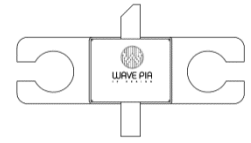


Product Features

- Up to 6GHz Operation
- 19.6dB Small Signal Gain at 2.45GHz
- 45.3dBm Typical P_{SAT} at 2.45GHz
- 68.5% Efficiency at P_{SAT} at 2.45GHz
- 48V Operation

Applications

- Broadband Amplifiers
- Cellular Infrastructure
- Test Instrumentation
- WiMAX, LTE, WCDMA, GSM
- Radar Application



Package Type: 360BH

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 ($T_a=25^\circ\text{C}$)

Parameter	Symbol	MIN	TYP	MAX	Units	Conditions
Gate Threshold Voltage	$V_{GS(th)}$		-3.5		V_{DC}	$V_{DS} = 10V, I_D = 1mA$
Gate Quiescent Voltage	$V_{GS(Q)}$		-2.64		V_{DC}	$V_{DS} = 48V, I_D = 100mA$
Saturated Drain Current ²	I_{DS}		1000		mA/mm	$V_{DS} = 10V, V_{GS} = 1V$
Drain-Source Breakdown Voltage	V_{BR}	160			V_{DC}	$I_D = 1 mA/mm$

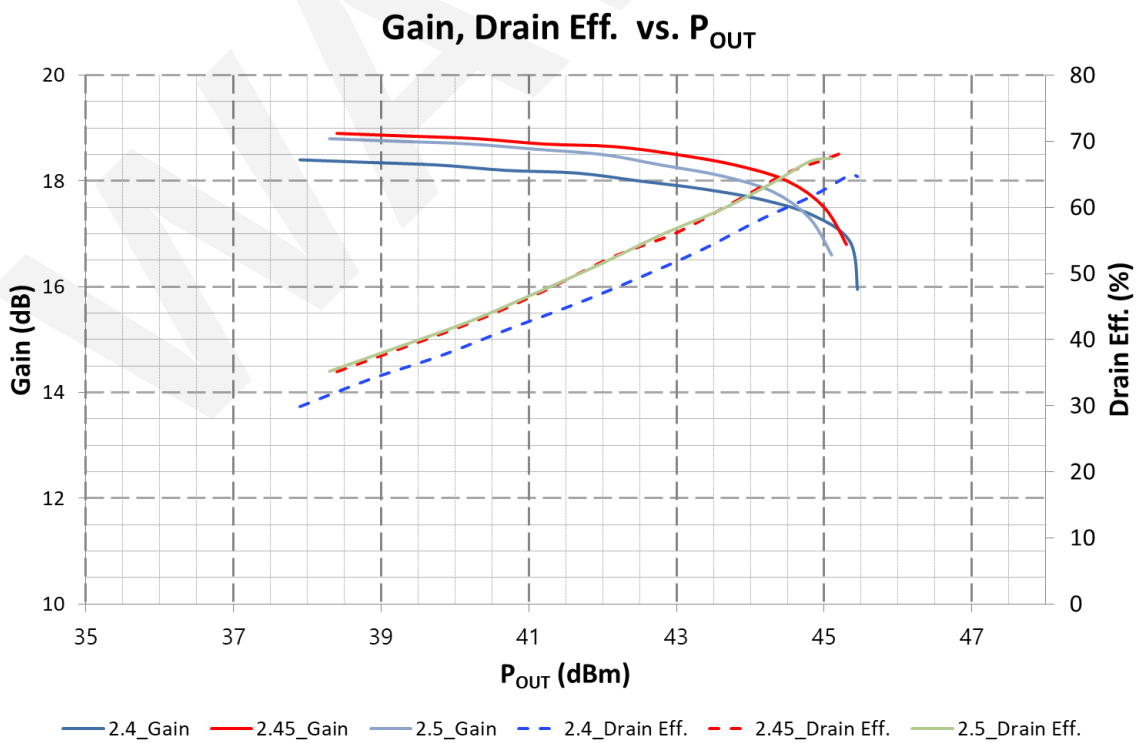
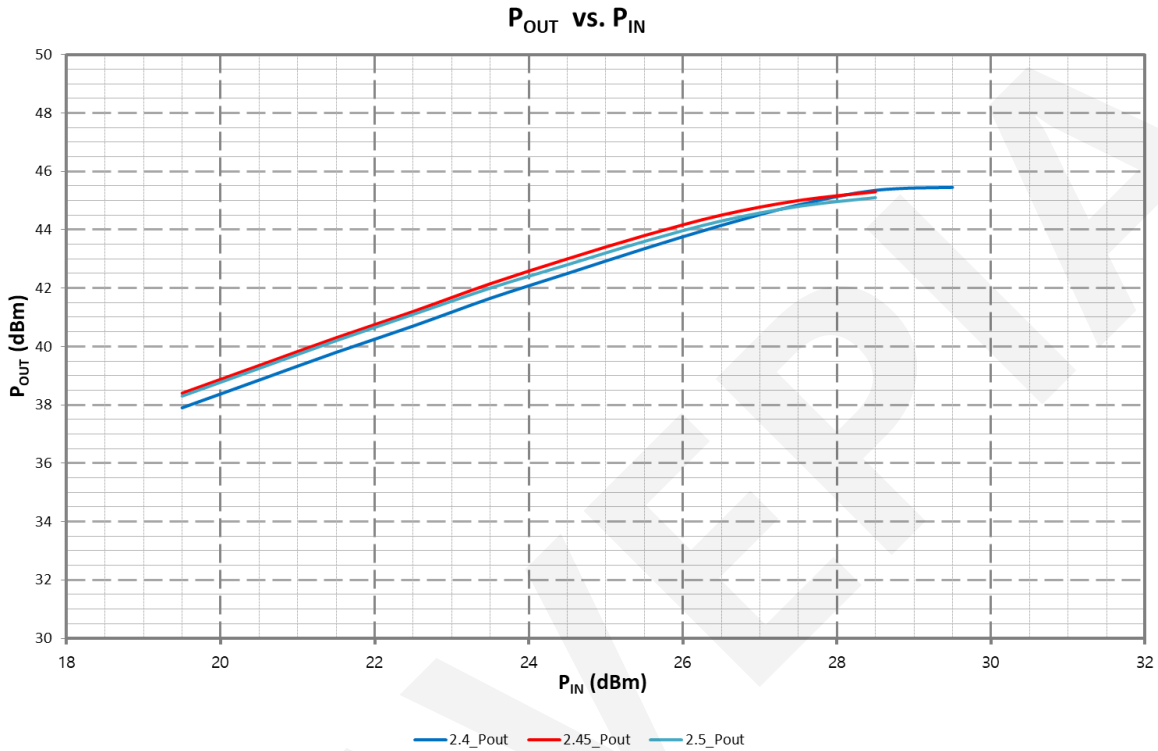
1. Measured on wafer prior to packaging.
2. Scaled from PCM data.

