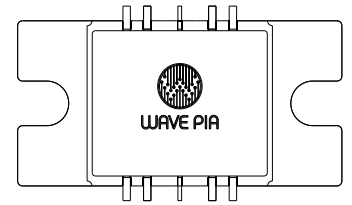


Product Features

- 15-17GHz GaN MMIC Power Amplifier
- Typical Small-signal Gain: 29dB
- Typical Power Gain: 18.7dB at 16GHz
- Typical Output Power: 46.39dBm at 16GHz
- Typical PAE: 26.43% at 16GHz
- 28-32V operation

Applications

- RF Seeker Transmitter
- Radar System
- Satellite Communication
- Public Wi-fi Communication
- Ku-band Application



Package Type: KU_MPKG

NOTE: All the data in this datasheet is the result of measuring by placing the packaged device on the evaluation board.

Absolute Maximum Rating

Parameter	Symbol	Rating	Units	Conditions
Drain-Source Voltage	V_{DSS}	120	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}	20	mA	25°C
Maximum Drain Current ²	I_{DMAX}	1.04	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.

Specifications (Ta*=25°C, F0=16.0GHz, VDD=32V_Pulse, I_{DQ} = 820mA, I_G: 1mA)

Parameter	Symbol	MIN	TYP	MAX	Units	Conditions
Small Signal Gain	G		29.2		dB	Pulse Width = 100µsec, Duty Cycle = 10%
Power Gain	Gp		18.7		dB	Psat @ Igs=1mA
Saturated Output Power	P _{OUT}		46.39		dBm	Psat @ Igs=1mA
Power Added Efficiency	PAE		26.43		%	Psat @ Igs=1mA

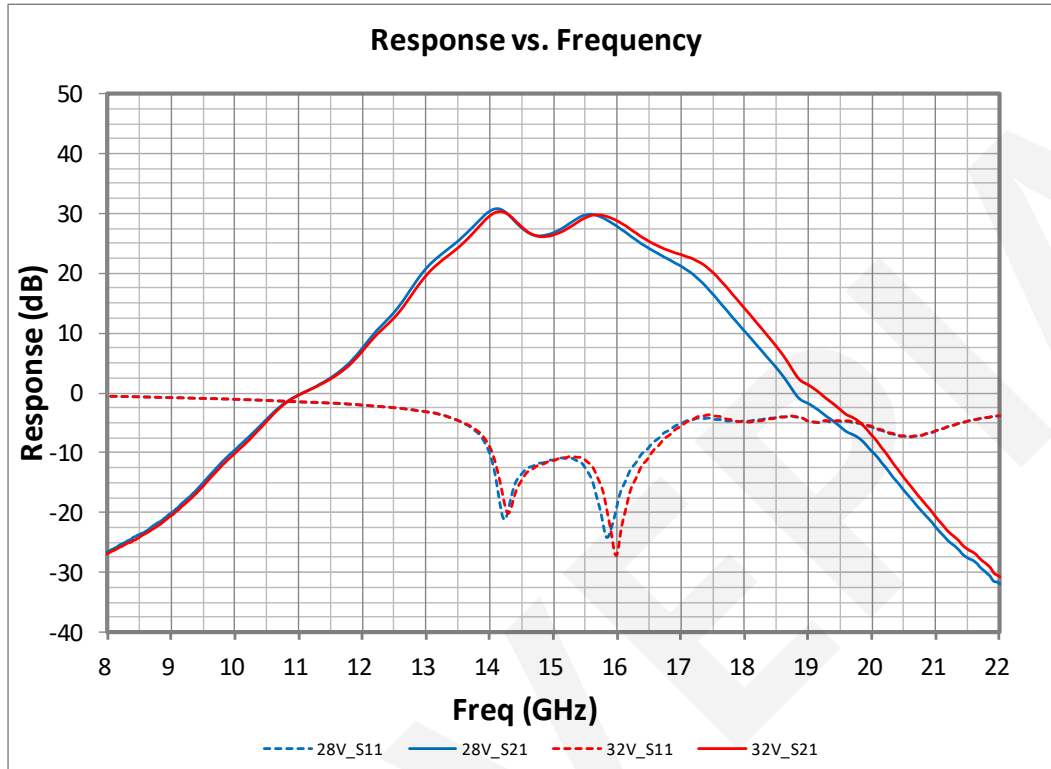
*Ta: Temperature of ambient atmosphere (=room temperature where the measurement was done)

