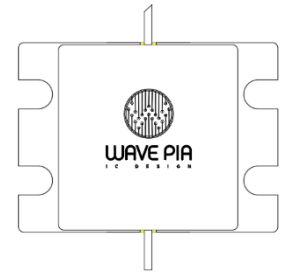


Product Features

- 50Ω Matched GaN HEMT for 1.03 to 1.09GHz
- 17.8 dB Small Signal Gain at 1.06 GHz
- 260W Typical P_{SAT}
- 58.5% Efficiency at 1.03 GHz
- 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	$V_{GS(th)}$		-3.4		V_{DC}	$V_{DS} = 48V, I_D = 1mA$
Gate Quiescent Voltage	$V_{GS(Q)}$		-2.96		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 = 1.06GHz, VDD = 48V, IDQ = 200mA, unless otherwise noted)

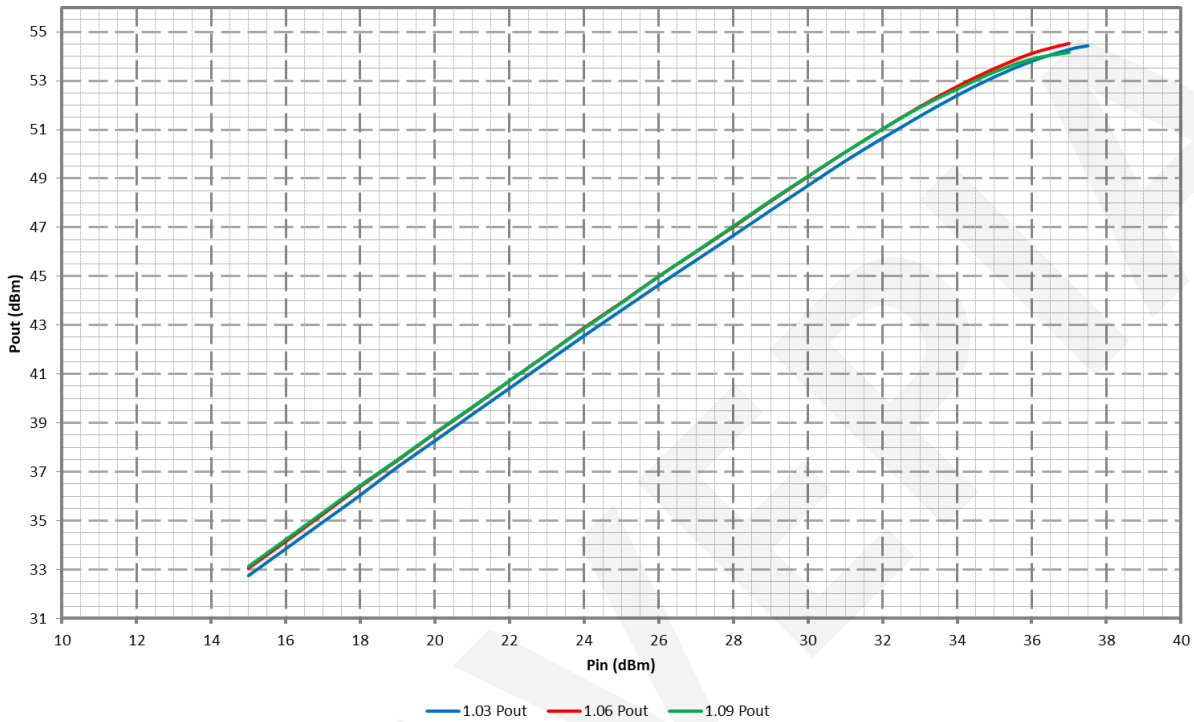
Parameter	Symbol	MIN	TYP	MAX	Units	Conditions
P_{SAT} Gain	G_{PSAT}		17.53		dB	Pulse Width = 100µsec, Duty Cycle = 10%
Saturated Output Power	P_{SAT}		54.53		dBm	Pulse Width = 100µsec, Duty Cycle = 10%
Drain Efficiency ¹	η		62.76		%	Pulse Width = 100µsec, Duty Cycle = 10% @ P_{SAT}

