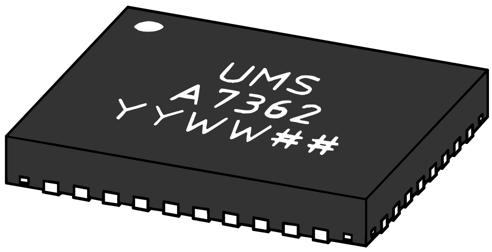
27.5-31GHz 8W Power Amplifier

GaN Monolithic Microwave IC in SMD Leadless Package

Description

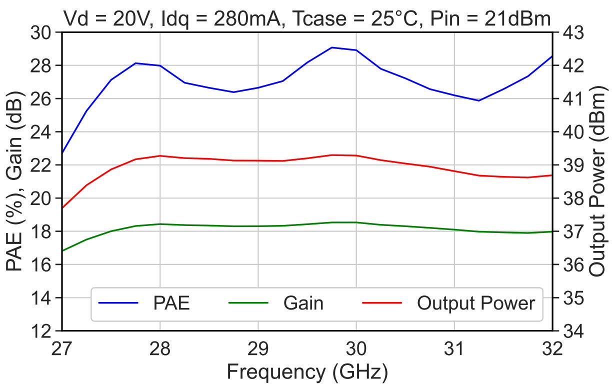
The CHA7362-QWA is Ka-band high power amplifier fabricated on a robust GaN on SiC process. Operating from 27.5 to 31GHz, it achieves 4W linear power with -25dBc IMD3. It also provides more than 26dB small signal gain. This amplifier exhibits 8W output power with 27% associated power added efficiency.
The CHA7362-QWA is dedicated to satellite communications and 5G infrastructure. Both RF input and output are matched to 50Ω and integrate ESD RF protections.
This power amplifier is supplied in low cost SMD RoHS compliant QFN plastic package.



Main Features

- Frequency Range: 27.5-31GHz
- Linear Gain: 26dB
- 8W Output Power with 27% PAE
- IMD3 < -25dBc at 33dBm Pout / Tone
- ACPR < -30dBc at 36dBm Pout[1]
- EVM < 3.5% at 34dBm Pout[2]
- Bias: Vd = 20V and Idq = 280mA
- 36L-QFN Plastic Package 6x5 mm²
- MSL3

[1] 30MHz Modulation Bandwidth, 8PSK
[2] 400MHz Modulation Bandwidth, 256QAM



Main Electrical Characteristics

Tcase = 25°C (Tcase: QFN backside temperature)

Symbol	Parameter	Min	Typ	Max	Unit
Freq	Frequency Range	27.5		31	GHz
Gain	Linear Gain		26		dB
Pout	Output Power (Pin = 21dBm)		39		dBm
PAE	Power Added Efficiency (Pin = 21dBm)		27		%
IMD3	IMD3 at 33dBm Pout / Tone		-25		dBc
ACPR	ACPR at Pout = 36dBm with 8PSK (30MHz Modulation Bandwidth)		-30		dBc
NPR	Noise Power Ratio at Pout = 35.5dBm (45MHz Modulation Bandwidth)		19		dBc

United Monolithic Semiconductors S.A.S.
Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Specifications

Vd = 20V, Idq = 280mA, Tcase = 25°C

Symbol	Parameter	Min	Typ	Max	Unit
Freq	Frequency Range	27.5		31	GHz
Gain	Linear Gain		26		dB
Pout	Output Power (Pin = 21dBm)		39		dBm
PAE	Power Added Efficiency		27		%
S11(1)	Input Return Loss		-10		dB
S22(1)	Output Return Loss		-12		dB
Id	Drain Current at Saturation		1.6		A
Idq	Quiescent Drain Current		280		mA
Vd	Drain Voltage		20		V

These values are representative of on-board measurements as defined on the drawing in the Evaluation Board section.

(1) Input and Output Return Loss are given at Evaluation Board connectors' reference planes as defined in the Measurement Reference Planes section.

Absolute Maximum Ratings(2)

Tcase = 25°C

Symbol	Parameter	Values	Unit
Vd	Drain Bias Voltage	27	V
Idq	Quiescent Drain Current (without RF signal)	840	mA
Vg	Gate Bias Voltage	-7 to -1.5	V
Pin	Maximum Input Power	30	dBm

(2) Operation of this device above anyone of these parameters may cause permanent damage.