Specifications (Ta=25°C, F0=16.0GHz, VDD=32V_Pulse, I_{DQ} = 820mA, I_G: 10mA)

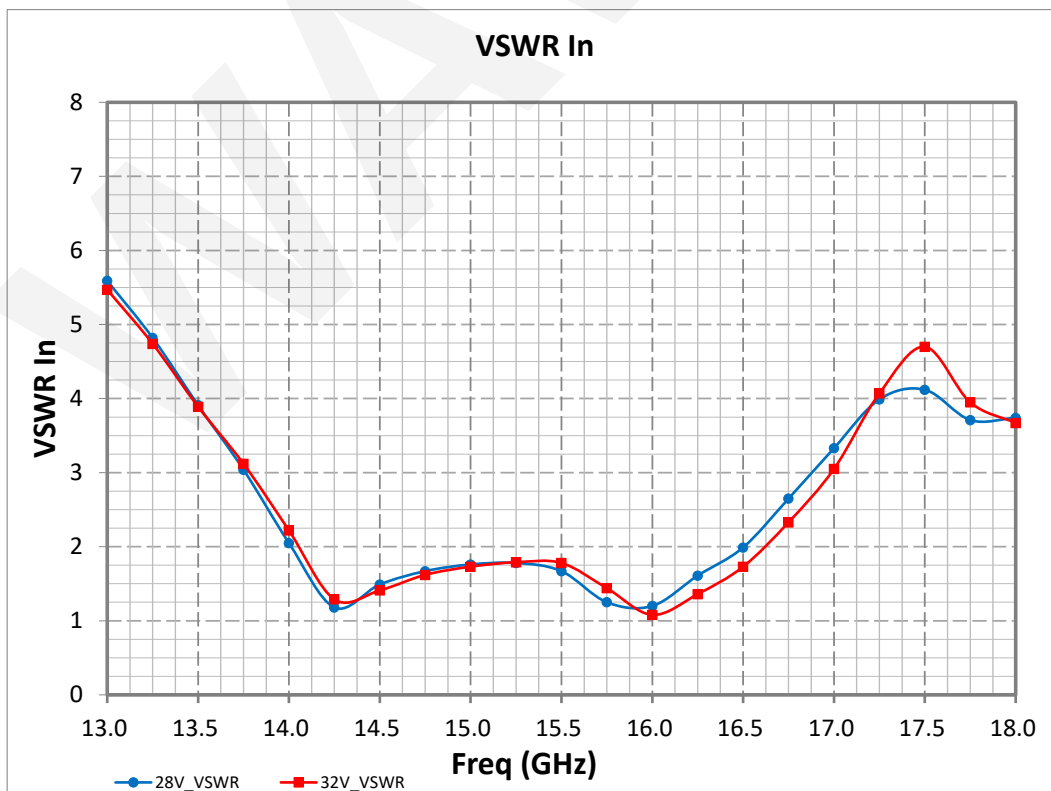
Parameter	Symbol	MIN	TYP	MAX	Units	Conditions
Small Signal Gain	G		29.2		dB	Pulse Width = 100µsec, Duty Cycle = 10%
Power Gain	Gp		16.0		dB	Psat @ Igs=10mA
Saturated Output Power	P _{OUT}		46.43		dBm	Psat @ Igs=10mA
Power Added Efficiency	PAE		26.41		%	Psat @ Igs=10mA

Small-Signal Performance (Ta=25°C, Measured in EV-Board)

