

ITEH40004P3: 3200-3700MHz

Test Report ITEH40004P3 Class AB 3200-3700MHz

June 26th, 2025

Introduction

This amplifier is designed with Innogrations 12.5V ITEH40004P3 LDMOS

Demo and Transistor

Frequency band : 3200-3700 MHz
 Application : Telecom
 Configuration : Class AB
 Test Signal : Pulse CW
 Transistor : ITEH40004P3
 Date code :
 PCB : 20 Mil Rogers 4350

The amplifier has been characterized under the following conditions:

- Network Analyzer plots for gain and IRL.
- Gain, Efficiency.
- P1dB and P3dB Peak power measurement using the Pulse, 20uS width, 10% dule cycle
- RF Test Bench 2

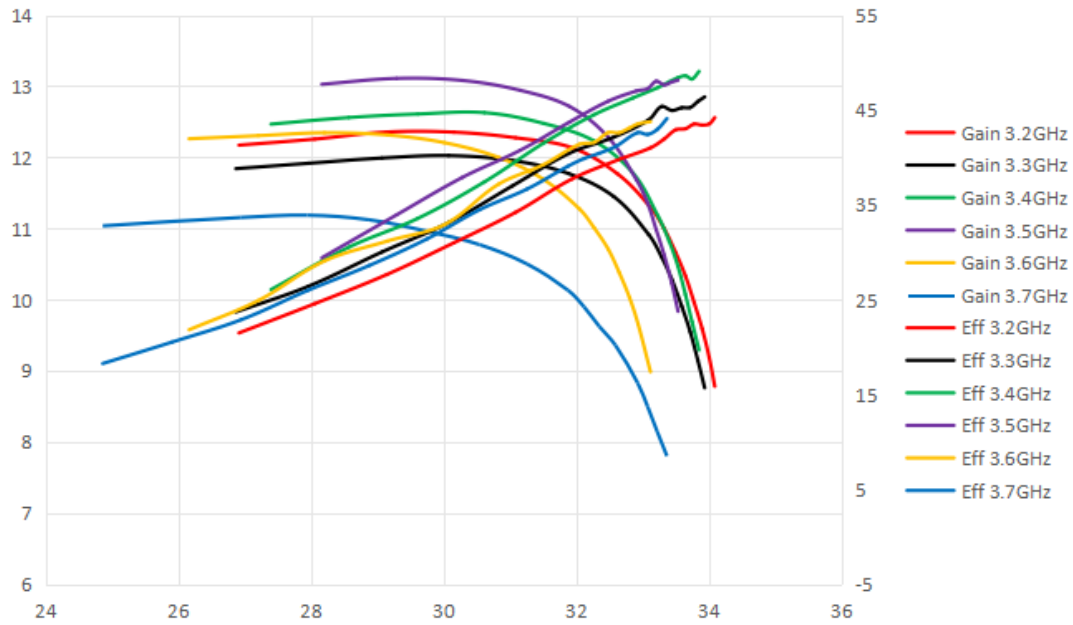
Note: The PA is tested with a supply voltage of $V_{DS}=12.5V$, $I_{DQ}=30mA$, $V_{GS}=-2.76V$, all measurements unless otherwise noted.

Test Results:

CW Performance

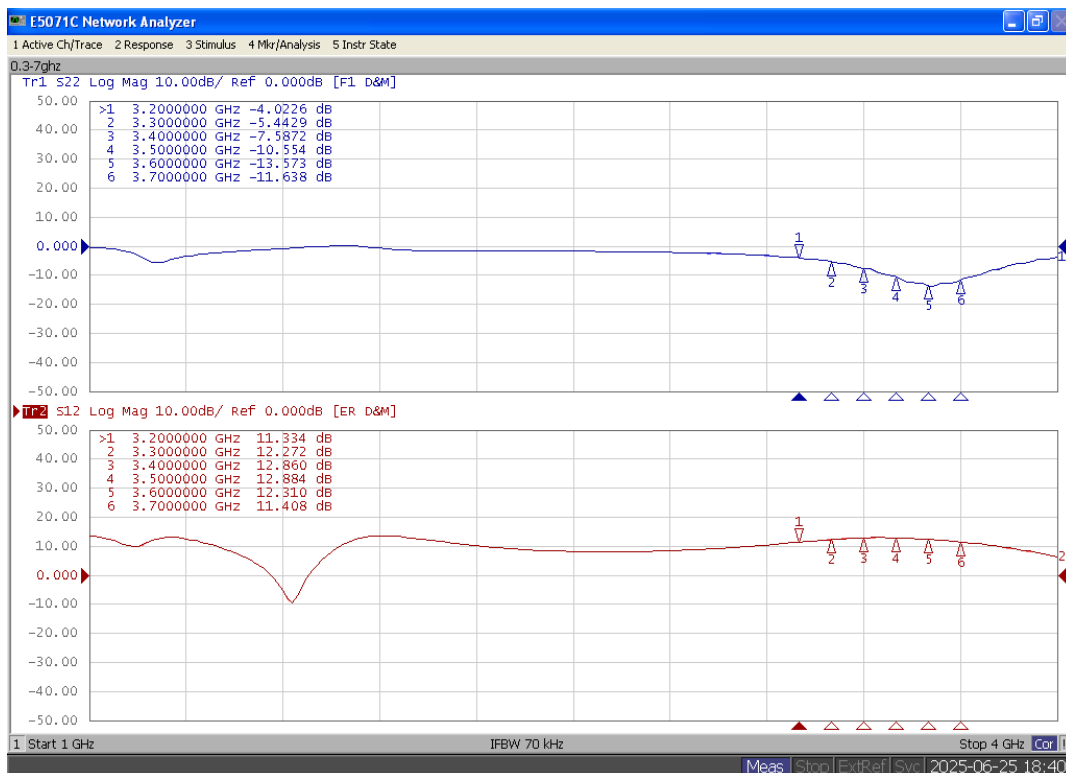
Freq (MHz)	P1dB (dBm)	P1dB (W)	P1dB Eff(%)	P1dB Gain(dB)	P3dB (dBm)	P3dB (W)	P3dB Eff(%)
3200	33.04	2.01	40.81	11.37	33.95	2.48	43.48
3300	32.97	1.98	43.53	11.04	33.86	2.43	46.04
3400	32.94	1.97	48.52	11.85	33.75	2.37	48.36
3500	32.59	1.82	46.21	12.12	33.46	2.22	48.00
3600	31.94	1.56	40.21	11.36	33.01	2.00	43.65
3700	31.75	1.50	38.60	10.21	33.20	2.09	42.89

ITEH40004P3: 3200-3700MHz



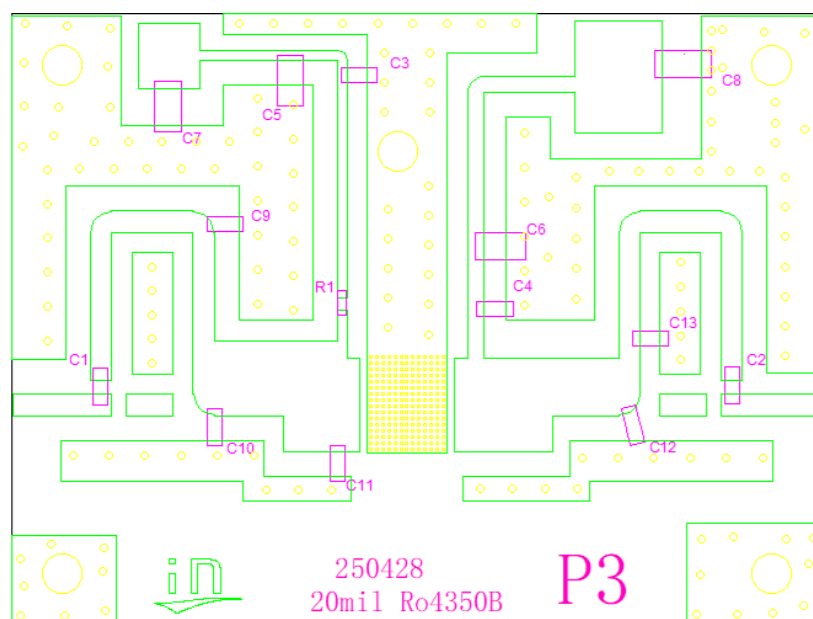
2 Network Analyzer Results(S11,S21)

$V_{DS} = 12.5V, I_{DQ} = 50Ma, V_{GS} = -2.88V$



ITEH40004P3: 3200-3700MHz

3 PCB Layout



BOM of Test Circuit

Test Board Bom				
Part	Quantity	Description	Part Number	Manufacturer
C1,C2,C3,C4	4	8.2pF High Q Capacitor	251SHS200BSE	TEMEX
C7	1	0.7pF High Q Capacitor	251SHS0R5BSE	TEMEX
C9	1	0.4pF High Q Capacitor	251SHS0R5BSE	TEMEX
C10	1	0.7pF High Q Capacitor	251SHS0R5BSE	TEMEX
C11	1	1.1pF High Q Capacitor	251SHS0R5BSE	TEMEX
C12	1	0.5pF High Q Capacitor	251SHS0R5BSE	TEMEX
C13	1	0.3pF High Q Capacitor	251SHS0R5BSE	TEMEX
C5,C6,C7,C8	1	10uF MLCC	GRM32EC72A106ME05	Murata
R1	1	10 Ω Power Resistor	ESR03EZPF100	ROHM
T1	1	LDMOS Transistor	ITEH40004P3	Innogrations