Recommended Operating Range(3), (4)

Symbol	Parameter	Values	Unit
Vd	Drain Bias Voltage	15 to 25	V
Idq	Quiescent Drain Current (without RF signal)	170 to 560	mA
Vg	Gate Bias Voltage	-5 to -2.5	V
Tj	Maximum Junction Temperature(5)	200	°C
Pin	Maximum Input Power	27	dBm

(3) Electrical performances are defined for specified test conditions.
(4) Electrical performances are not guaranteed over all recommended operating conditions.
(5) See Device Thermal Performances section.

Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Temperature Range

Tcase	Operating Temperature Range	-40 to +85	°C
Tstg	Storage Temperature Range	-55 to +150	°C

Typical Bias Conditions

Tcase = 25°C

Symbol	Pin Number	Description	Values	Unit
Vg	3, 5, 8, 19, 22, 24	Gate Voltage	-3	V
Vd	1, 4, 6, 21, 23, 26	Drain Voltage	20	V

“Power ON” Sequence

1. Bias HPA gate voltage at Vg close to Vpinch-off (Typically: Vg ≈ -5V)
2. Apply Vd bias voltage (Typically: Vd = 20V)
3. Increase gate voltage Vg up to quiescent bias drain current Idq
4. Apply RF signal

“Power OFF” Sequence

1. Turn off RF signal
2. Bias HPA gate voltage at Vg close to Vpinch-off (Typically: Vg ≈ -5V)
3. Check that quiescent bias drain current Idq is close to 0mA
4. Turn Vd bias voltage to 0V
5. Check that quiescent bias drain current Idq is close to 0mA
6. Turn Vg bias voltage to 0V

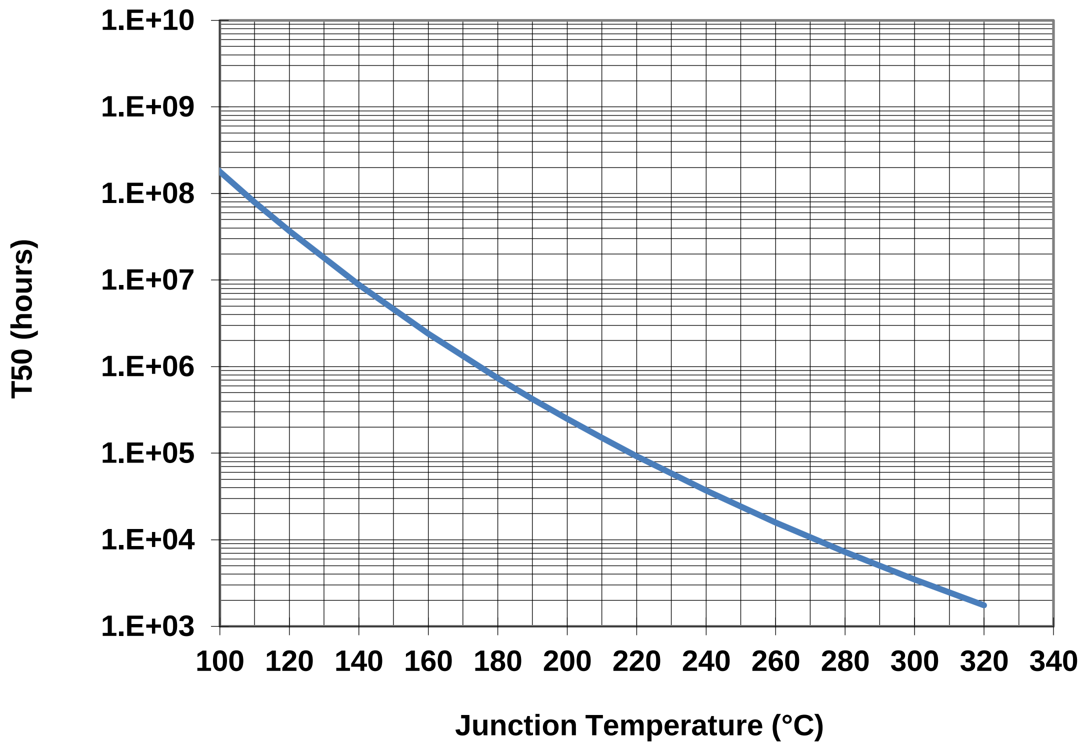
Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Device Thermal Performances

All the figures given in this section are obtained assuming that the QFN device is only cooled down by conduction through the package thermal pad (no convection mode considered). The temperature is monitored at the package back-side interface (Tcase). The system maximum temperature must be adjusted in order to guarantee that Tjunction remains below the maximum value specified in the Recommended Operating Range table. The system PCB must be designed to comply with this requirement.