Drain Voltage= 28V, I_{DQ}=780mA / 32V, I_{DQ}=820mA

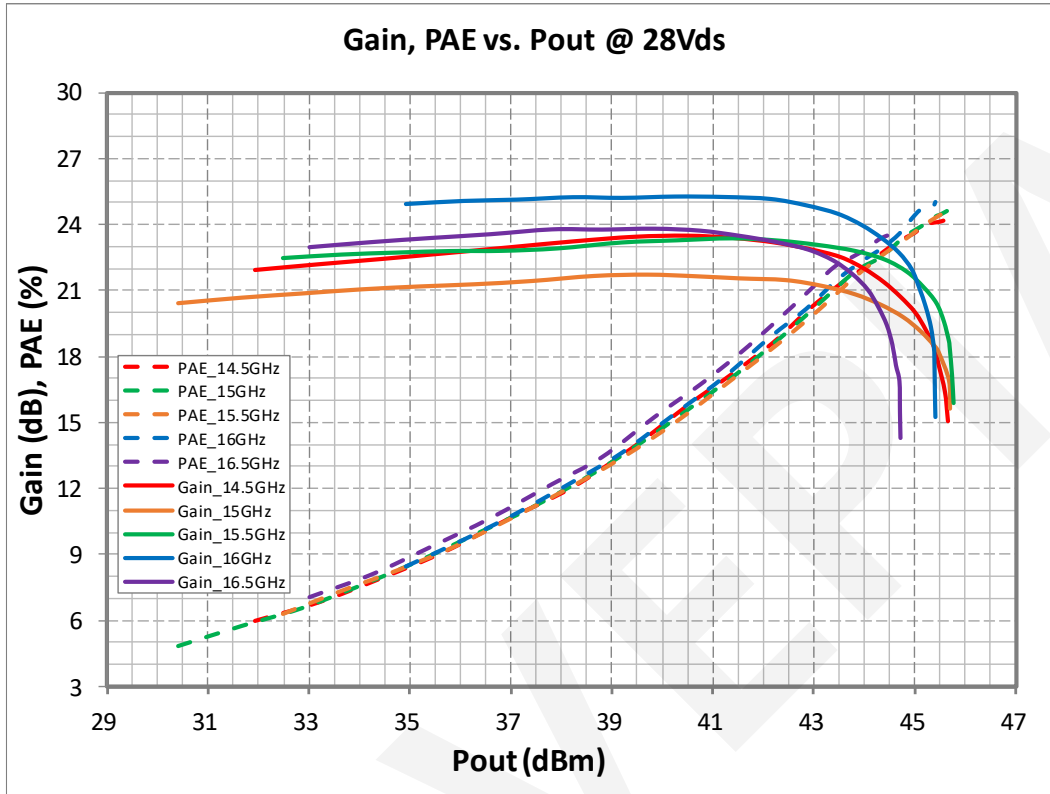


Drain Voltage= 28V, I_{DQ}=780mA / 32V, I_{DQ}=820mA

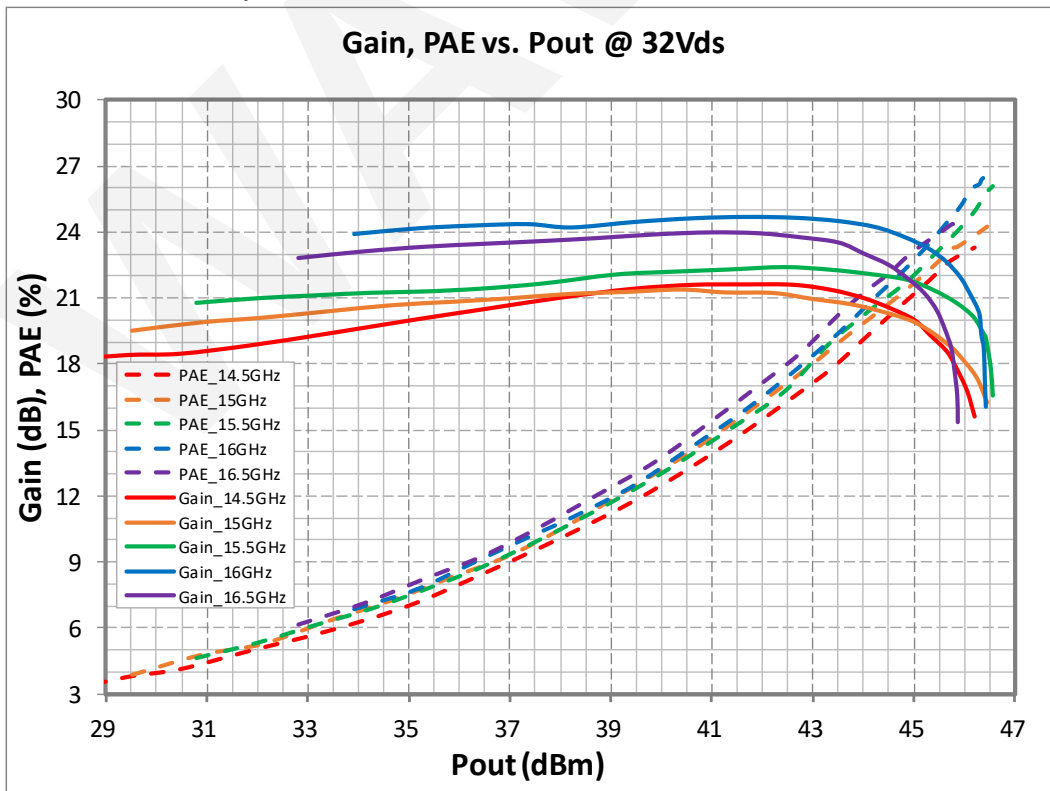


Gain & PAE vs RF Output Power Performance (Ta=25°C, Measured in EV-Board)

