



Product Features

- Doherty amplifier design
- Small and light weight
- 50 Ohm Input/ Output impedance matched
- Highly reliable and rugged design
- High efficiency, High Gain
- 16W typical P_{AVG}

Application

- CDMA, W-CDMA Repeater



Description

The RTP08016-10 is designed for RF system application frequencies from 860MHz to 890MHz, with high gain. This Pallet Amplifier uses GaN on Sic HEMT technology which performs high breakdown voltage, high linearity, and high efficiency. The RTP08016-10 is a CDMA W-CDMA DPD application amplifier

Electrical Specifications

Parameter	Specification @ 25°C		
Operating Frequency Range	860-890		MHz
Technologies Supported	CDMA, WCDMA		
Instantaneous Bandwidth	30MHz		
Operating Temperature	-10°C ~ +80°C @ Plate Temperature		deg °C
Operating Voltage	Main voltage	45.0±1.0	V
	Sub voltage	5.6±0.2	
Gain (25°C)	40±3.0		dB
Gain Flatness	< 1.5		dBp-p.
Input/Output Return Loss	> 18.0		dB
Current Consumption	Main current	<1.0 max	A
	Sub current	< 0.1 max	A
Output Power	42		dBm
Spectrum Mask (ACLR) * Input Signal: Better than -58dBc	Pre DPD	< -25@ Δ5MHz	dBc
	Post DPD	< -45@ Δ5MHz	dBc
Saturation Power	> 49.5		dBm
CCDF	7.5		dB
Efficiency	> 35.5 @ Plate Temperature		%
Coupling Value	0.7±1.0		dB
Gain Flatness for feedback	< 0.3		dBp-p.

Note : Channel Bandwidth: 30 MHz(WCDMA 6FA), PAR ⇒ about 7.5 dB @ considering DPD

Environmental Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Ambient Temperature	Ta	-10		+80	°C
Storage Temperature	Tstg	-40		+130	°C
Relative humidity w/o condensation	RH			95	%

Mechanical Specifications

Parameter	SPECIFICATION
RF Input Connector	PAF-S05-013-004
RF Output Connector	PAF-S05-013-004
RF Coupled Connector	PAF-S05-013-004
DC Connector	53426-0910
Dimension (mm)	20(H) × 180(L) × 100(W)
Cover Gasket (Inserting Type)	1.5(H) × 0.5(L)

Maximum Rating

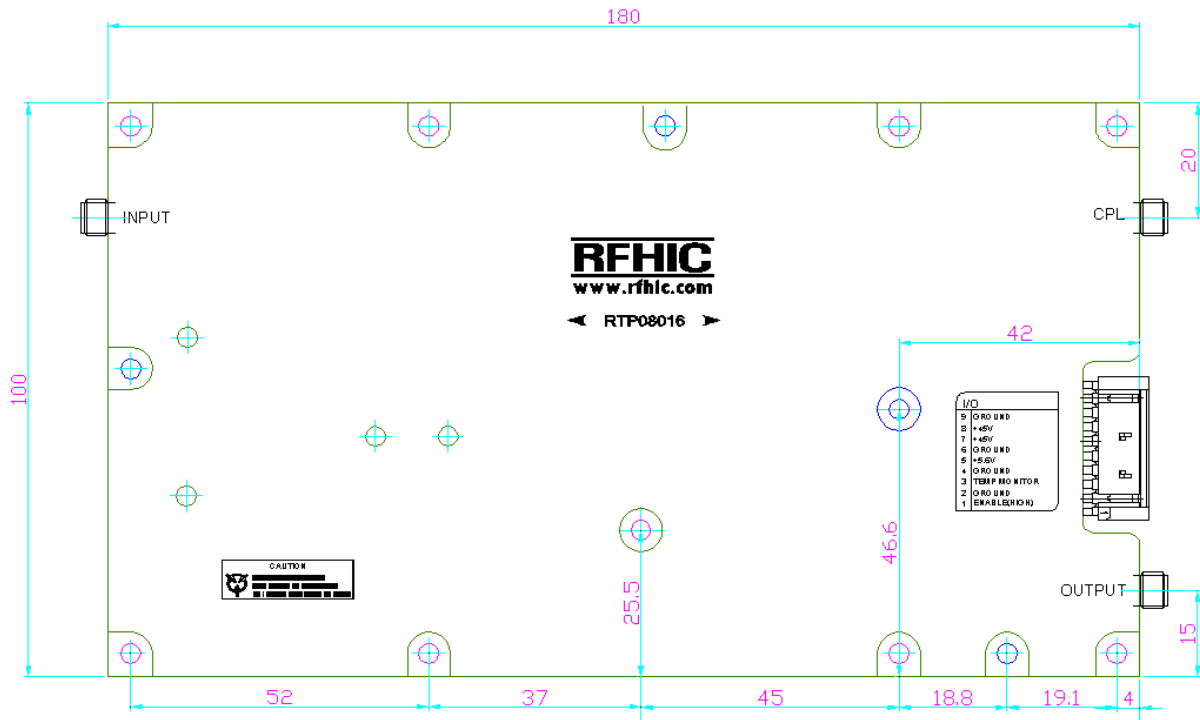
Input Overdrive	P _{OD}	+2dBm	Max.
Load VSWR	Ψ	∞ : 1 (All Phase & Amplitude)	Nom.
Operating Case Temperature	T _c	+85	°C