RF Characteristics ($T_a=25^\circ\text{C}$, $F_0=2.45\text{GHz}$, Unless otherwise noted)

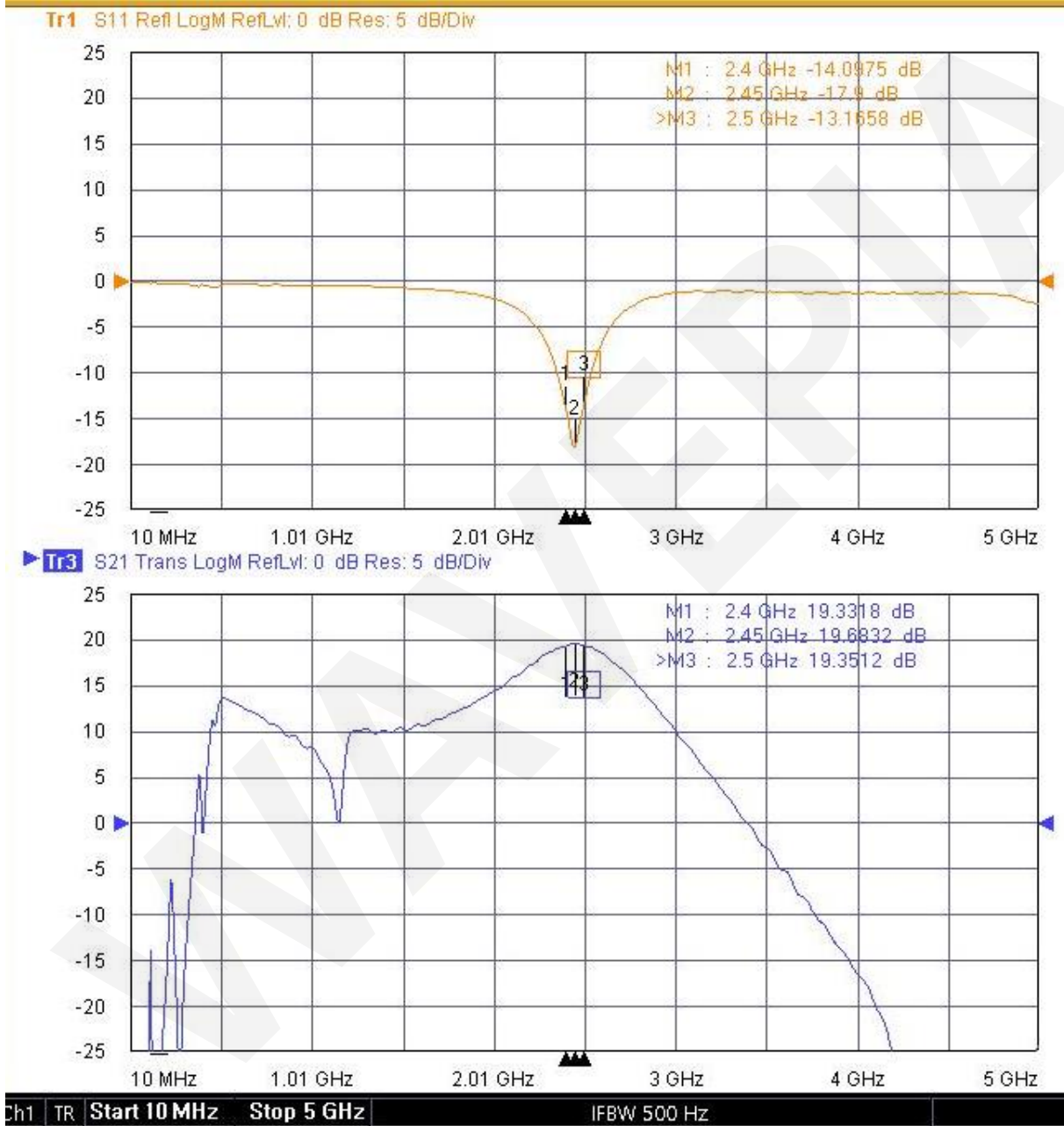
Parameter	Symbol	MIN	TYP	MAX	Units	Conditions
Gain	G_{SS}		18.9		dB	$V_{DD} = 48V, I_{DQ} = 100mA, \text{Pulse Width} = 100\mu\text{sec}, \text{Duty Cycle} = 10\%$
Saturated Output Power	P_{SAT}		45.3		dBm	$V_{DD} = 48V, I_{DQ} = 100mA, \text{Pulse Width} = 100\mu\text{sec}, \text{Duty Cycle} = 10\%$
Pulsed Drain Efficiency ¹	η		68.5		%	$V_{DD} = 48V, I_{DQ} = 100mA, \text{Pulse Width} = 100\mu\text{sec}, \text{Duty Cycle} = 10\% @ P_{SAT}$