Drain Voltage= 28V_Pulse, I_{DQ}=780mA (Pulse Width = 100μsec, Duty Cycle = 10%)

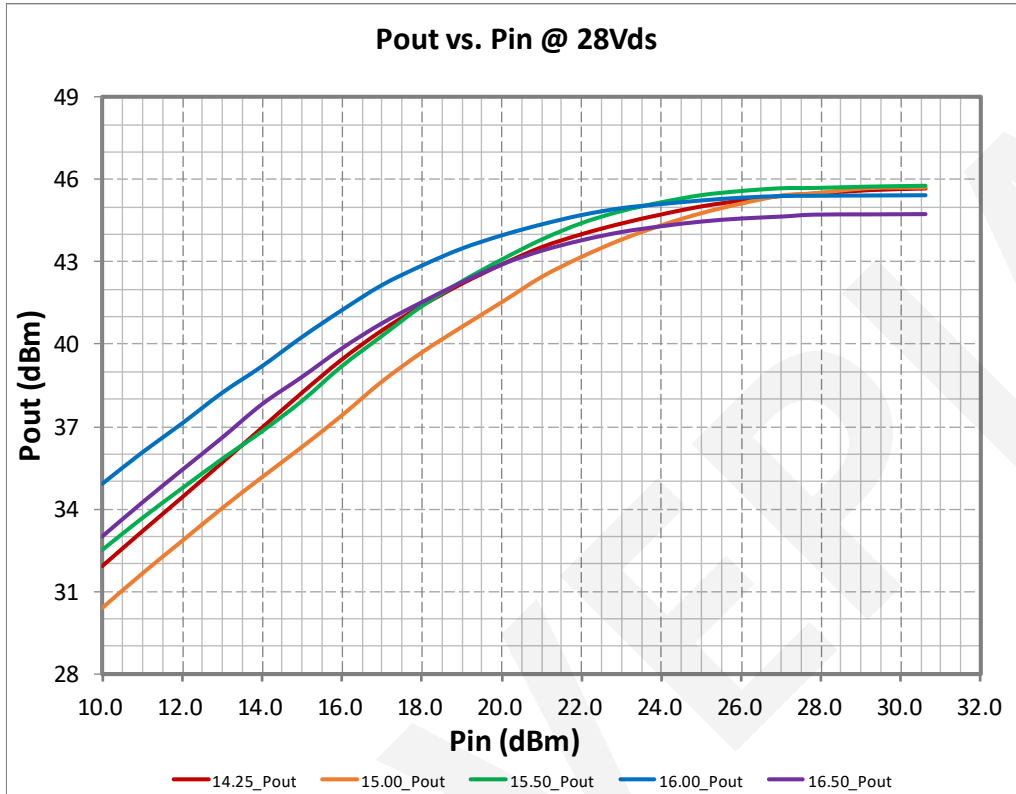


Drain Voltage= 32V_Pulse, I_{DQ}=820mA (Pulse Width = 100μsec, Duty Cycle = 10%)

