

Features:

- 9.0 dB Typical Gain
- 28.5 dBm Typical P1dB
- IP3 @ 44 dBm
- EVM = 1.2% at 20 dBm Pout
- Single Positive Bias
- Internally Prematch
- Leadless Surface Mount

Applications:

- 802.16 WiMax
- 802.11 a/n WLAN
- Wireless Communications
- Telecomm Infrastructure



Description:

The WPS-495917-02 is a high linearity GaAs FET amplifier partially pre-matched to 50 ohms operating over the frequency range 4.9 to 5.9 GHz. The WPS-494917-02 is packaged in a leadless chip carrier. The 02 package is 'lead free' and solder ability per Mil-STD 750, method 2026. The package construction is guaranteed to pass gross leak.

Electrical Specifications:

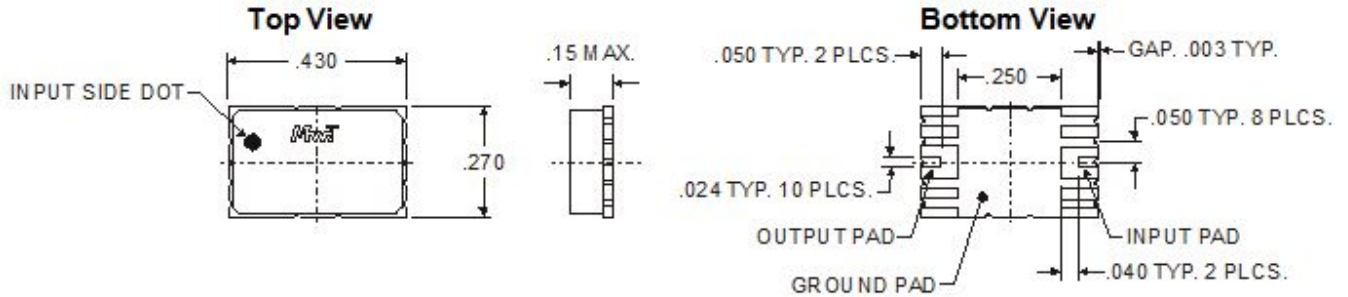
• at 25°C, Vdd = 7.5 V, Zo = 50 ohms

SYMBOL	PARAMETERS	Min	Typical	Max	Unit
Freq.	Frequency Range	4.9		5.9	GHz
SSG	Small Signal Gain		9.0		dB
VSWR	Input/ Output VSWR		3.0:1/2.0:1		-
P1 dB	Pout at 1 dB Comp Point		+28.5		dBm
Pout	<2.5% EVM 52 carriers		22.0		dBm
IP3	Third-order Intercept		44.0		dBm
Ids	DC Current, Vgs=-0.5 volts		250		mA
Rth	Thermal Resistance junction to case		26		°C/W

Absolute Maximum Ratings

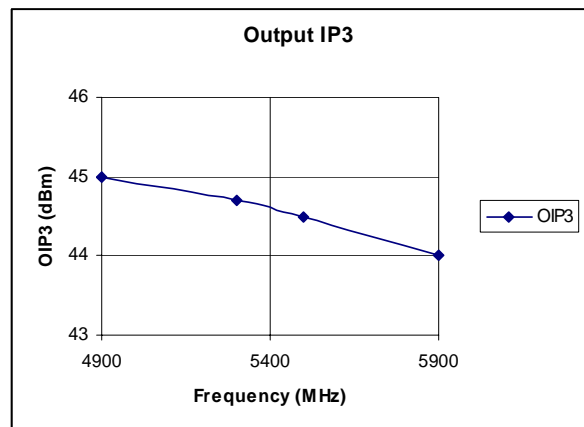
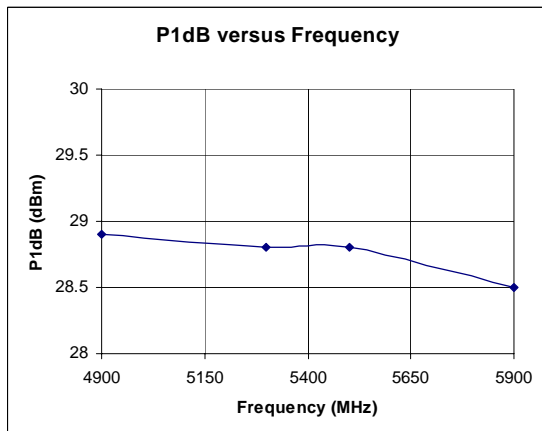
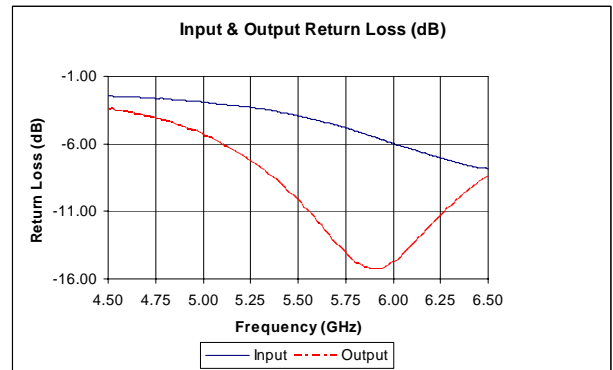
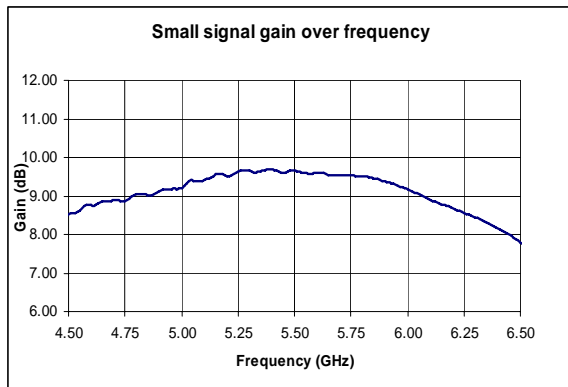
Max Bias Voltage	8.0 V
Max Continuous RF Input Power	+18 dBm
Max Peak Input Power	+20 dBm
Case Operating Temp	+70 °C
Max Storage Temp	*65 to +150 °C