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

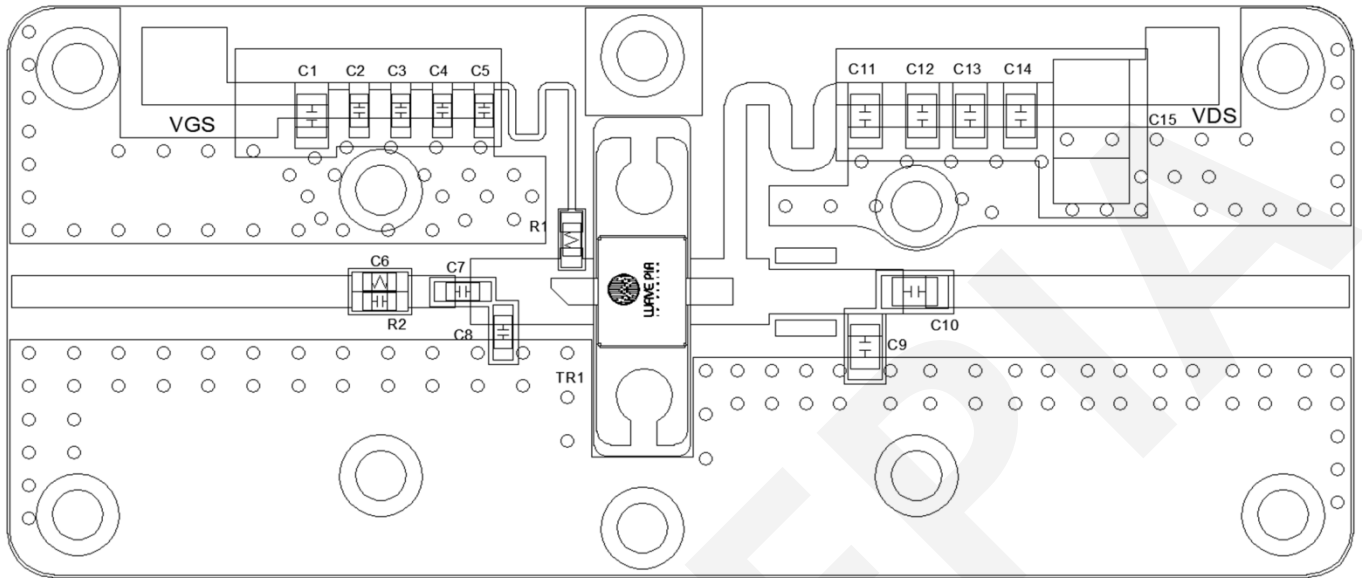
Pulse Signal Performance (Ta=25°C, Measured in the test board amplifier circuit)
 VDD=48V, IDQ=100mA, Pulse Width=100μsec, Duty Cycle=10%



Small Signal Performance (Ta=25°C, Measured in the test board amplifier circuit)
 VDD=48V, IDQ=100mA