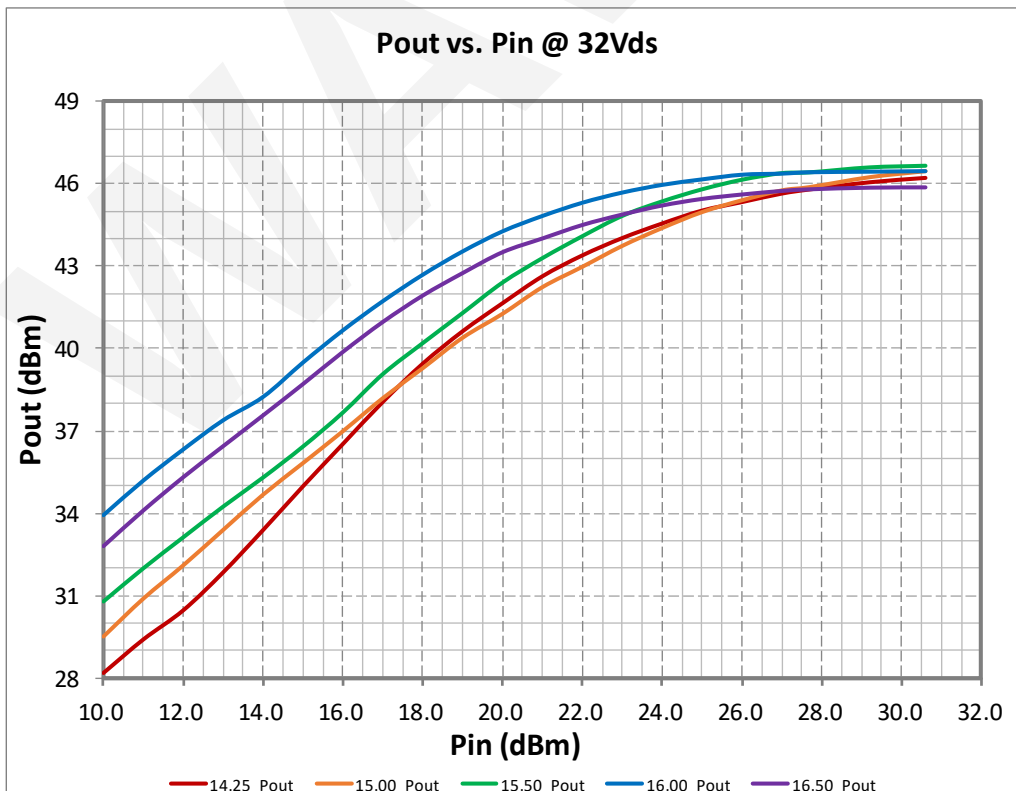


Output Power(Pout) vs Input Power(Pin) Performance (Ta=25°C, Measured in EV-Board)

Drain Voltage= 28V_Pulse, I_{DQ}=780mA (Pulse Width = 100µsec, Duty Cycle = 10%)



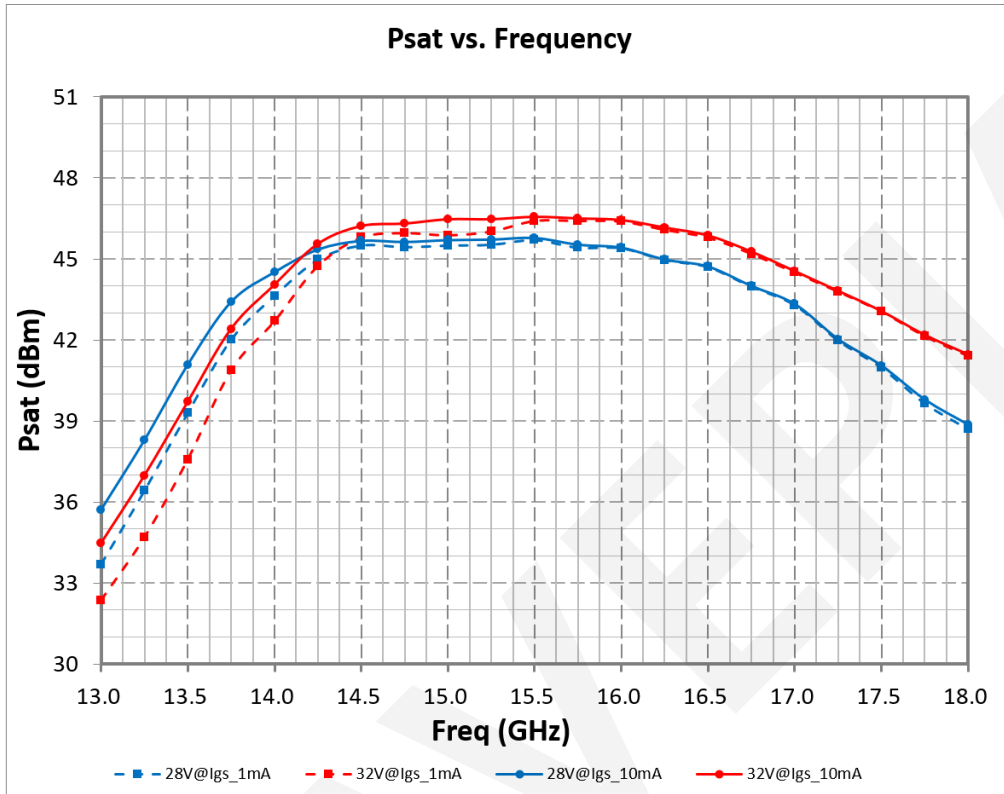
Drain Voltage= 32V_Pulse, I_{DQ}=820mA (Pulse Width = 100µsec, Duty Cycle = 10%)



