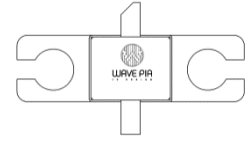


### Product Features

- Up to 6GHz operation
- 17.4dB Small Signal Gain at 2.45GHz
- 45.4dBm Typical  $P_{SAT}$  at 2.45GHz
- 78.3% Efficiency at  $P_{SAT}$  at 2.45GHz
- 28V 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 <sup>3</sup>	$V_{GS}$	-10, +2	Volts	25°C
Storage Temperature <sup>3</sup>	$T_{STG}$	-65, +150	°C	
Operating Junction Temperature <sup>1,3</sup>	$T_J$	225	°C	
Maximum Forward Gate Current <sup>3</sup>	$I_{GMAX}$	30	mA	25°C
Maximum Drain Current <sup>2</sup>	$I_{DMAX}$	1	A	$I_d @ V_d = 10V, V_g = 1V$
Soldering Temperature <sup>3</sup>	$T_S$	245	°C	

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

### DC Characteristics<sup>1</sup> ( $T_a=25^\circ\text{C}$ )

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	$V_{GS(Q)}$		-2.283		$V_{DC}$	$V_{DS} = 28V, I_D = 100mA$
Saturated Drain Current <sup>2</sup>	$I_{DS}$		1000		mA/mm	$V_{DS} = 10V, V_{GS} = 1V$
Drain-Source Breakdown Voltage	$V_{BR}$	160			$V_{DC}$	$I_D = 1 mA/mm$

