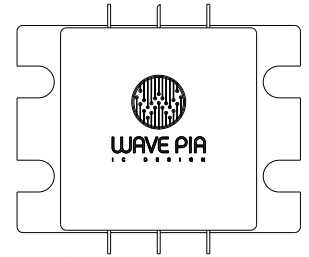


Product Features

- 50Ω Matched GaN HEMT for 3.3 to 3.7GHz
- 10.9dB Small Signal Gain
- 140W Typical P_{SAT}
- 40% Efficiency at P_{SAT}
- 48V Operation

Applications

- Broadband Amplifiers
- Cellular Infrastructure
- Test Instrumentation
- Radar Application



Package Type: One-PKG

Absolute Maximum Rating

Parameter	Symbol	Rating	Units	Conditions
Drain-Source Voltage	V_{DSS}	160	Volts	25°C
Gate-to-Source Voltage ³	V_{GS}	-10, +2	Volts	25°C
Storage Temperature ³	T_{STG}	-65, +150	°C	
Operating Junction Temperature ^{1,3}	T_J	225	°C	
Maximum Forward Gate Current ³	I_{GMAX}	30	mA	25°C
Maximum Drain Current ²	I_{DMAX}	1	A	$I_d @ V_d = 10V, V_g = 1V$
Soldering Temperature ³	T_S	245	°C	

1. Continuous use at maximum temperature will affect MTTF.
2. Current limit for long term, reliable operation.
3. After additional updates.

DC Characteristics¹ (TA=25°C)

Parameter	Symbol	MIN	TYP	MAX	Units	Conditions
Gate Threshold Voltage	$V_{GS(th)}$		-3.80		V_{DC}	$V_{DS} = 48V, I_D = 1mA$
Gate Quiescent Voltage	$V_{GS(Q)}$		-2.94		V_{DC}	$V_{DS} = 48V, I_D = 200mA$
Saturated Drain Current ¹	I_{DS}		1000		mA/mm	$V_{DS} = 10V, V_{GS} = 1V$
Drain-Source Breakdown Voltage	V_{BR}	160			V_{DC}	$I_D = 1mA/mm$

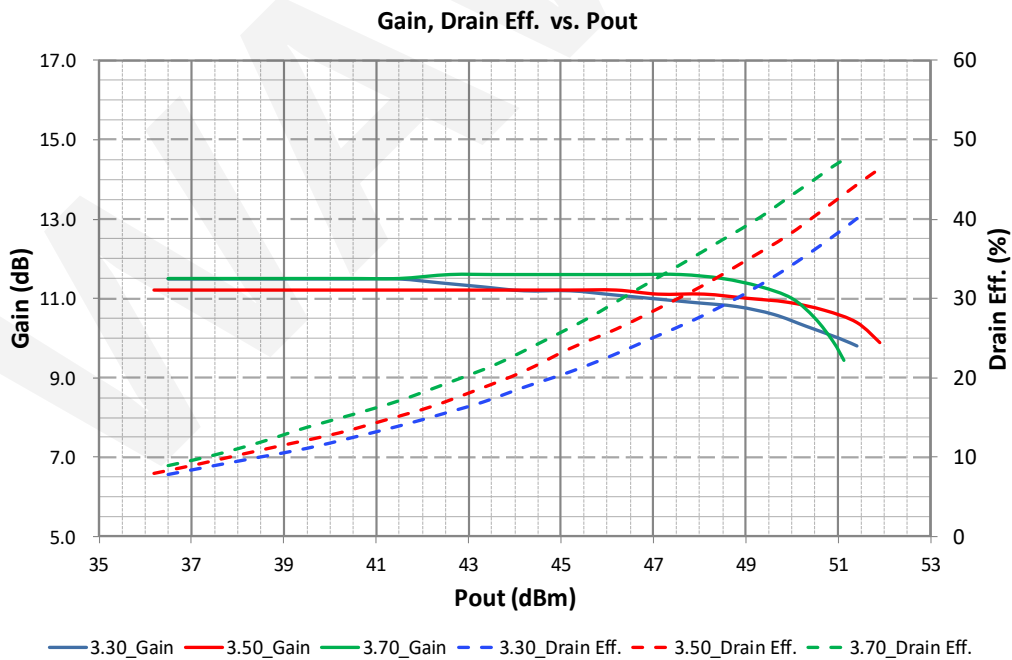
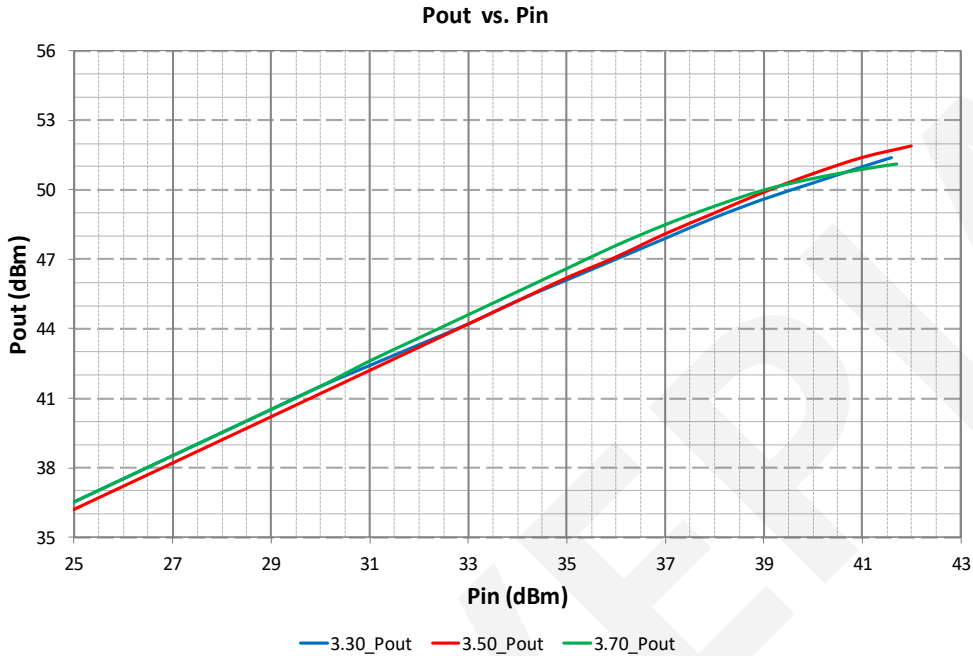
1. Scaled from PCM data.