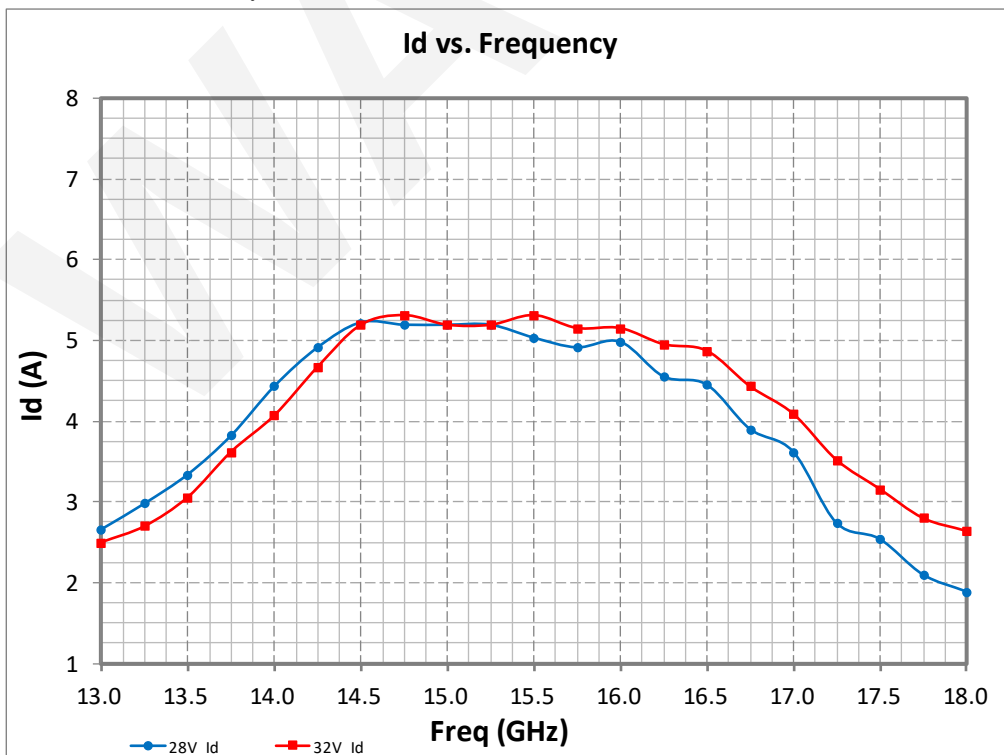
Psat vs Frequency Performance (Ta=25°C, Measured in EV-Board)

Drain Voltage= 28V_Pulse, 32V_Pulse, $I_{DQ}=780\text{mA}$ (Pulse Width = 100 μsec , Duty Cycle = 10%)

