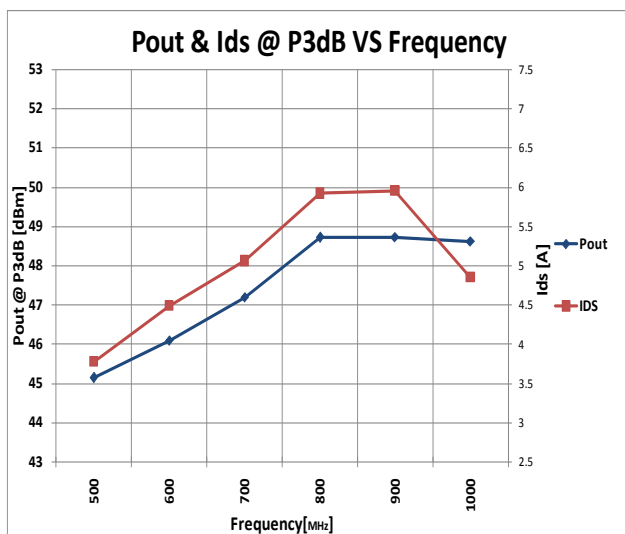
Mechanical Specifications

PARAMETER	UNIT	TYP
Dimension	Package	70(L) x 50.8(W) x 17.1(H)
	Housing	90(L) x 75(W) x 25(H)
Weight	Package	75
	Housing	270
Housing RF IN/OUT Connector	-	SMA Female
Cooling	-	External Heat-sink

*Dimension and weight may change without notice.

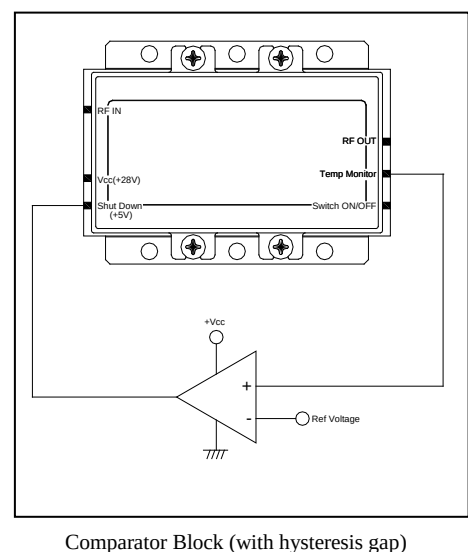
Typical Performance @ 25°C

Frequency	P1dB	P3dB	Current@P1dB	Current@P3dB	2nd Harm@30dBm	OIP3 (30dBm/Tone)
(MHz)	(dBm)	(dBm)	(A)	(A)	(dBc)	(dBm)
500	42.6	45.4	2.99	3.80	-35.6	52.7
600	42.9	45.6	3.80	4.13	-35.96	53.3
700	43.1	46.2	3.33	4.74	-36.58	53.4
800	44.3	47.7	3.61	5.24	-44.92	53.4
900	44.0	47.0	3.41	4.85	-58.74	52.7
1000	46.3	47.3	3.30	3.51	-77.78	51.2

