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## MQ1080VP 915MHz 650W **with isolator**

### Introduction

This amplifier is designed with Innegration LDMOS MQ1080VP to show its extremely high power operation at key ISM band 915MHz. **In the amplifier, 1 pcs of high power isolator is used, so the report is about the overall performance with isolator's insertion loss(IL=0.15dB) included.**

**For more product info, please check our website in the catalog of Multi Market 50V LDMOS**

### Demo and Transistor

Frequency band : 915MHz  
Application : Multi Market  
Configuration : Class AB  
Test Signal : CW/Pulsed CW  
Transistor : MQ1080VP  
Date code : 172718S  
PCB : 30mil RO4350B

The amplifier has been characterized under the following conditions:

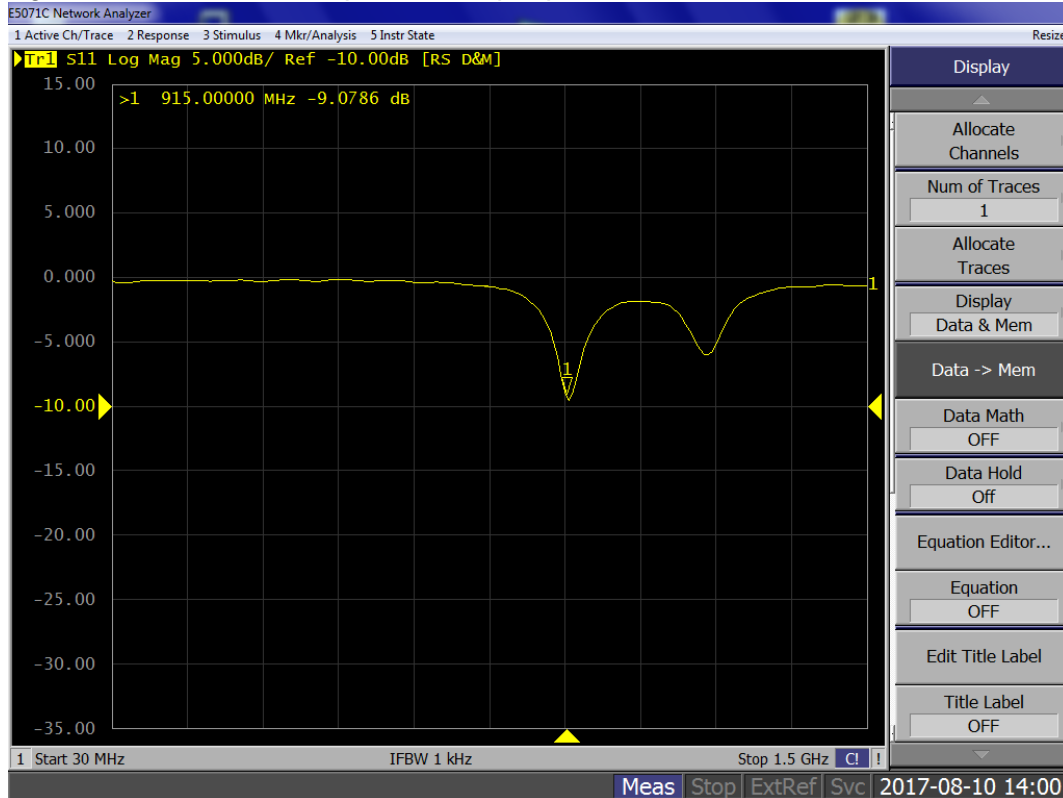
- Network Analyzer plots for S11
- The output power measurement using CW/Pulsed CW

**Note: The PA is tested with a supply voltage of  $V_{DS}= 50$  V,  $I_{DQ}=90$  mA, all measurements unless otherwise noted.**

