GaN-SiC Pallet Amplifier RTP23020-D1

Product Features

• Doherty amplifier design
• GaN on SiC HEMT
• Small and light weight
• 50 Ohm Input/Output impedance matched
• Highly reliable and rugged design
• High efficiency, High Gain
• 16 typical P_{AVG}

Application

• WiMAX DPD amplifier
• General purpose RF amplifier

Description

RTP23020-D1 has been designed for RF system application frequencies from 2300MHz to 2400MHz, with high gain. This DPD application Pallet Amplifier has been developed with GaN on SiC HEMT technology that has advantages of high breakdown voltage, high linearity, and high efficiency.

Electrical Specifications @ VDD=+30VDC, T=25°C, 50Ω

PARAMETER	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	2300	-	2400	MHz
Output Power	P_{AVG}	-	16	-	Watt
Output Power @ Psat G.C.P	P_{sat}	-	75	-	Watt
Small Signal Gain	SSG	-	55	-	dB
Small Signal Gain Flatness	ΔG	-	± 1.0	± 1.5	dB
Gain Variation	ΔGt		± 2.0		dB
ACLR @ WiMAX 10MHz 2FA	ACLR		-25dBr		dBr
Input VSWR	S11	-	1.5:1	1.7:1	-
Forward Coupling	FC	-	-30	-	dB
Operating Voltage	VDC	-	30	-	Volt
Efficiency @ Pout 10Watt	E	31	33		%

※ **Test Signal Condition: WCDMA 4FA (PAR 8.0dB) or WiMAX 2FA (PAR 8.0dB)**
Test DPD solution: TI DPD

Environmental Characteristics

PARAMETER	Symbol	Min	Typ	Max	Unit
Operating Temperature	Tc	-20	-	+60	°C
Storage Temperature	Ts	-30	-	+90	°C

Mechanical Specifications

PARAMETER	Value	Units	Limits
Dimensions (L x W x H)	150 x 90 x 18.5	mm	Max
RF Connectors In/Out	SMA Female		
RF Connector Coupling	MCX Female		
DC Connectors / Controls	MDF7-10S-2.54DSA		
Cooling	External Heat sink + airflow		

RF Interface Connectors

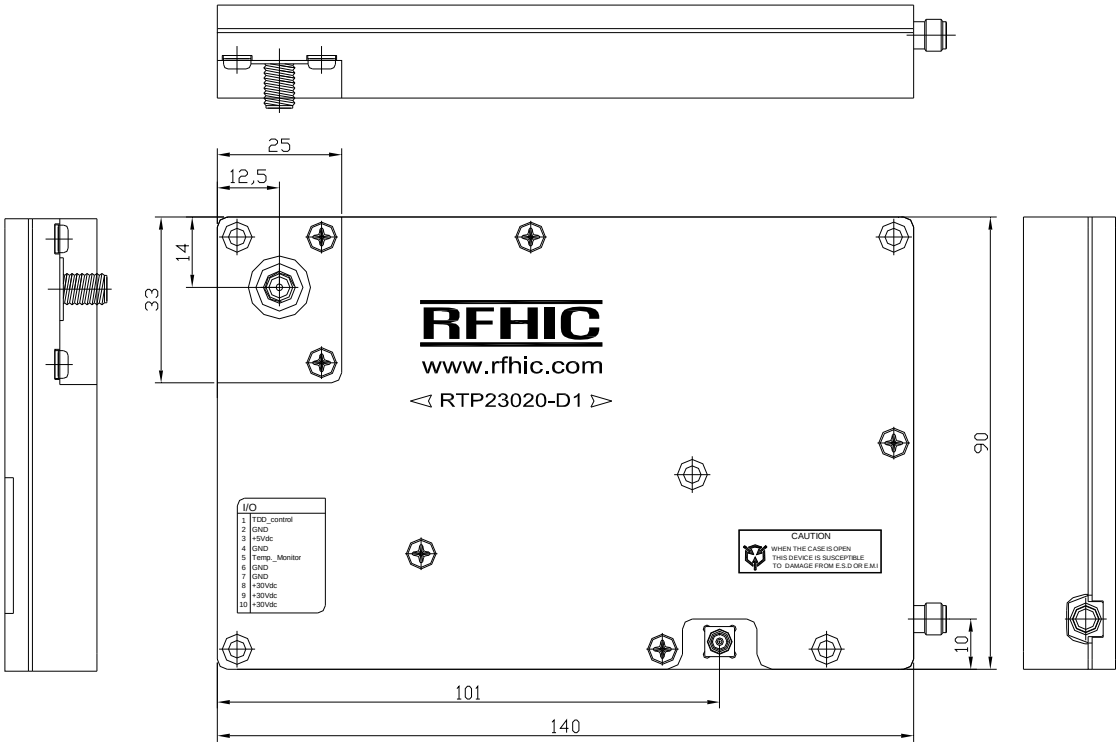
Pin #	DESCRIPTION	Specifications
1	**RF IN**	RF Input signal from TRx B'd
2	**RF OUT**	RF Output signal to TDD switch
3	**RF FWD Port**	RF Forward Detection signal For Feed-back