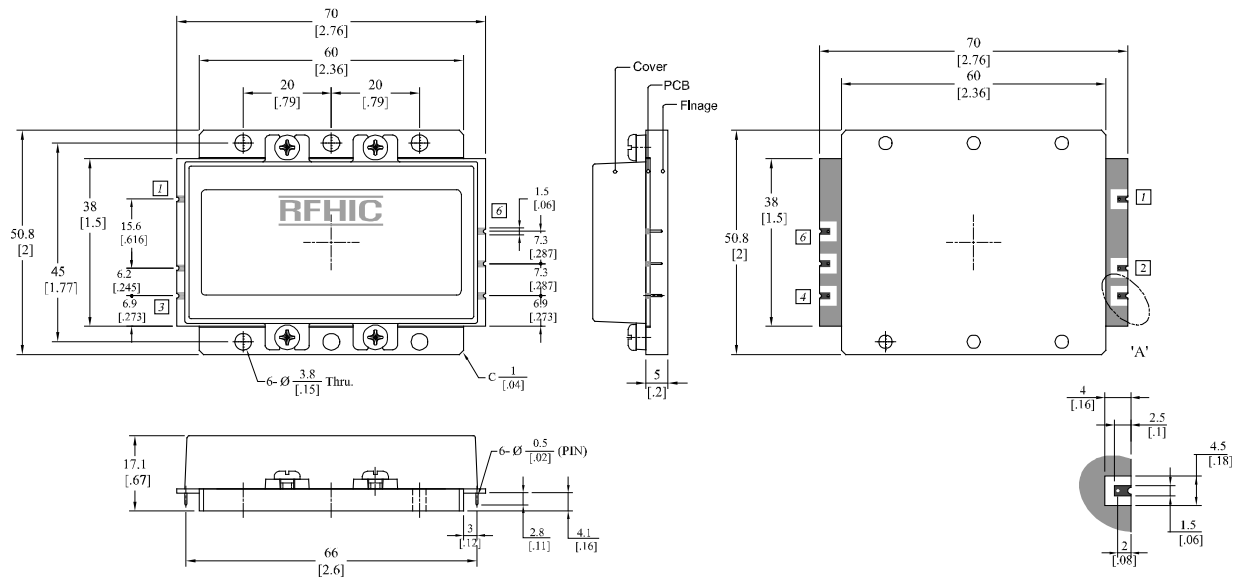


Precautions

1. This product is designed to be used for broadband amplification. Heat generation is higher when there is no RF signal in the device. Therefore, the worst case scenario is when there is no RF signal, and the amplifier is “on” with current draw. The temperature must be calculated properly. Case temperature must maintain below 80°C. Right side drawing notes how to use a temperature monitoring function to protect against overheating.
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 (Type: DP-75)

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

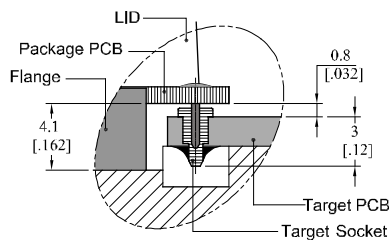
Pin Description			
Pin No	Function	Pin No	Function
1	RF IN	4	Switch ON/OFF
2	Vcc(+28V)	5	Temp Monitor
3	Shut Down(+5V)	6	RF OUT

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

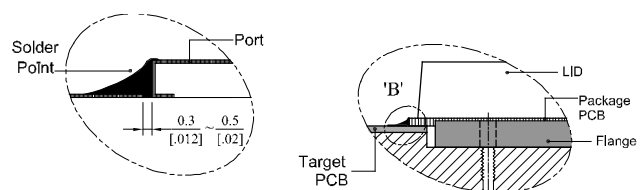
* Recommended Screw Torque : 8.0kgf.cm ± 1 using SEMS M3 10mm Bolt

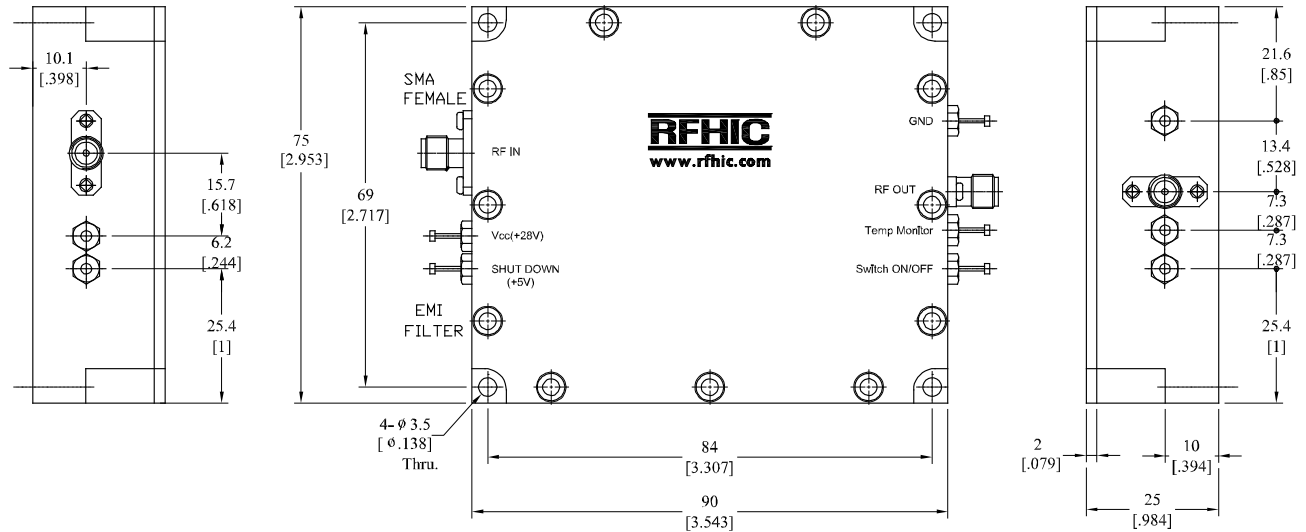
How to connected the package to a target PCB

With Pin



Without Pin



SMA Connectorized Housing Dimensions

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RWP06040-60	2014.5.23	1.7	Condition & Graph modification □	-
RWP06040-60	2014.4.2	1.6	Mechanical Specifications	-
RWP06040-60	2013.10.18	1.5	Parameter & Graph modification □	-

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