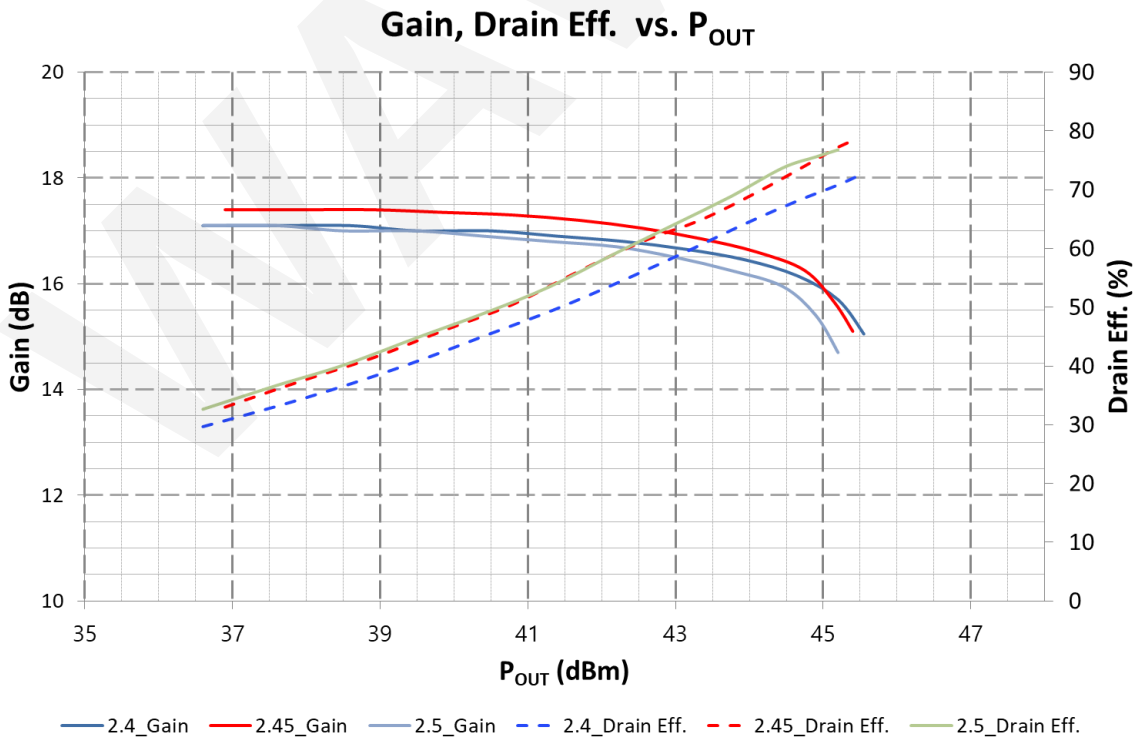
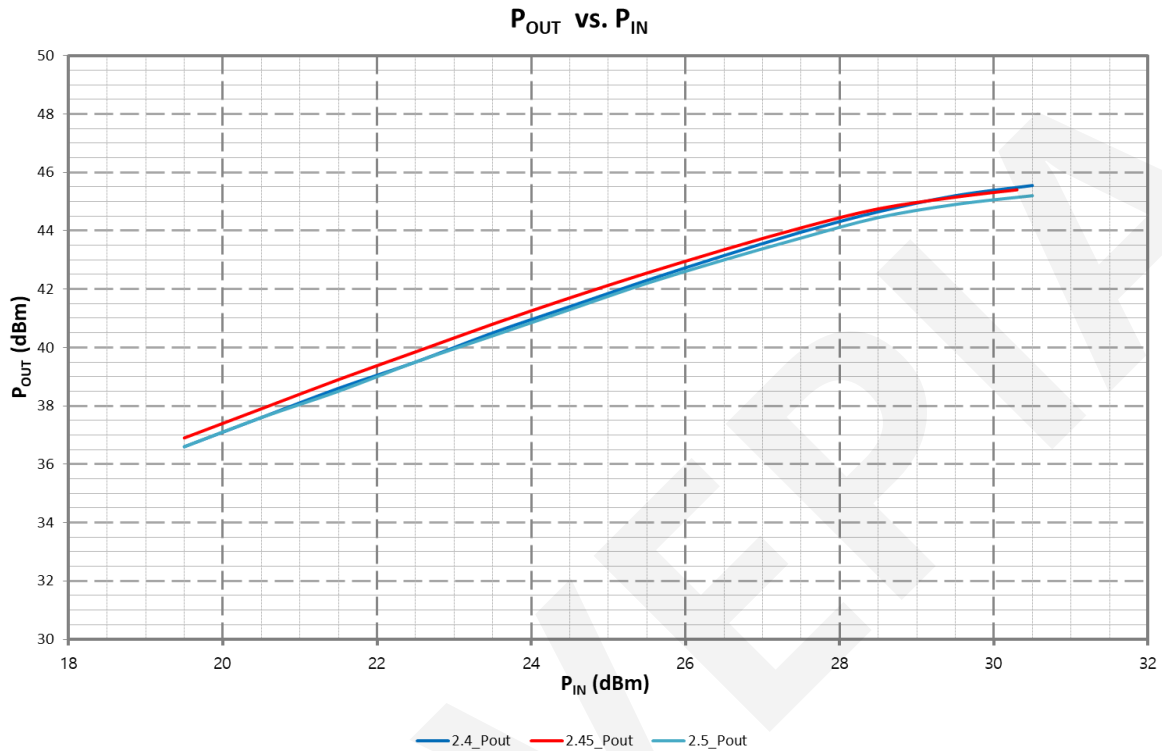
1. Measured on wafer prior to packaging.
2. Scaled from PCM data.