RF Characteristics (TA = 25°C, F0 = 3.5GHz, VDD = 48V, IDQ = 200mA, unless otherwise noted)

Parameter	Symbol	MIN	TYP	MAX	Units	Conditions
P_{SAT} Gain	G_{PSAT}		9.9		dB	Pulse Width = 100μsec, Duty Cycle = 10%
Saturated Output Power	P_{SAT}		51.9		dBm	Pulse Width = 100μsec, Duty Cycle = 10%
Drain Efficiency ¹	η		46.2		%	Pulse Width = 100μsec, Duty Cycle = 10% @ P_{SAT}

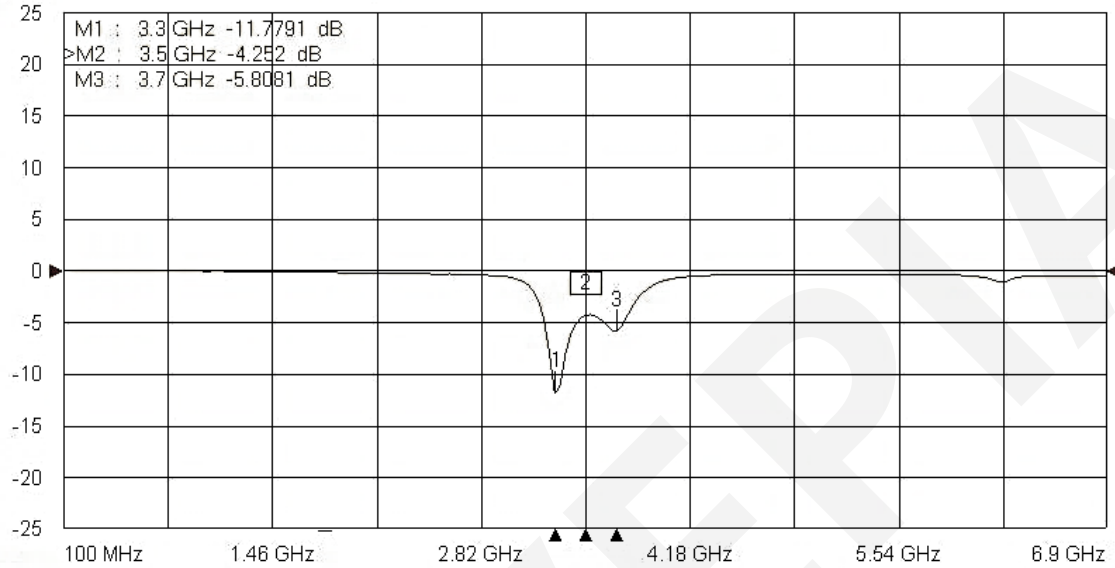
1. Drain Efficiency = P_{OUT} / P_{DC}

Pulse Signal Performance (TA=25°C, Measured in the test board amplifier circuit)
 VDD = 48V, IDQ = 200mA, Pulse Width = 100µsec. Duty Cycle = 10%

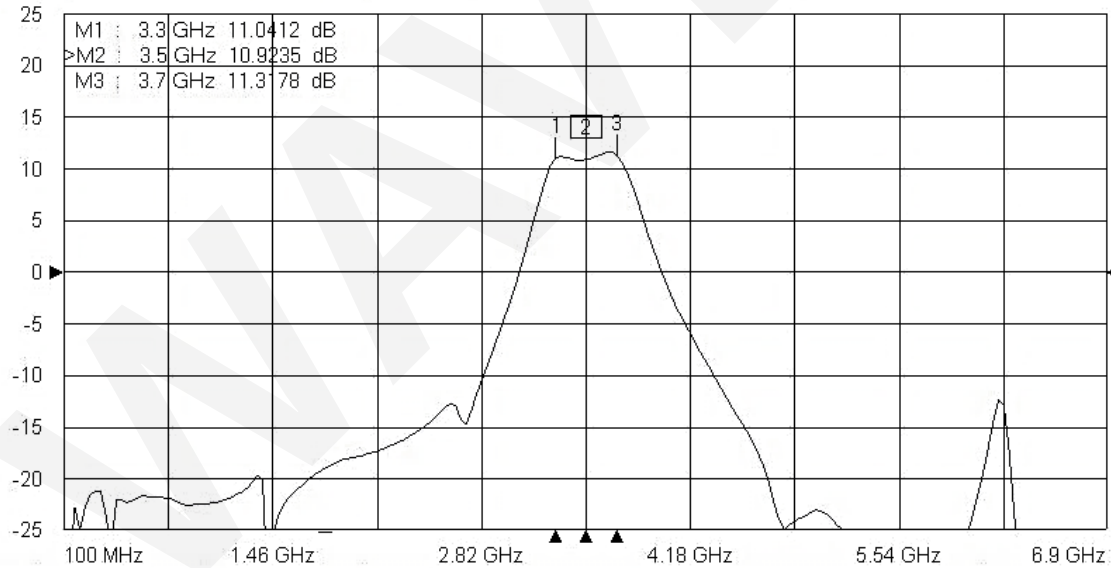


Small Signal Performance (Ta=25°C, Measured in the test board amplifier circuit)
 VDD = 48V, IDQ = 200mA