$I_G= 1\text{mA}$, 10mA



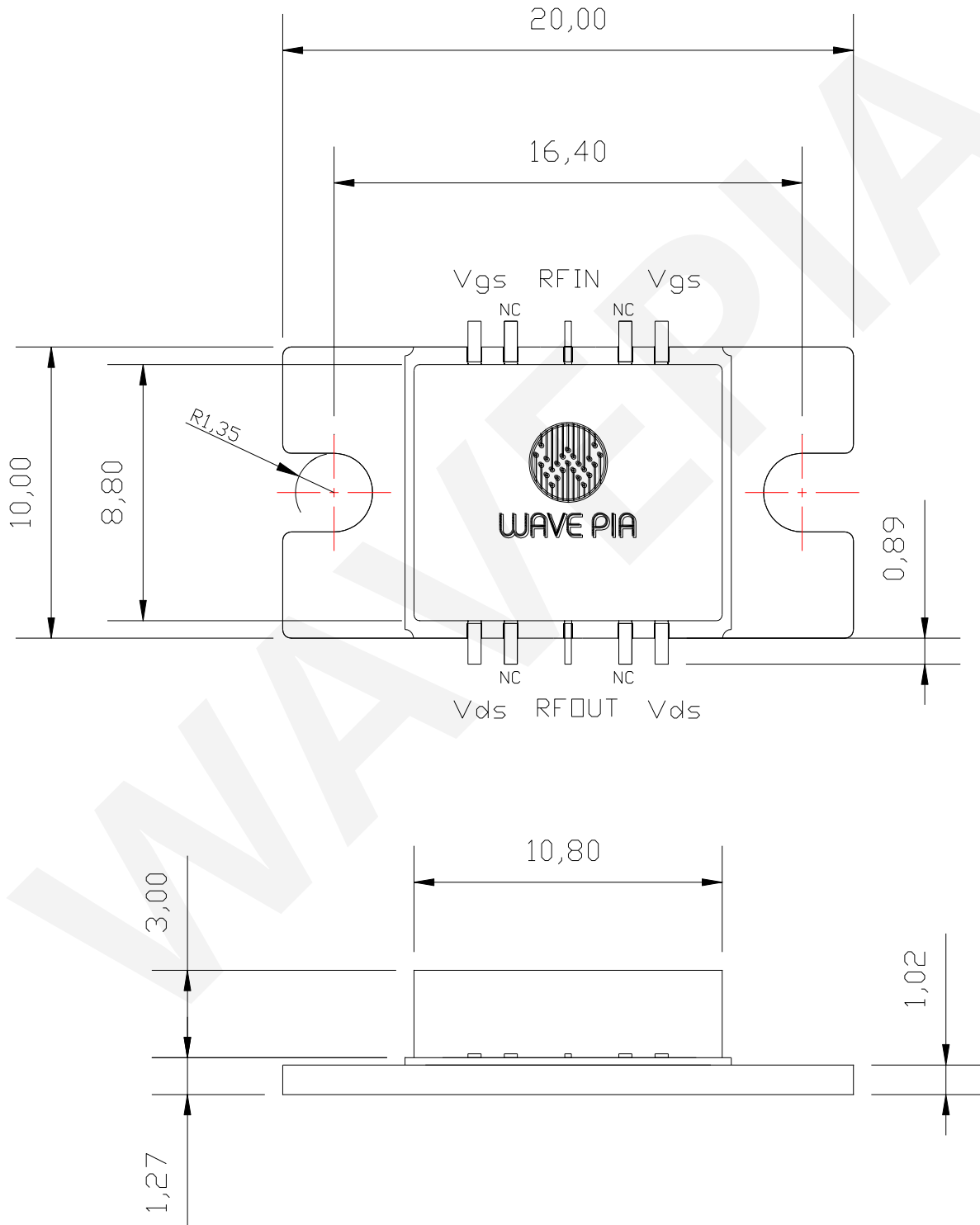
Drain Voltage= 32V_Pulse, $I_{DQ}=820\text{mA}$ (Pulse Width = 100 μsec , Duty Cycle = 10%)