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

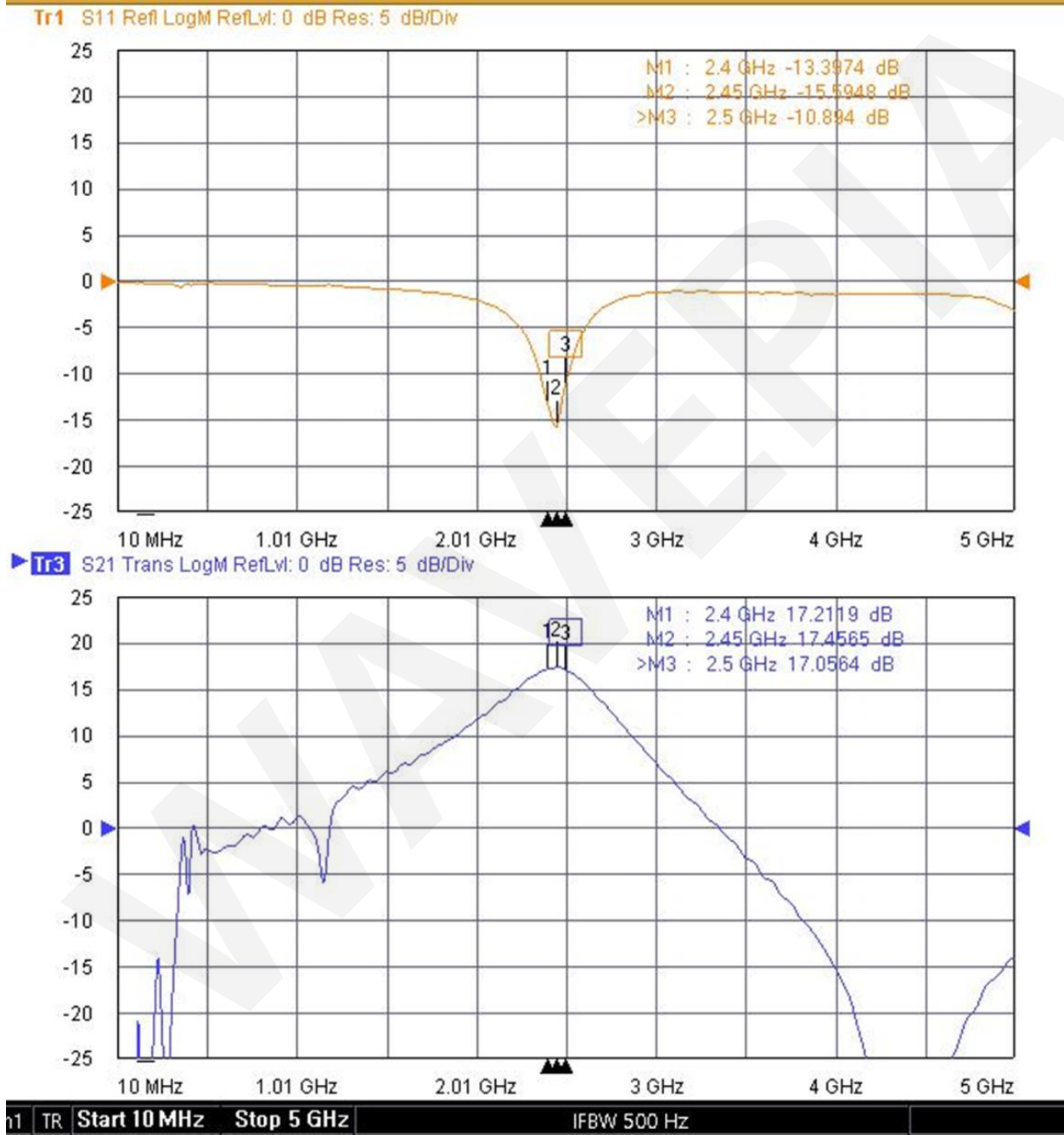
Parameter	Symbol	MIN	TYP	MAX	Units	Conditions
Gain	$G_{SS}$		17.4		dB	$V_{DD} = 28V, I_{DQ} = 100mA, \text{Pulse Width} = 100\mu\text{sec}, \text{Duty Cycle} = 10\%$
Saturated Output Power	$P_{SAT}$		45.4		dBm	$V_{DD} = 28V, I_{DQ} = 100mA, \text{Pulse Width} = 100\mu\text{sec}, \text{Duty Cycle} = 10\%$
Pulsed Drain Efficiency <sup>1</sup>	$\eta$		78.3		%	$V_{DD} = 28V, I_{DQ} = 100mA, \text{Pulse Width} = 100\mu\text{sec}, \text{Duty Cycle} = 10\% @ P_{SAT}$