Interface Connector

Pin No.	Name	I/O	Description
1	Enable(+5V)	I	PA Control Signal Voltage
2,4,6,9	GND	-	Ground
3	Temp	O	Temp Sensor Output Voltage
5	+5.6 Vdc	I	Amplifier's Gate Voltage and MMIC drive voltage
7,8	+45 Vdc	I	Drive and Main Amplifier's Drain Voltage

*Note: Based on the customer's need, RFHIC can provide different type of connector

Outline Drawing

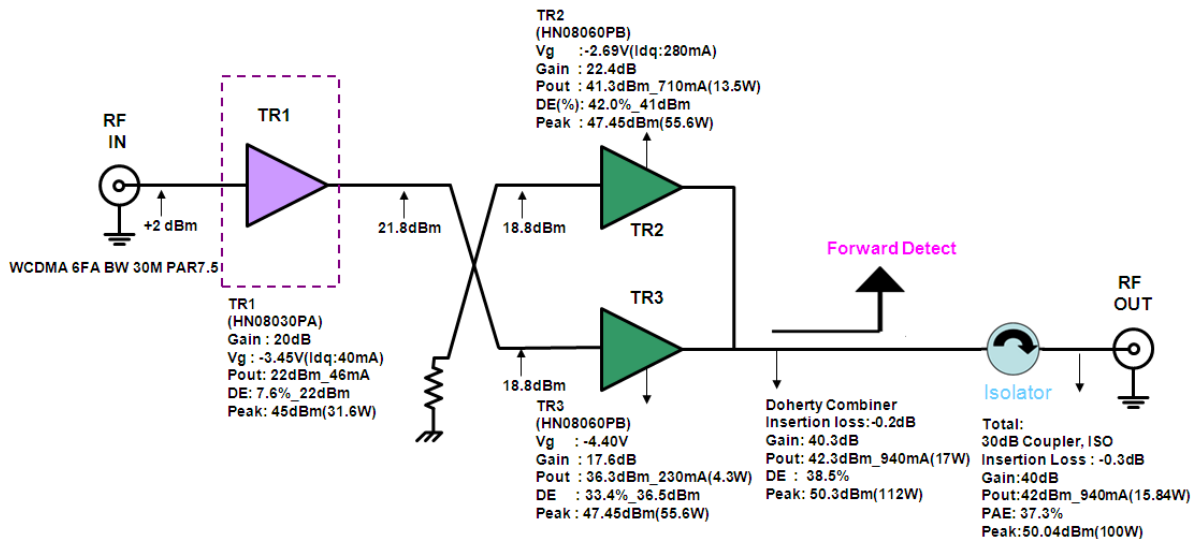


*Note :

Connector positions and module mount holes would be changed.