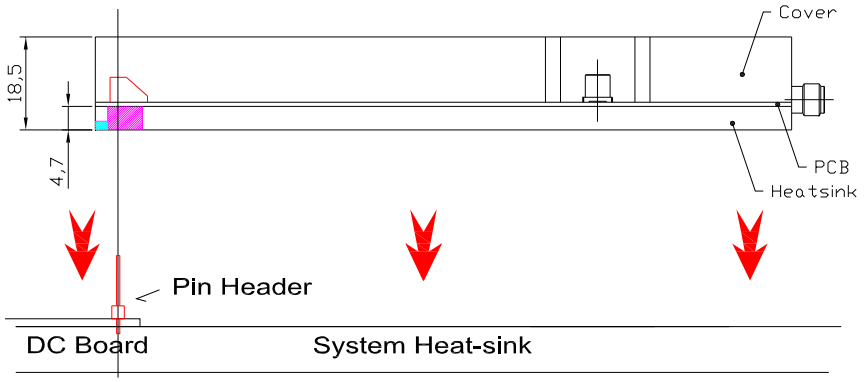
DC Connector

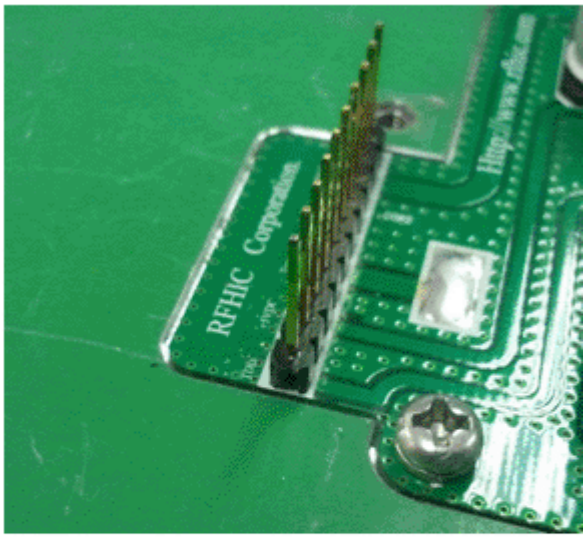
Pin #	DESCRIPTION	Specifications
1	**TDD Control**	PA TDD control signal for switching gate bias
2	**GND**	Ground
3	**Gain Block Amp +Vgg**	+5V
4	**GND**	Ground
5	**Temp. Monitor**	Reporting Temperature data [0.75V/25℃(10mV/℃)]
6,7	**GND**	Ground
8,9,10	**Drive, Main Amp +Vdd**	+28Vdc ~ +32Vdc