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

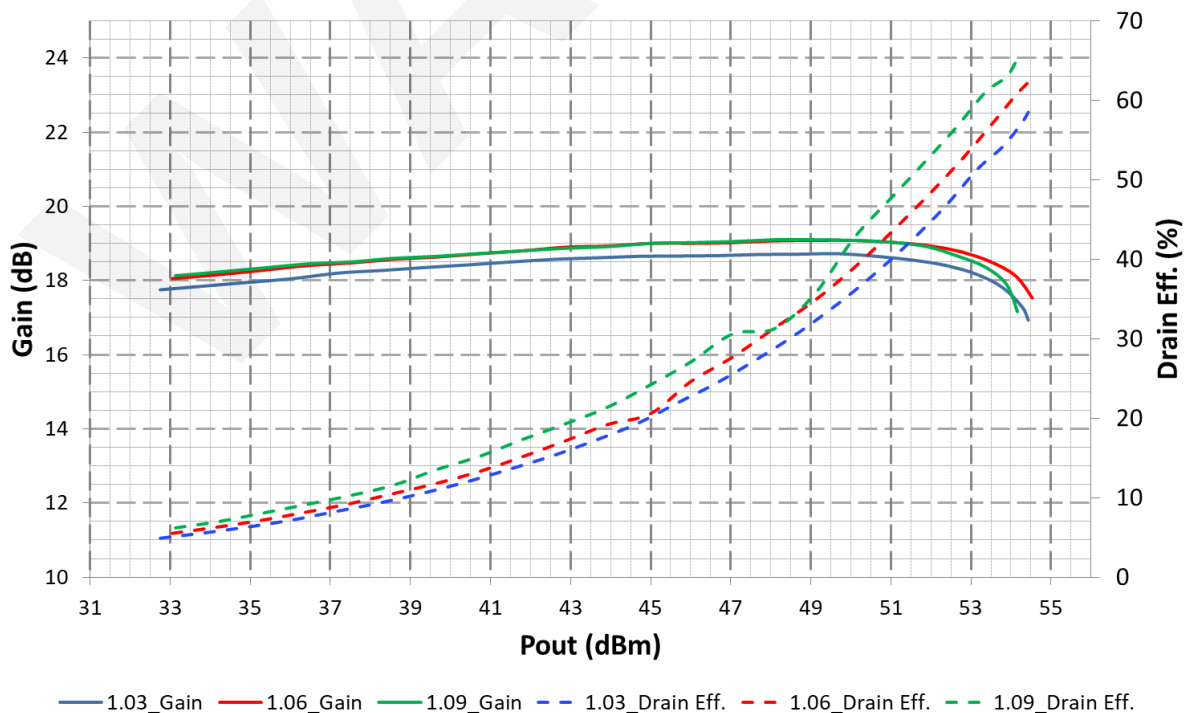
Pulse Signal Performance (TA=25°C, Measured in the test board amplifier circuit)