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

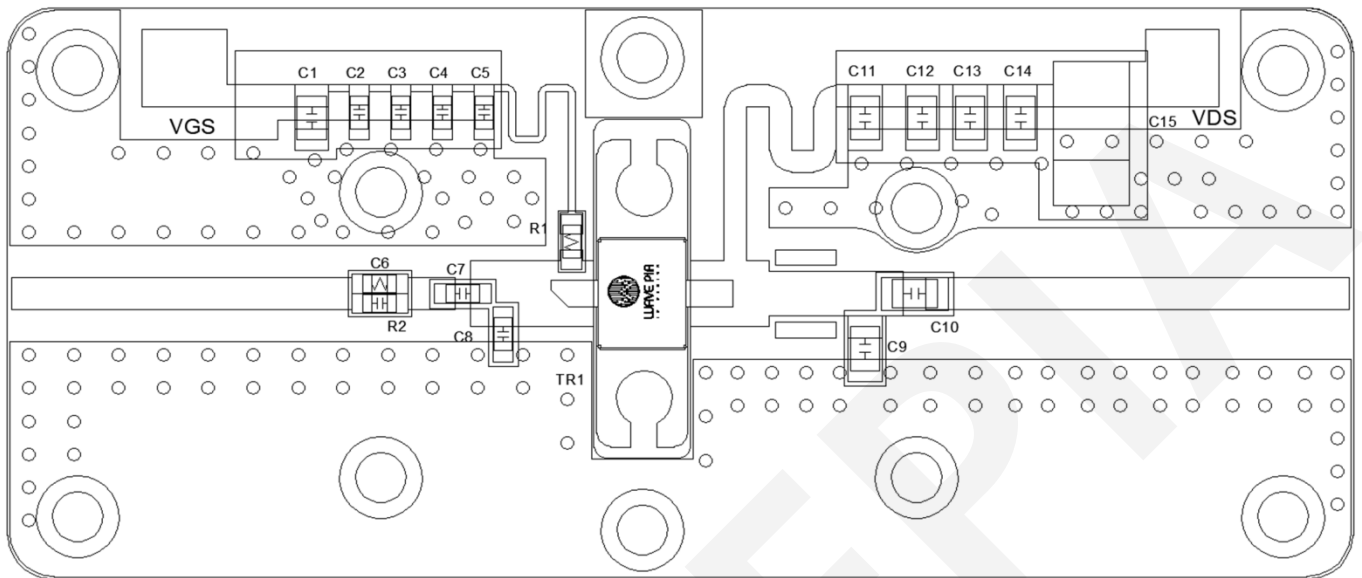
**Pulse Signal Performance (Ta=25°C, Measured in the test board amplifier circuit)**  
 VDD=28V, IDQ=100mA, Pulse Width=100μsec, Duty Cycle=10%