Tr1 S11 Refl LogM RefLvl: 0 dB Res: 5 dB/Div

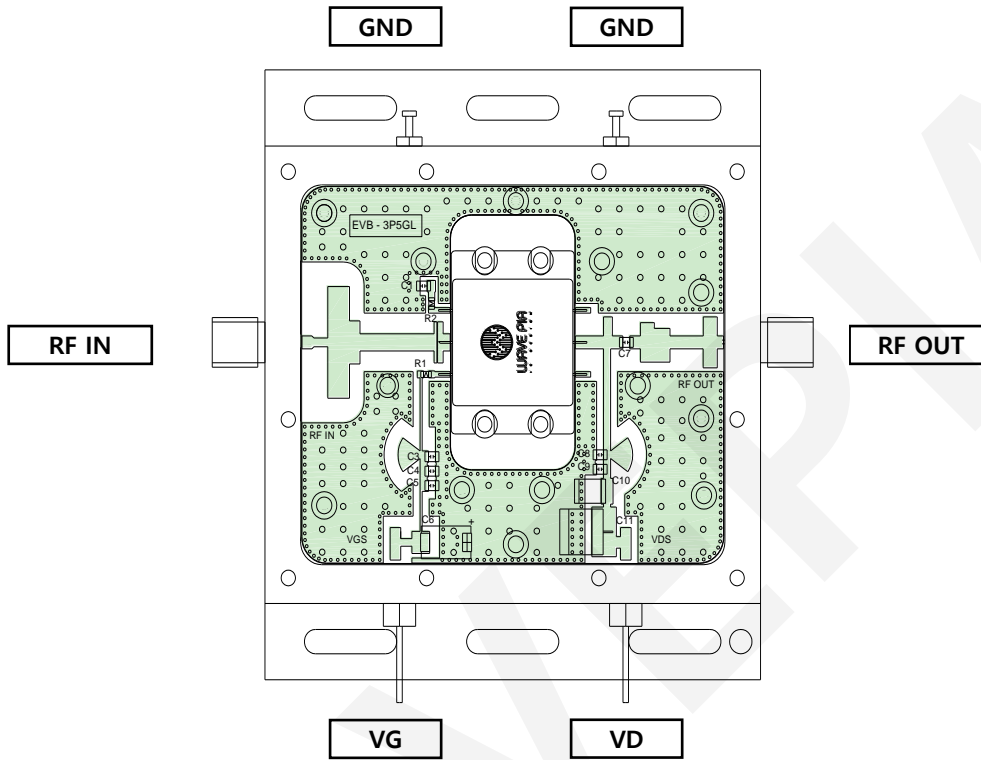


Tr3 S21 Trans LogM RefLvl: 0 dB Res: 5 dB/Div



Frequency	S11	S21
3.3GHz	-11.7dB	11.0dB
3.5GHz	-4.2dB	10.9dB
3.7GHz	-5.8dB	11.3dB

Evaluation Board



Reference	Part Number	Value	Description	Package	Manufacturer	EA
C1,C3,C8	251R15S100JV4S	10pF	High Q Capacitor	2012	Johanson	3
C7	251R15S5R6BV3E	5.6pF	High Q Capacitor	2012	Johanson	1
C4	CL21C101JBCNNNC	100pF	Ceramic Capacitor	2012	SAMSUNG	1
C5	CL21C104JBCNNNC	100nF	Ceramic Capacitor	2012	SAMSUNG	1
C6	293D476X9016D2TE3	47uF	Tantalium Capacitor	7343	Vishay	1
C9	251R15S101JV4S	100pF	High Q Capacitor	2012	Johanson	1
C10	251S43W474KV4E	470nF	High V Capacitor	4532	Johanson	1
C11	597D106X9075R2T	10uF	Tantalium Capacitor	7360	Vishay	1
R1,R2	C1608J100CS	10Ω	Chip Resistor	1608	SAMSUNG	2
Transistor	WP483P50140MH			One-PKG	WAVEPIA	1
PCB	RO4350B 30mil 1oz				Rogers	