VDD = 48V, IDQ = 200mA, Pulse Width = 100µsec, Duty Cycle = 10%

Pout vs. Pin

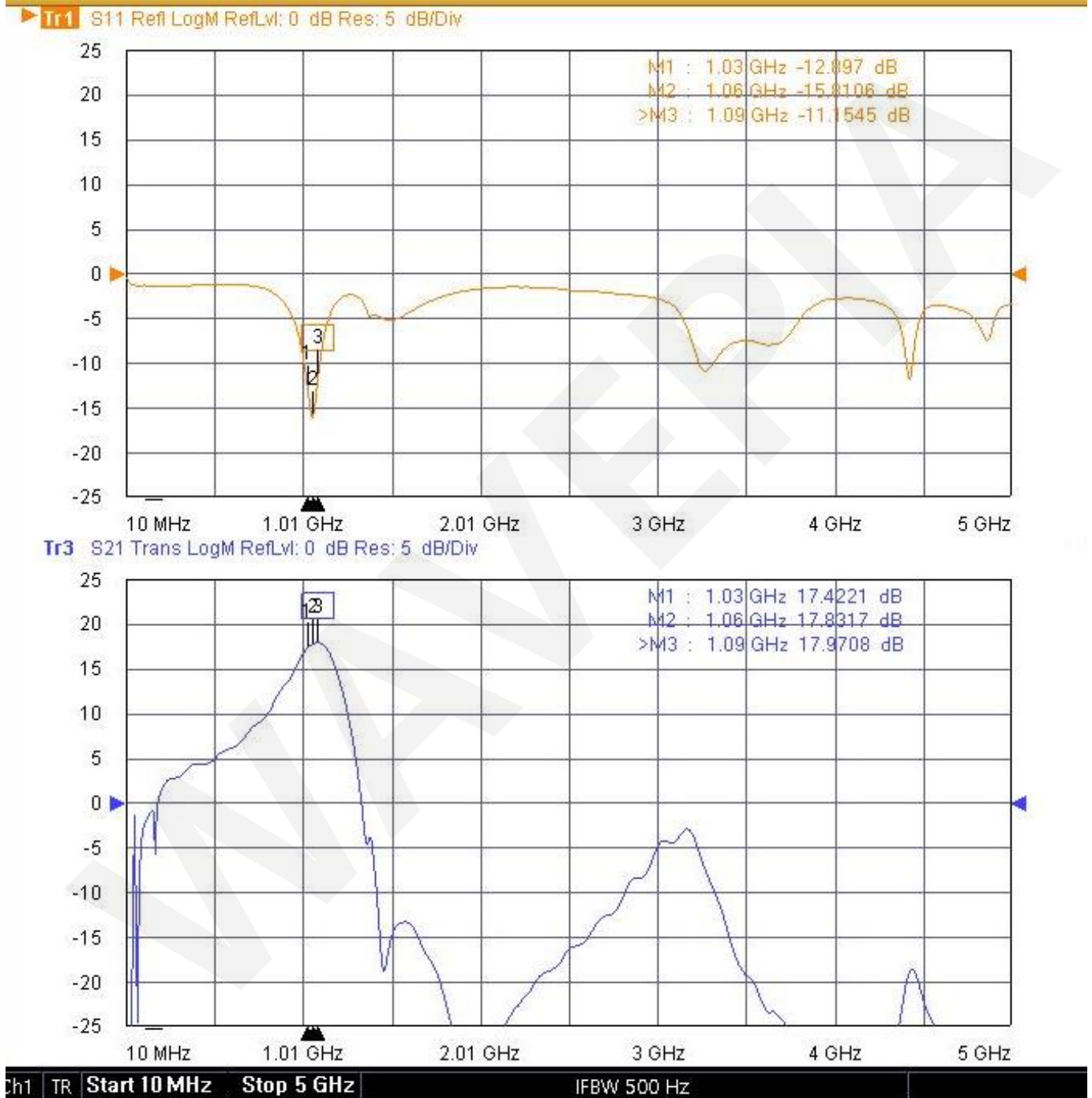


Gain, Drain Eff. vs. Pout