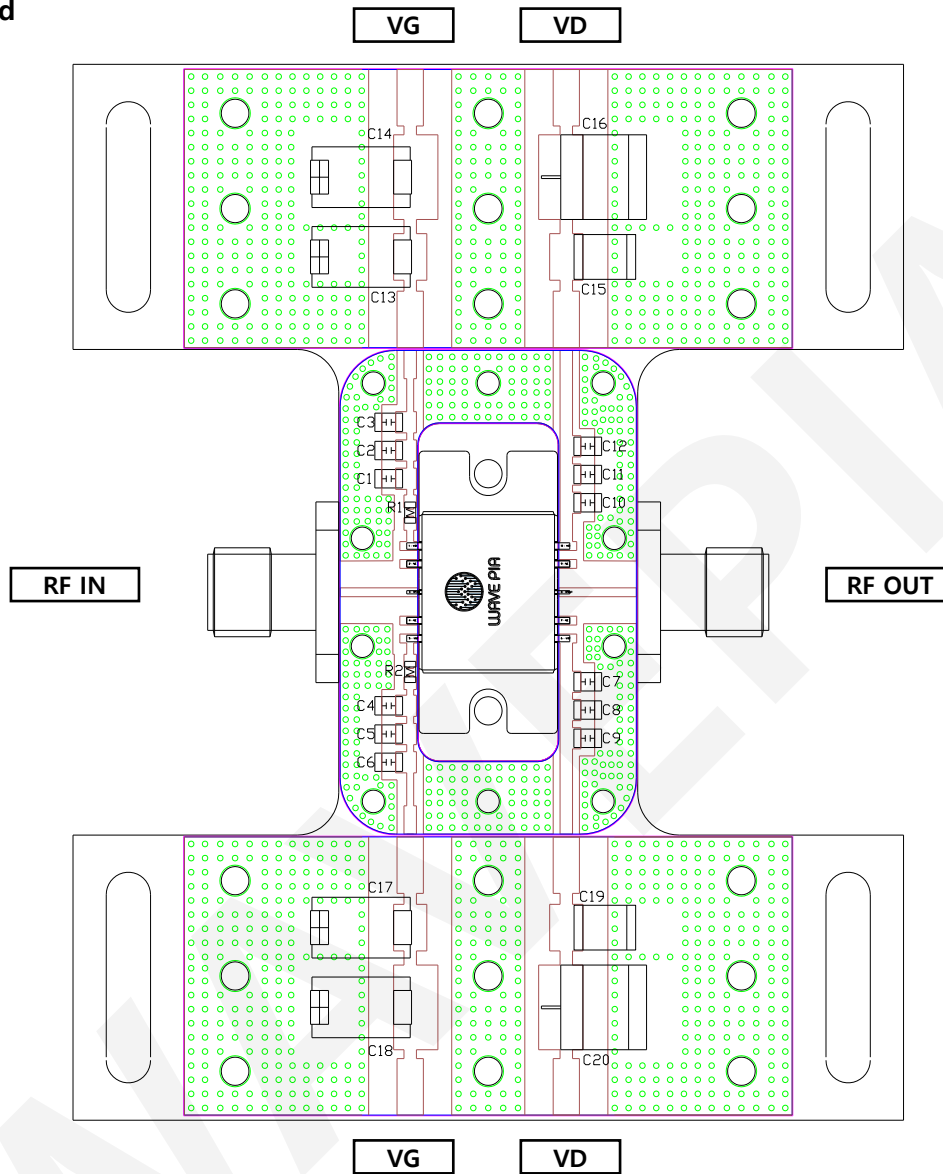


Product Dimension

- Package Type: KU_MPKG
- Unit: mm



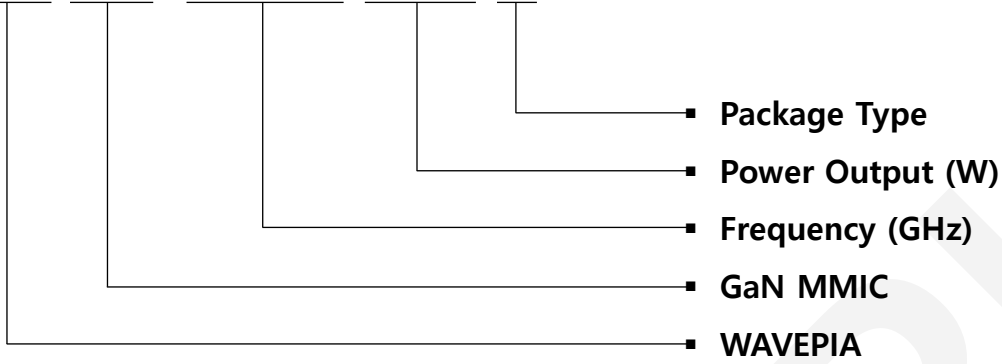
Evaluation Board



Reference	Part Number	Value	Description	Package	Manufacturer	EA
C1, C4, C7, C10	251R15S101JV4S	100pF	High Q Capacitor	2012	Johanson	4
C2, C5, C8, C11	CL21C103JBCNNNC	10nF	Ceramic Capacitor	2012	SAMSUNG	4
C3, C6, C9, C12	CL21C470JDCNNNC	470nF	Ceramic Capacitor	2012	SAMSUNG	4
C13, C17	TAJD106K035RNJ	10uF	Tantalium Capacitor	7343	AVX	2
C14, C18	293D476X9016D2TE3	47uF	Tantalium Capacitor	7343	Vishay	2
C15, C19	251S43W474KV4E	470nF	High V Capacitor	4532	Johanson	2
C16, C20	597D106X9075R2T	10uF	Tantalium Capacitor	7360	Vishay	2
R1,R2	RC1608J510CS	51Ω	Chip Resistor	1608	SAMSUNG	2
P1	EVP_16G01		RF PCB – RO4003C 12mil		FIT	1
P2	EVP_16G02		DC PCB – RO4003C 12mil		FIT	2
M1	EVM_16G01		EVB – Wall Type		SunKorea	1
M2	EVM_16G02		EVB – Plate Type		SunKorea	1
Q1	WPGM1517050M		GaN MMIC	MPKG	WAVEPIA	1

Part Number System

W P G M 1 5 1 7 0 5 0 M



Parameter	Value	Units
Lower Frequency	15	GHz
Upper Frequency	17	GHz
Output Power	50	W
Transistor Type	MMIC	-
Package	KU_MPKG	-