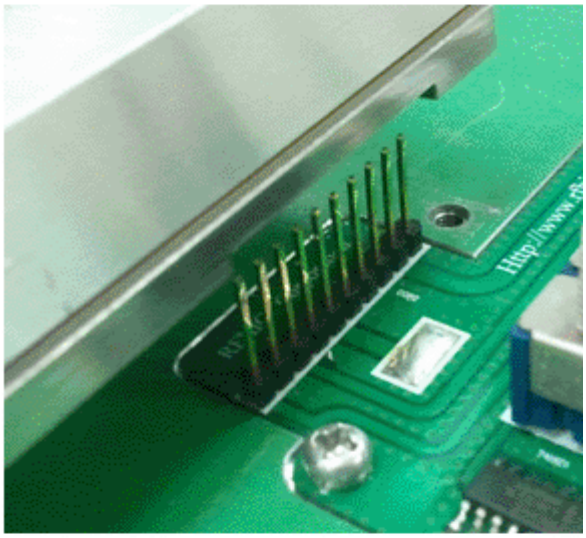
※ **RF connector and DC connector custom design available.**

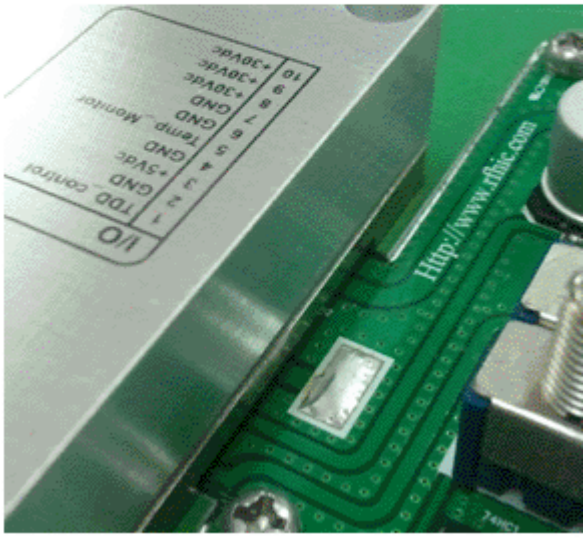
Outline Drawing











Please note the following conditions.

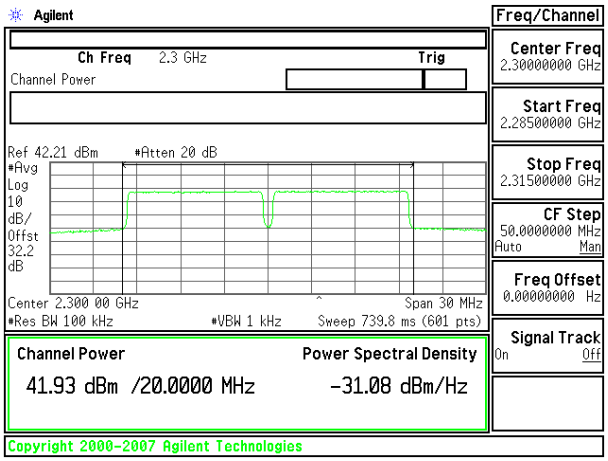
■ In order to supply the power to the amplifier, DC Board with a built in Pin Header is necessary.

■ DC Board is not supported by RFHIC.

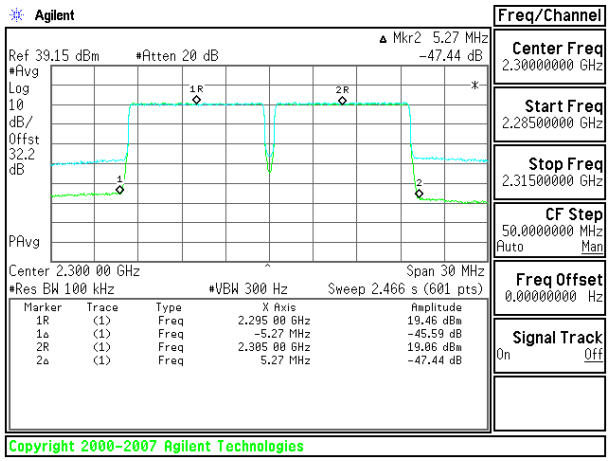
■ For evaluation, DC Board can be provided under the customer's request.