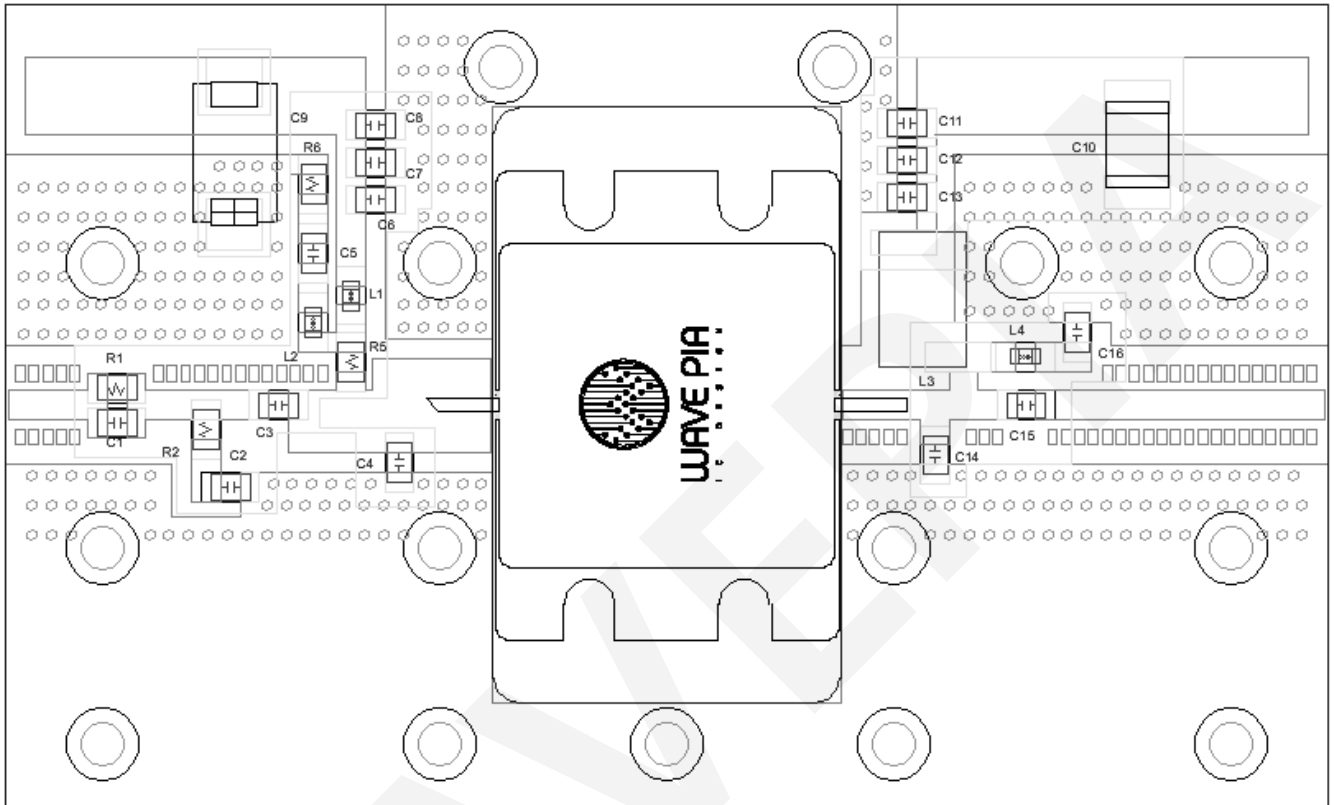


Small Signal Performance (TA=25°C, Measured in the test board amplifier circuit)