**Small Signal Performance (Ta=25°C, Measured in the test board amplifier circuit)**  
 VDD=28V, IDQ=100mA



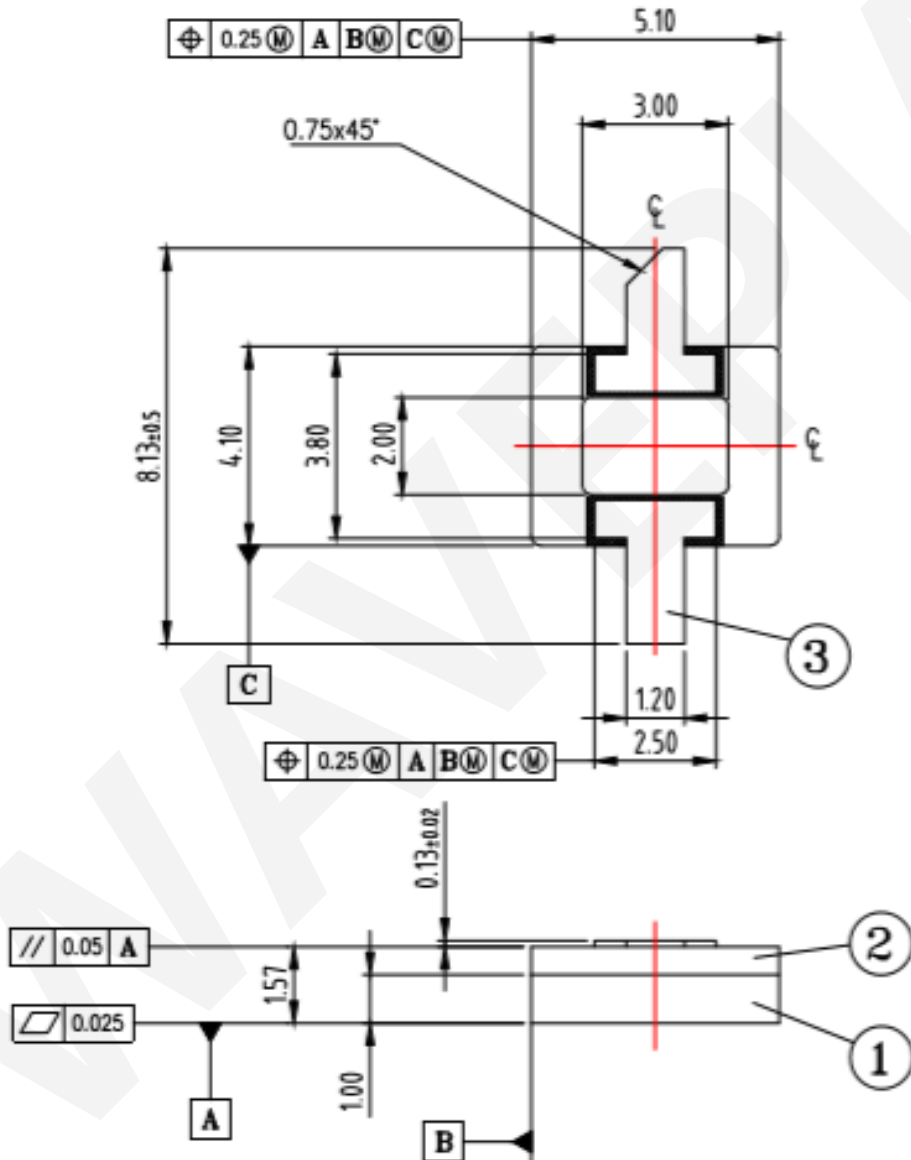
### Evaluation Board



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,C10	1.8pF	High Q Capacitor	2012	Johanson
C9	0.5pF	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
C2,C4	100pF	Ceramic Capacitor	1608	SAMSUNG
R1	10Ω	Chip Resistor	1608	SAMSUNG
R2	100Ω	Chip Resistor	1608	SAMSUNG
TR1			360BH	WAVEPIA
PCB	FR-4 0.8T 1oz	PCB		Any vendor