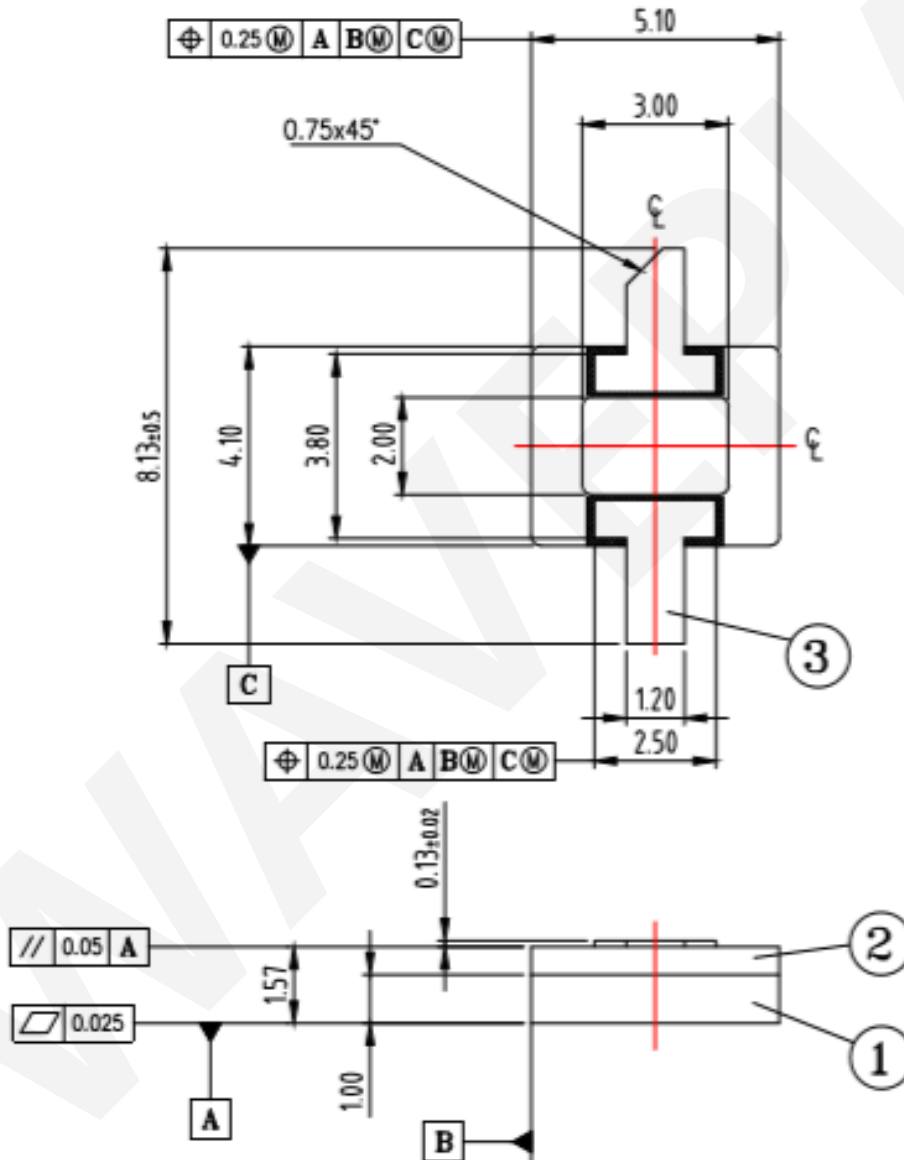
Evaluation Board



Reference Number	Value	Items	Package	Manufacturer
C2,C4	100pF	Ceramic Capacitor	1608	SAMSUNG
C3,C5	10pF	Ceramic Capacitor	1608	SAMSUNG
C1	1uF	Ceramic Capacitor	2012	SAMSUNG
C6,C11,C13	10pF	High Q Capacitor	2012	Johanson
C7	1.0pF	High Q Capacitor	2012	Johanson
C8	1.5pF	High Q Capacitor	2012	Johanson
C9	1.2pF	High Q Capacitor	2012	Johanson
C10	4.3pF	High Q Capacitor	2012	Johanson
C11,C13	10pF	High Q Capacitor	2012	Johanson
C12,C14	100pF	High Q Capacitor	2012	Johanson
C14	470nF	High V Capacitor	4532	Johanson
R1	10Ω	Chip Resistor	1608	SAMSUNG
R2	100Ω	Chip Resistor	1608	SAMSUNG
TR1			360BH	WAVEPIA
PCB	FR-4 0.8T 1oz	PCB		Any vendor