Parameter	Conditions	Tjunction (°C)	Rth (°C/W)	T50 (hours)
Rth[(1)] Thermal Resistance (Junction to Case)	Vd = 20V Idq = 280mA Pout = 38.5dBm Pdiss = 25.4W	194	4.29	3.43E+05
	Vd = 20V Idq = 280mA Pout = 35dBm Pdiss = 15.2W	157	4.74	2.90E+06

(1) Assuming 85°C Tcase

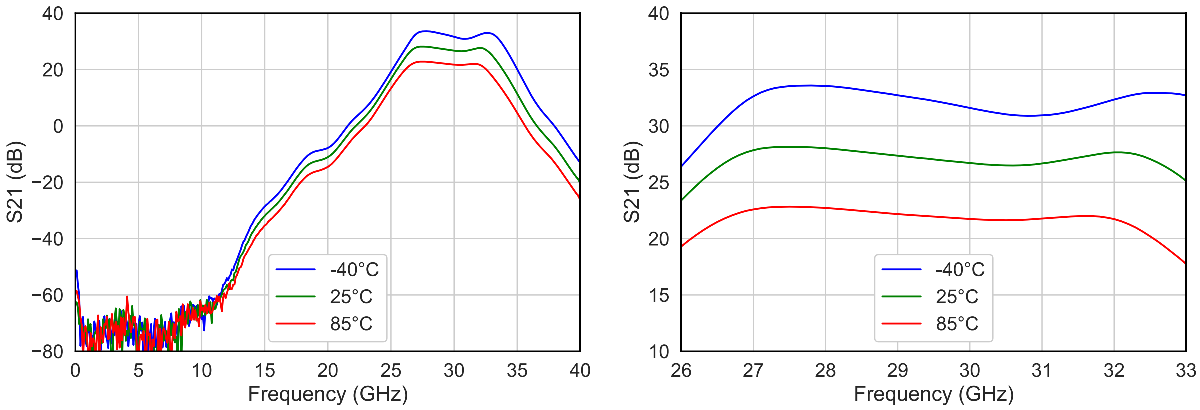


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

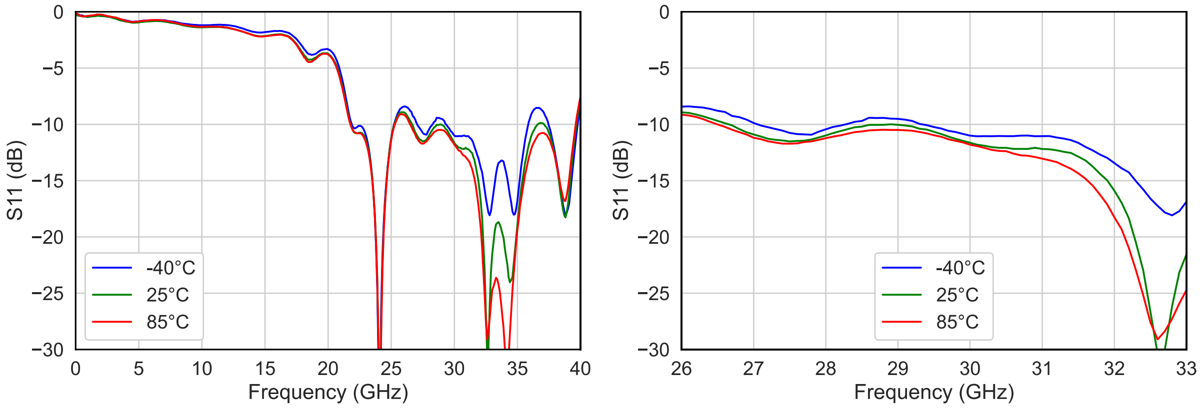
Typical Board Measurements: Small Signal Performance