Unit : mm

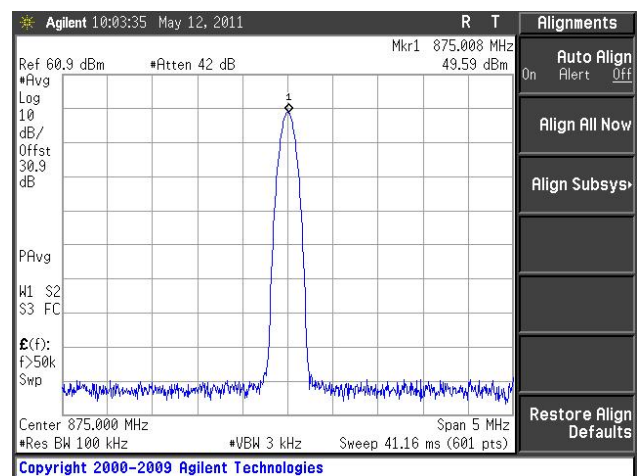
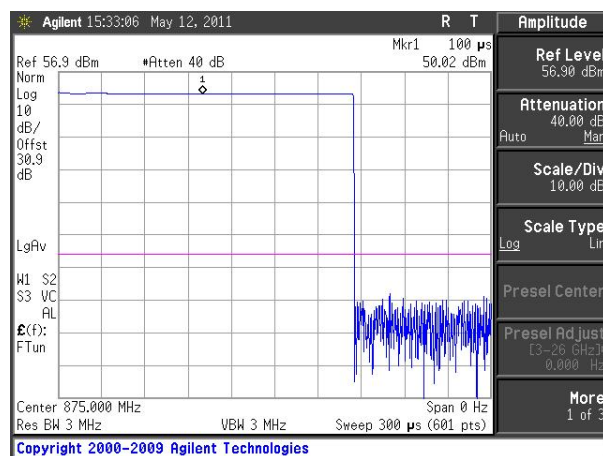
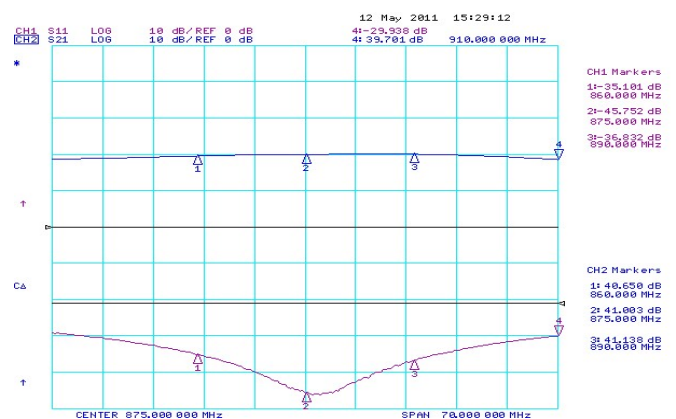
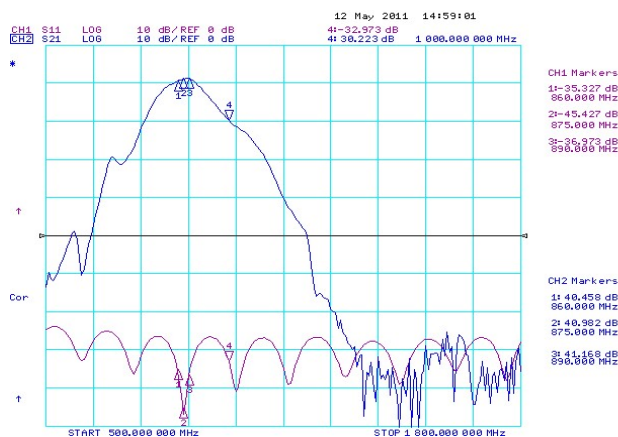
RTP08016-10 Budget



Test Data (WCDMA 6FA@16W/+45V, PAR=7.5dB)

Test Equipment List

- Spectrum Analyzer Agilent E4440A or Similar 1ea
- Network Analyzer Agilent E5071 or Similar 1ea
- Signal Generator E4438C or Similar 1ea
- Power Supply : +60V/10A or Higher 1ea, +30V/5A or Higher 2Port 1ea
- Power Meter N1912A or Similar 1ea (optional)
- Power Sensor E9320A or Similar 1ea (optional)
- Attenuator : 30dB, 250W or Similar 1ea
- Coupler(30dB) or Similar 1ea
- PC : VSA 89600A or Similar 1ea



Test Result: DPD Operation (WCDMA 6FA)



Note : -10℃ ~ +80℃ @ Plate Temperature

Test Sheet (WCDMA 6FA@16W/+45V, PAR=7.5dB)

Parameter	Specification@ 25℃
Operating Frequency [MHz]	860~890
Output Power [dBm]	+42.0
Pre DPD ACLR Δ5MHz [dBc]	-26.9
Post DPD ACLR Δ5MHz [dBc]	-50.4
Saturated Power [dBm]	+49.87
Current 45.0V [A]	+0.95
Current 5.6V [A]	+0.07
Coupling Value [dBm]	+0.86
Input Return Loss [dB]	-32.7
Output Return Loss[dB]	-21.3
Efficiency[%]	+37.5

[Test Result]

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