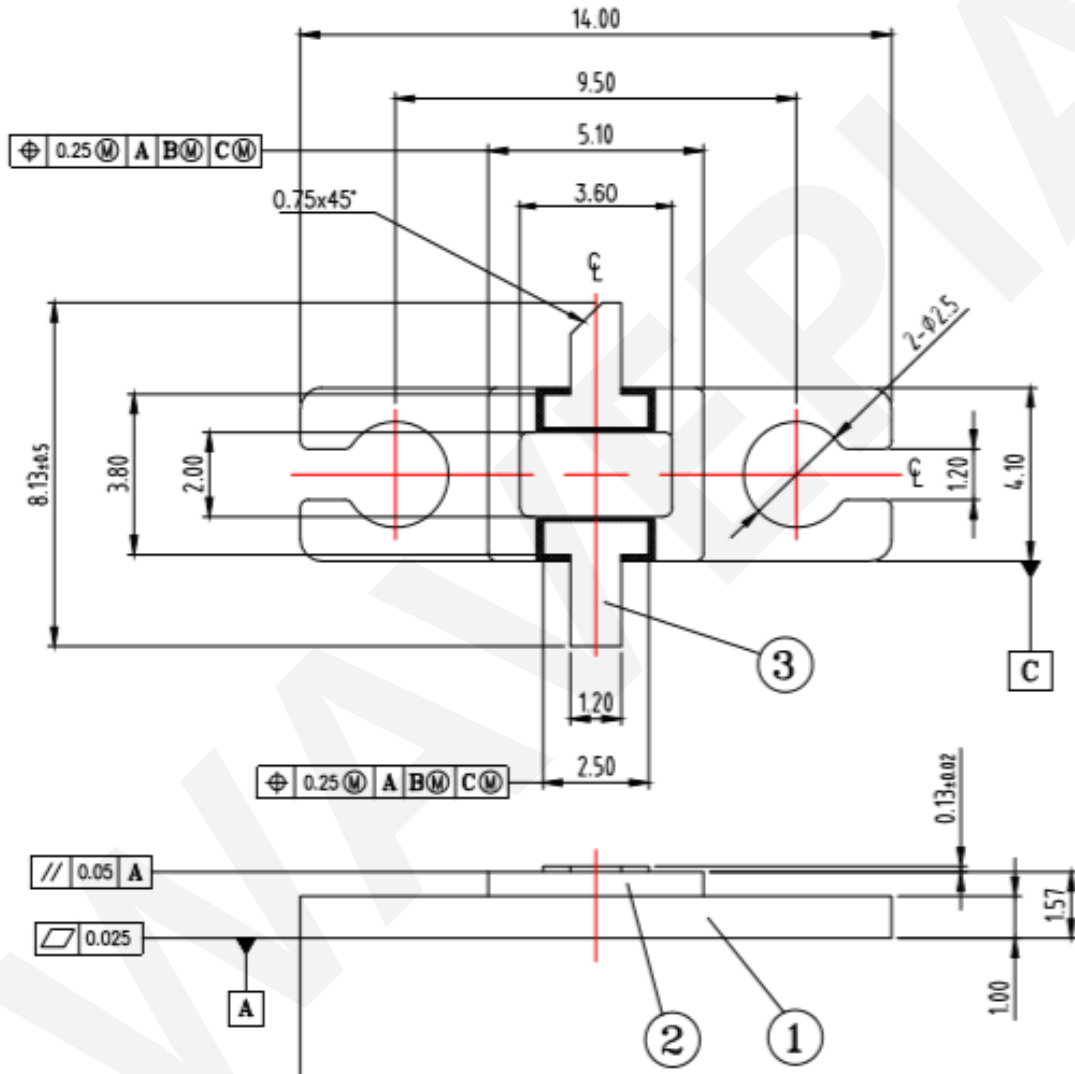
Product Dimension

- Package Type: 360BS (Surface mount)
- Unit: mm



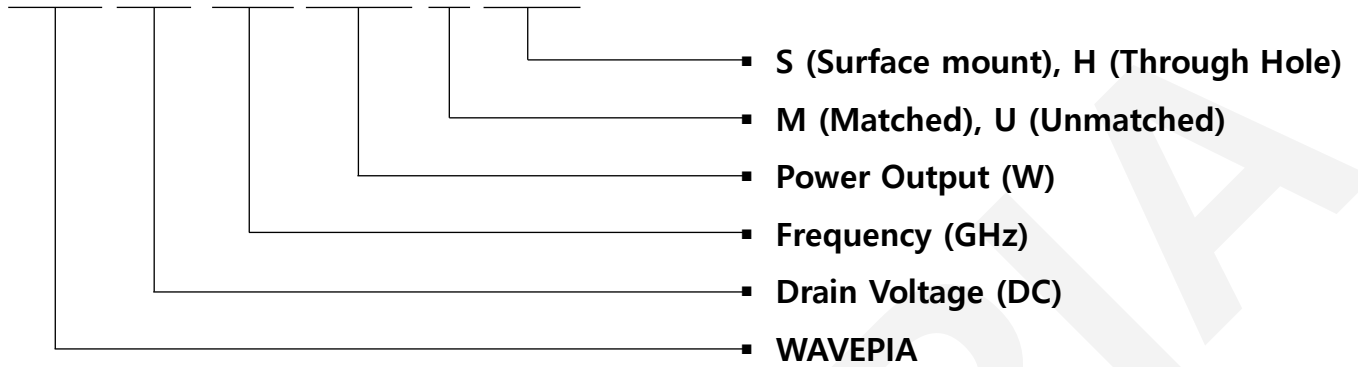
Product Dimension

- Package Type: 360BH (Through hole)
- Unit: mm



Part Number System

W P 4 8 0 6 0 2 5 U H/S



Parameter	Value	Units
Drain Voltage	48	V
Lower Frequency	DC	GHz
Upper Frequency	6	GHz
Output Power	25	W
Transistor Type	Unmatched	-
Package	S: Surface mount H: Through hole	-