VDD = 48V, IDQ = 200mA



Evaluation Board

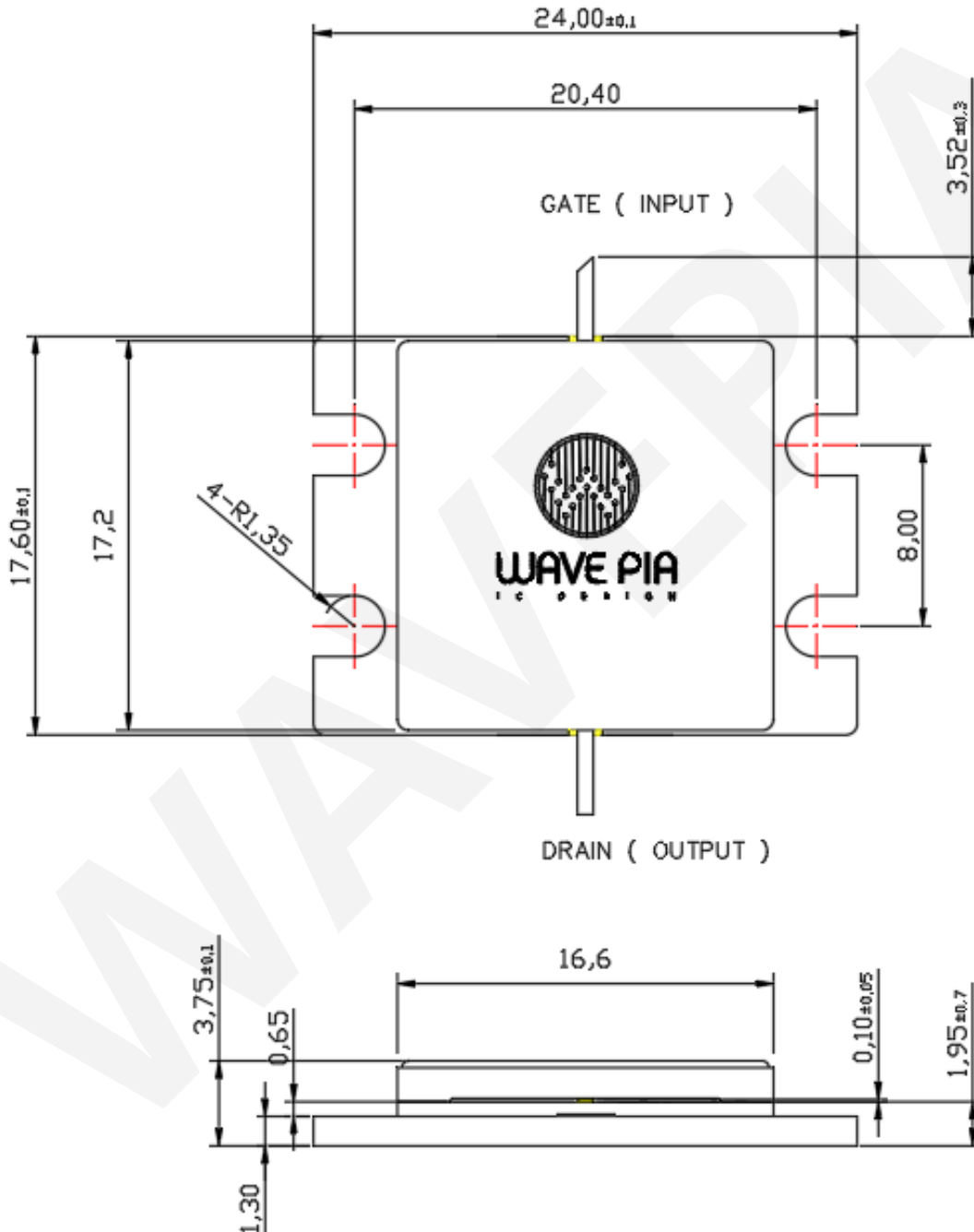


Reference	Value	Description	Package	Manufacturer
C1,C2,C12	10pF	High Q Capacitor	2012	Johanson
C13,C16	100pF	High Q Capacitor	2012	Johanson
C3	8.2pF	High Q Capacitor	2012	Johanson
C4	1pF	High Q Capacitor	2012	Johanson
C5,C6	100pF	Ceramic Capacitor	2012	SAMSUNG
C7	10nF	Ceramic Capacitor	2012	SAMSUNG
C8	1uF	Ceramic Capacitor	2012	SAMSUNG
C11	220pF	High Q Capacitor	2012	Johanson
C14,C15	6.2pF	High Q Capacitor	2012	Johanson
C10	470nF	High V Capacitor	4532	Johanson
C9	47uF	Tantalium Capacitor	D-type	Vishay
L1,L2,L4	47nH	Core Inductor	2010	Coilcraft
L3	28nH	Air Core Inductor	B08T	Coilcraft
R1,R2	300Ω	Chip Resistor	2012	SAMSUNG
R5	10Ω	Chip Resistor	2012	SAMSUNG
R6	50Ω	Chip Resistor	2012	SAMSUNG
PCB		FR-4 0.8T 1oz		



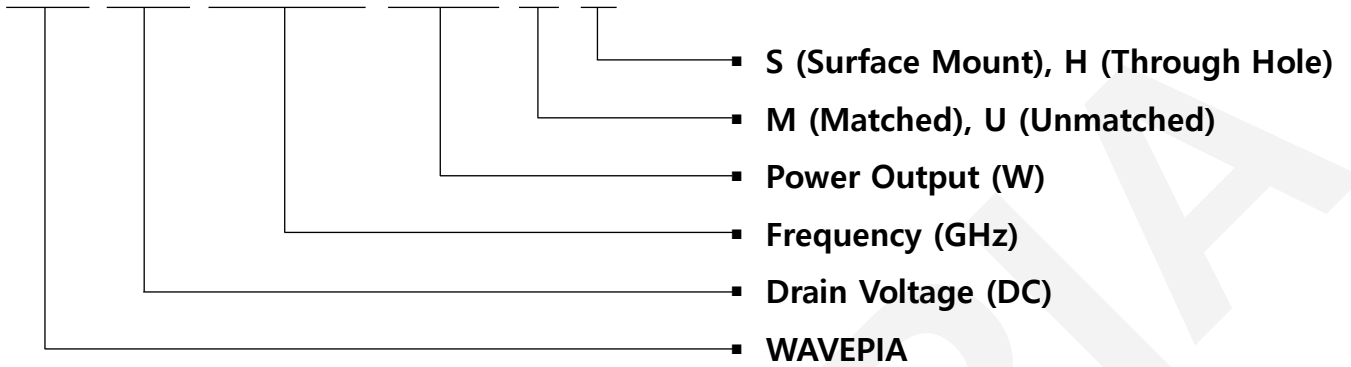
Product Dimension

- Package Type: One-PKG
- Unit: mm



Part Number System

W P 4 8 1 P 0 6 2 0 0 M H



Parameter	Value	Units
Drain Voltage	48	V
Lower Frequency	1.03	GHz
Upper Frequency	1.09	GHz
Output Power	200	W
Transistor Type	Matched	-
Package	Through Hole	-