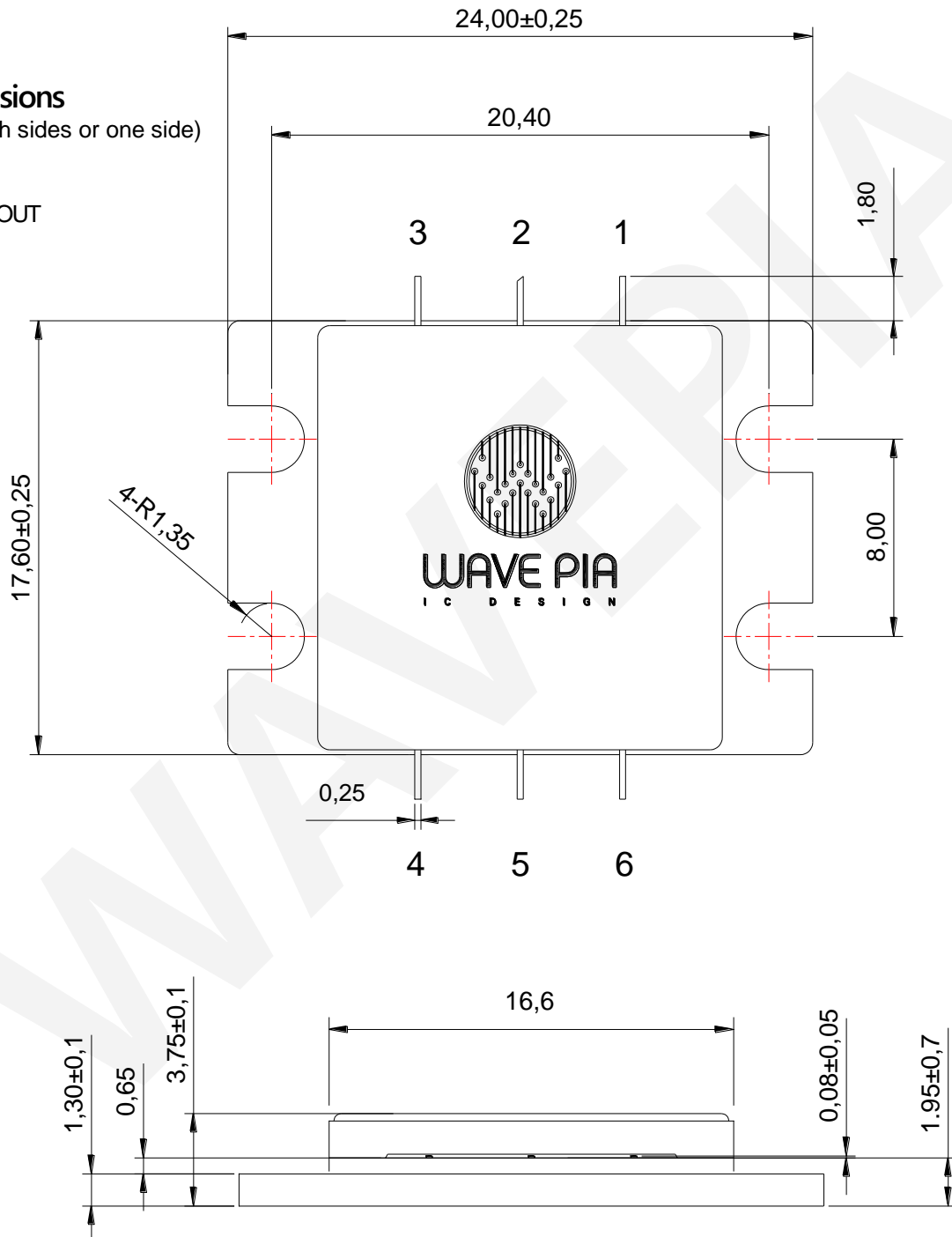


Product Dimension

- Package Type: One-PKG
- Unit: mm

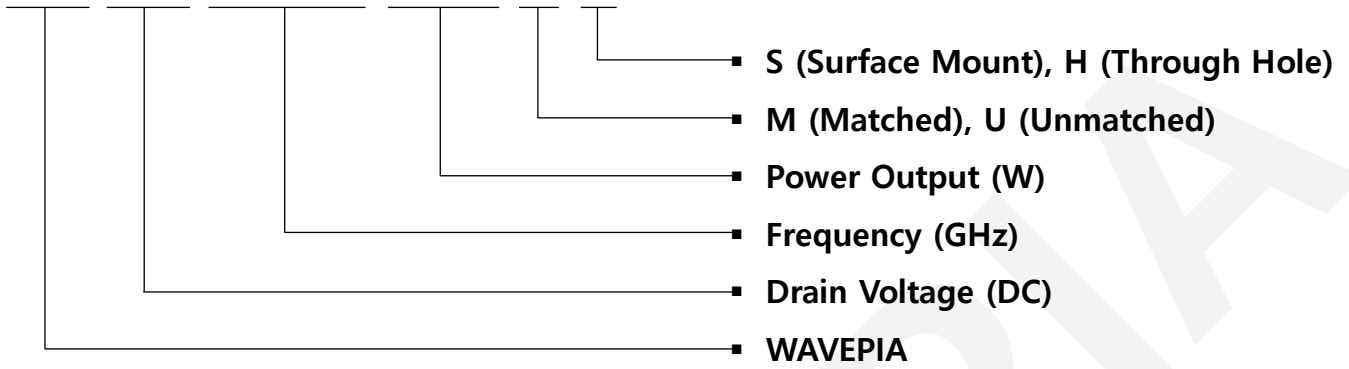
Pin Dimensions

- 1,3 : VG (both sides or one side)
- 2 : RF IN
- 4,6 : NC
- 5 : VD/RFOUT



Part Number System

W P 4 8 3 P 5 0 1 4 0 M H



Parameter	Value	Units
Drain Voltage	48	V
Lower Frequency	3.3	GHz
Upper Frequency	3.7	GHz
Output Power	140	W
Transistor Type	Matched	-
Package	Through Hole	-