Test conditions: CW, Vd = 20V, Idq = 280mA, Tcase = -40°C / 25°C / 85°C

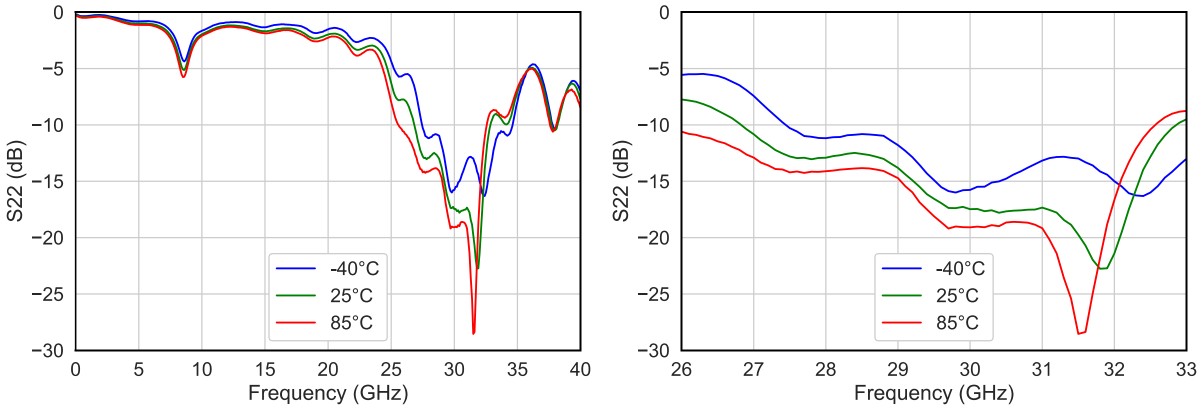
Linear Gain vs. Frequency vs. Temperature



Input Return Loss vs. Frequency vs. Temperature



Output Return Loss vs. Frequency vs. Temperature

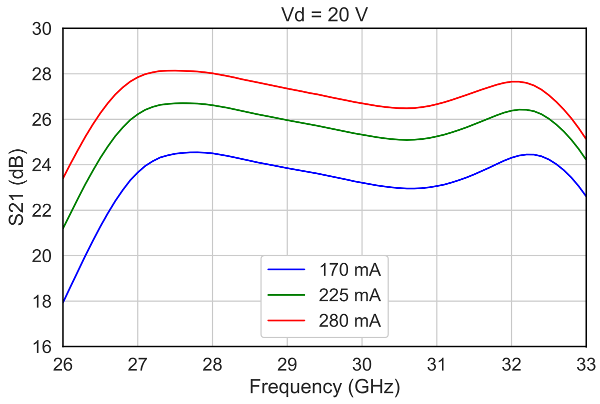


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

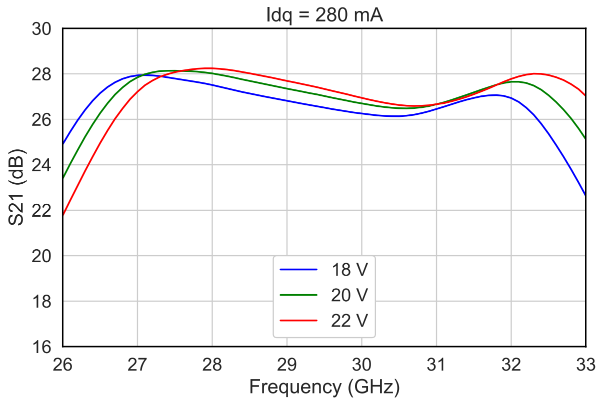
Typical Board Measurements: Small Signal Performance