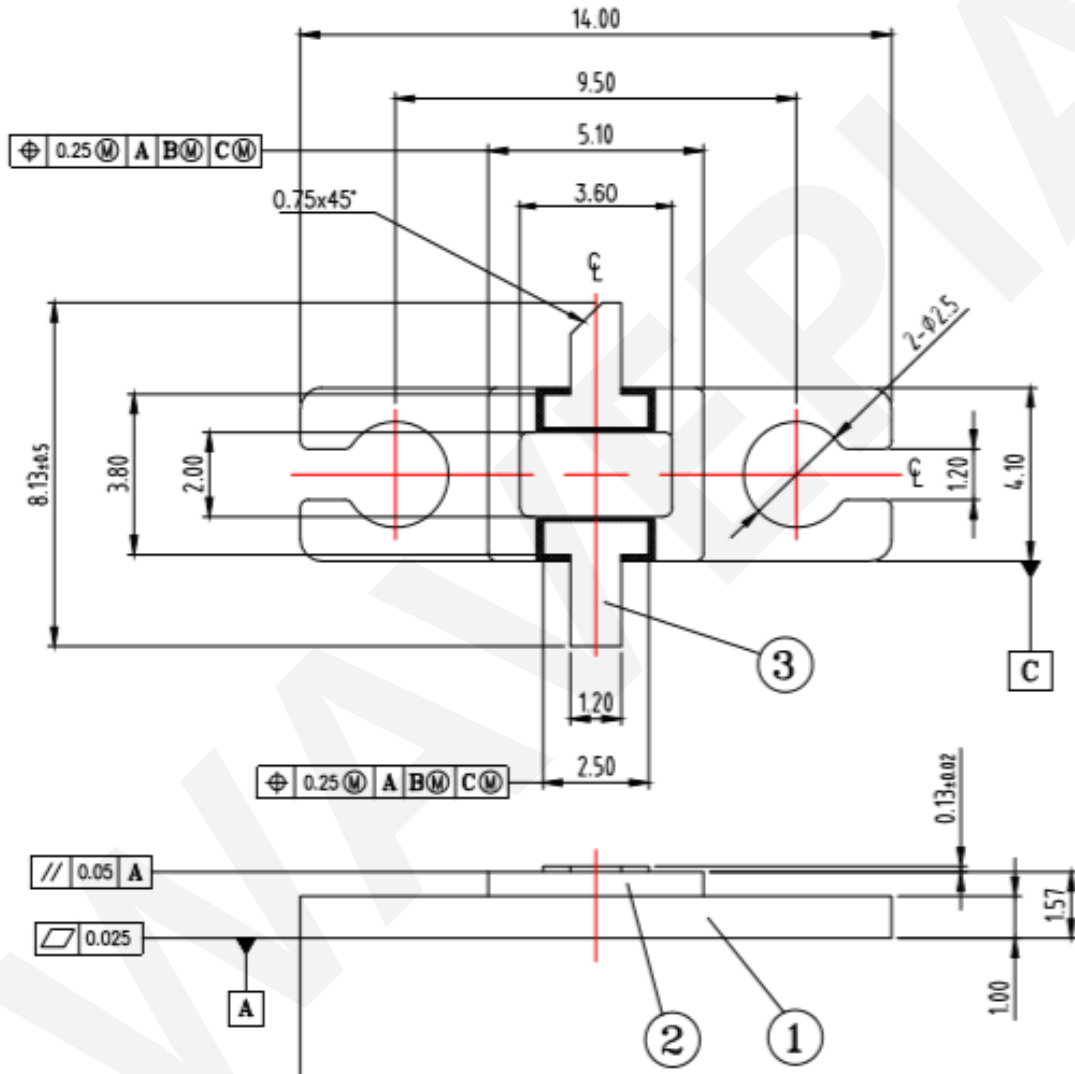
### Product Dimension

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



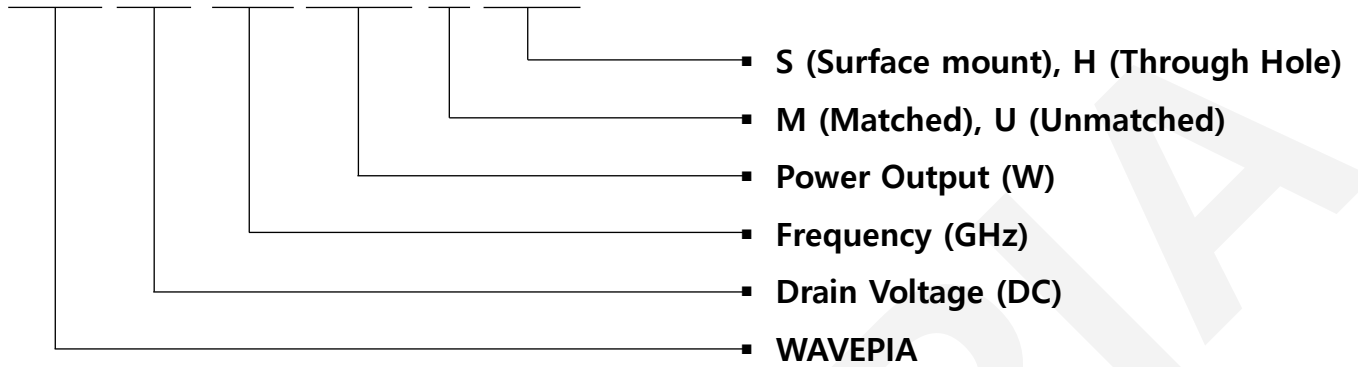
### Product Dimension

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



### Part Number System

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



Parameter	Value	Units
Drain Voltage	28	V
Lower Frequency	DC	GHz
Upper Frequency	6	GHz
Output Power	25	W
Transistor Type	Unmatched	-
Package	S: Surface mount H: Through hole	-