## Summary

### 1. Network Analyzer plots for S11

Vgs=3.06V, Vds=50V, Idq=90mA, input power=0dBm

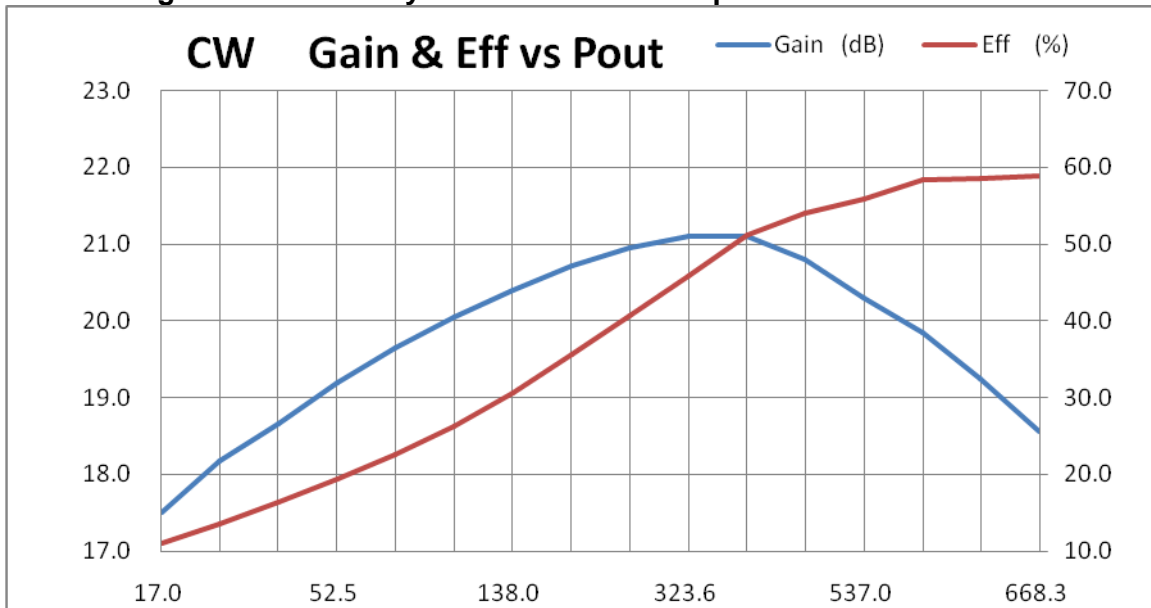


### 2. 915MHz CW performance

Signal: CW Vgs=3.06v, Vds=50v, Idq=90m

Freq (MHz)	Pin (dBm)	Pout (dBm)	Pout (W)	Gain (dB)	Ids (A)	Eff (%)
915	30.00	50.05	101.2	20.1	7.7	26.3
915	31.00	51.40	138.0	20.4	9.0	30.7
915	32.00	52.71	186.6	20.7	10.5	35.6
915	33.00	53.95	248.3	21.0	12.2	40.7
915	34.00	55.10	323.6	21.1	14.1	45.9
915	35.00	56.10	407.4	21.1	15.9	51.2
915	36.00	56.80	478.6	20.8	17.7	54.1
915	37.00	57.30	537.0	20.3	19.2	55.9
915	37.90	57.75	595.7	19.9	20.4	58.4
915	38.80	58.05	638.3	19.3	21.8	58.6
915	39.70	58.25	668.3	18.6	22.7	58.9

### 3. CW gain and efficiency as a Function of Output Power

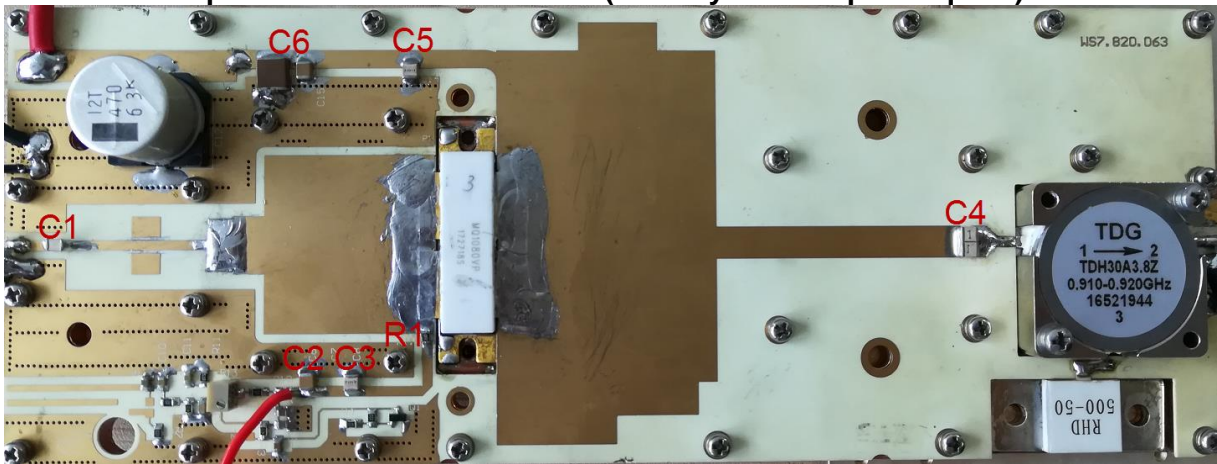


### 4. 915MHz,pulsed CW performance

Signal : pulse width 100us duty cycle 10% Vgs=3.06v, Vds=50v, Idq=90mA

Freq (MHz)	Pin (dBm)	Pout (dBm)	Pout (W)	Gain (dB)	Ids (A)	Eff (%)
915	30.00	49.79	95.3	19.8	0.830	25.4
915	31.00	51.32	135.5	20.3	0.979	30.2
915	32.00	52.72	187.1	20.7	1.141	35.3
915	33.00	54.09	256.4	21.1	1.325	41.2
915	34.00	55.35	342.8	21.4	1.532	47.2
915	35.00	56.40	436.5	21.4	1.749	52.3
915	36.00	57.15	518.8	21.2	1.935	56.0
915	37.00	57.65	582.1	20.7	2.090	57.9
915	37.90	58.00	631.0	20.1	2.225	58.9
915	38.80	58.25	668.3	19.5	2.344	59.1
915	39.70	58.49	706.3	18.8	2.456	59.5
915	40.70	58.75	749.9	18.1	2.582	60.0

**5. Fixture picture and bill of materials (PCB layout file upon request)**



BOM		
C1	47PF	ATC100B
C2,C6	1UF	
C3,C5	100PF	ATC100B
C4	47PF x2	ATC100B
R1	20 Ω	