Package Outline Diagram (Package 02)



All dimensions are in inches

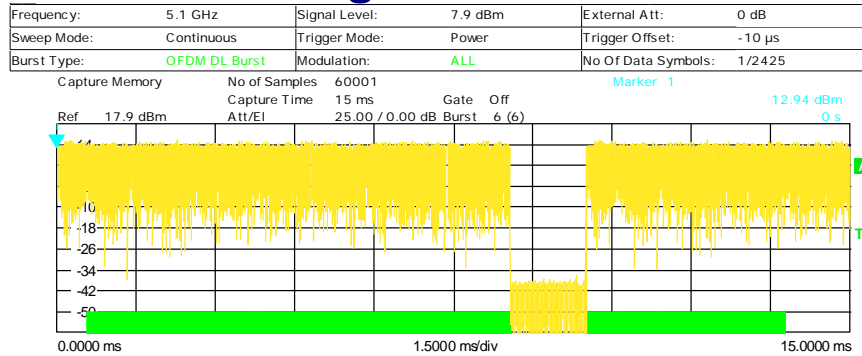
Pin Designation (Top View)			
Pin 1 (DOT Top Left)	GND	Pin 10	GND
Pin 2	GND	Pin 9	GND
Pin 3	RF In/Vg	Pin 8	RF Out/Vdd
Pin 4	GND	Pin 7	GND
Pin 5	GND	Pin 6	GND



Typical data at 25°C, Vdd=6.5 volts, Vgs=-0.7 (measurements taken in production test fixture)

The following downlink WiMAX 802.16d test signal, as shown in the Figure below, which includes preambles, FCH and QPSK, 16 QAM and 64 QAM is used to evaluate the WPS amplifier. The output power is demodulated to measure EVM for 64 QAM. The EVM error is the accumulated error from the modulator and WPS amplifier. The EVM floor for the modulator is 0.4%. At 19 dBm the WPS amplifier contributes less than 1% EVM.

22 dBm average 802.16 for 2% EVM

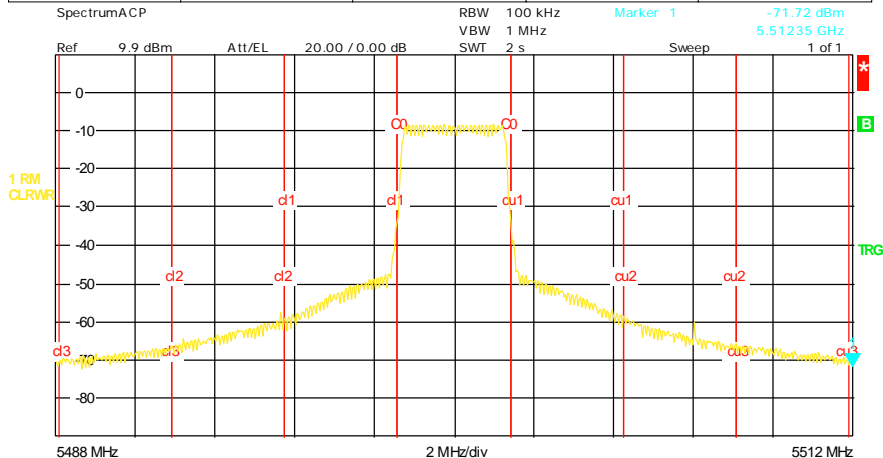


Burst Summary

Downlink Burst	Summary	ListBurst	Area	Modulation	Length[sym]	
Burst 3	Preamble	BPSK	1	9.91	-40.56	
	Data	64QAM	59	7.04	-34.43	
Burst 4	Preamble	BPSK	1	9.72	-39.08	
	Data	BPSK	6	6.96	-32.22	
Burst 5	Preamble	BPSK	1	9.79	-41.89	
	Data	QPSK	9	7.04	-37.44	
Burst 6	Preamble	BPSK	1	9.88	-39.63	
	Data	16QAM	29	7.02	-34.74	
Overall			147	8.65	-36.82	

Frequency:	5.5 GHz	Signal Level:	8.4 dBm	External Att:	0 dB
Sweep Mode:	Continuous	Trigger Mode:	Power	Trigger Offset:	-10 µs
Burst Type:	OFDM DL Burst	Modulation:	ALL	No Of Data Symbols:	1/2425

Adjacent Channel Power Relative				
Channel	Bandwidth	Spacing	Lower	Upper
TX	3.5 MHz	...		5.34 dBm
Adjacent	3.5 MHz	3.5 MHz	-39.58 dB	-40.02 dB
Alternate	3.5 MHz	7 MHz	-53.39 dB	-53.43 dB
2nd Alternate	3.5 MHz	10.5 MHz	-59.18 dB	-58.65 dB



EVM vs Pout