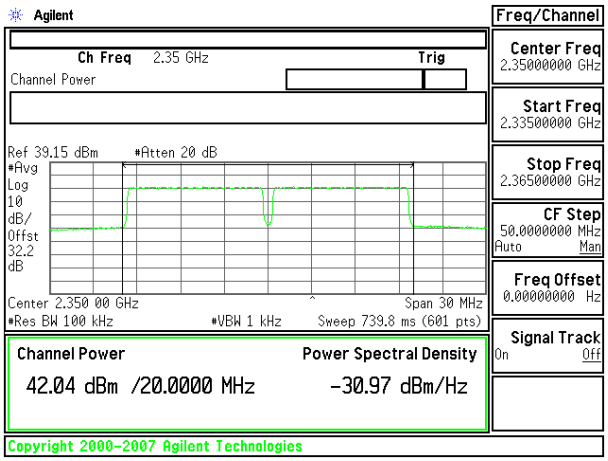
Typical Output Spectrum @ WiMAX 2FA (PAR 8.0dB) : Pout =16W(42dBm)

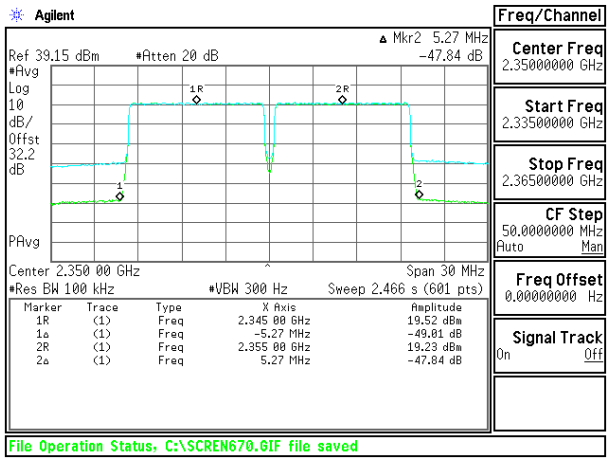
DPD ON

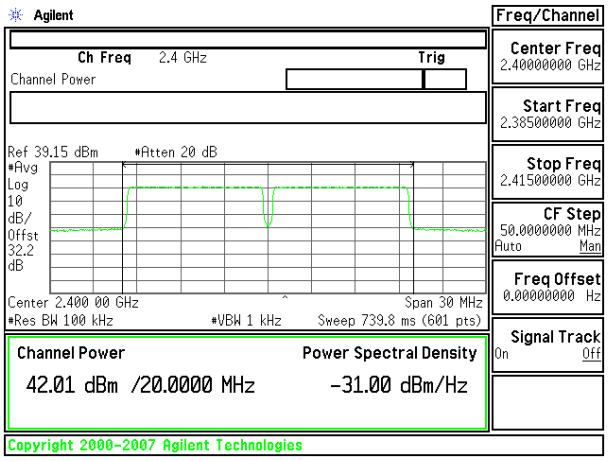


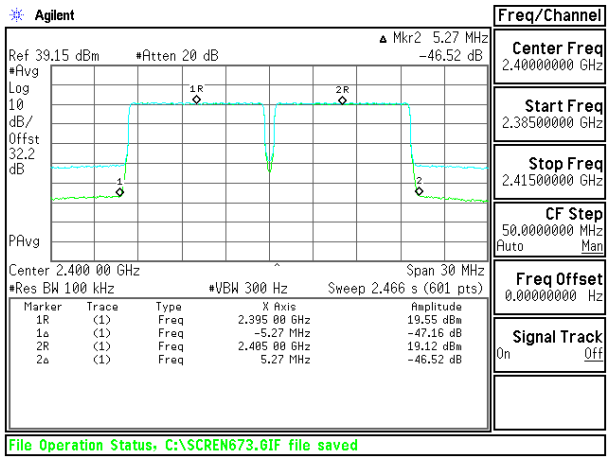
Cancellation











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