Test conditions: CW, Tcase = 25°C

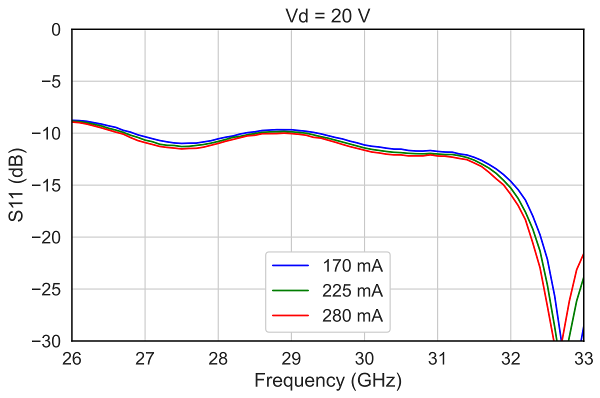
Linear Gain vs. Frequency vs. Idq



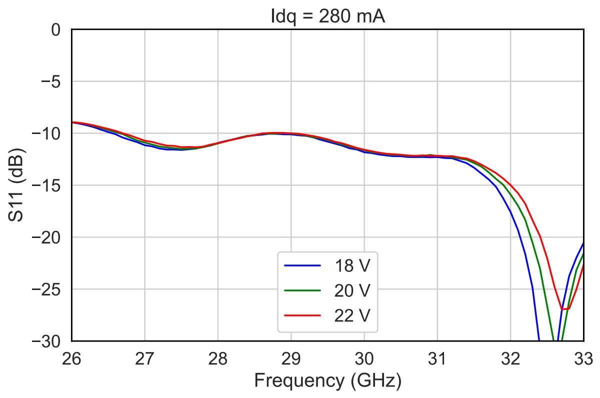
Linear Gain vs. Frequency vs. Vd



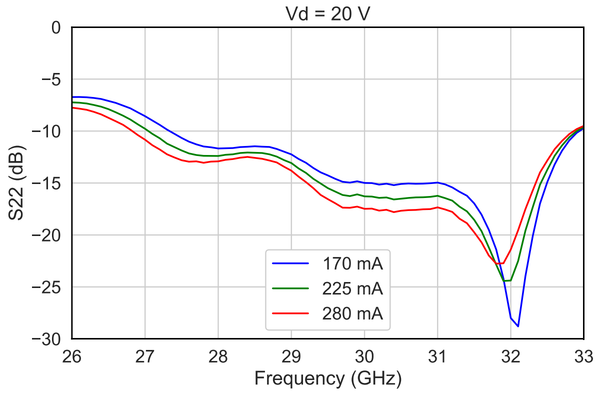
Input Return Loss vs. Frequency vs. Idq



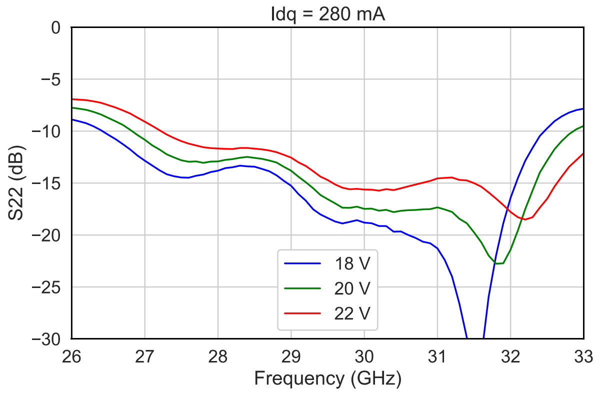
Input Return Loss vs. Frequency vs. Vd



Output Return Loss vs. Frequency vs. Idq



Output Return Loss vs. Frequency vs. Vd

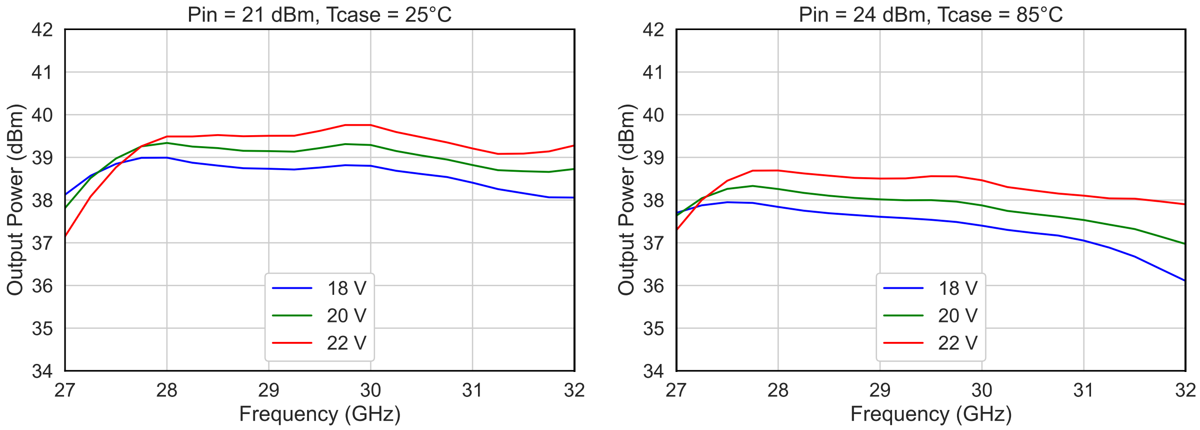


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

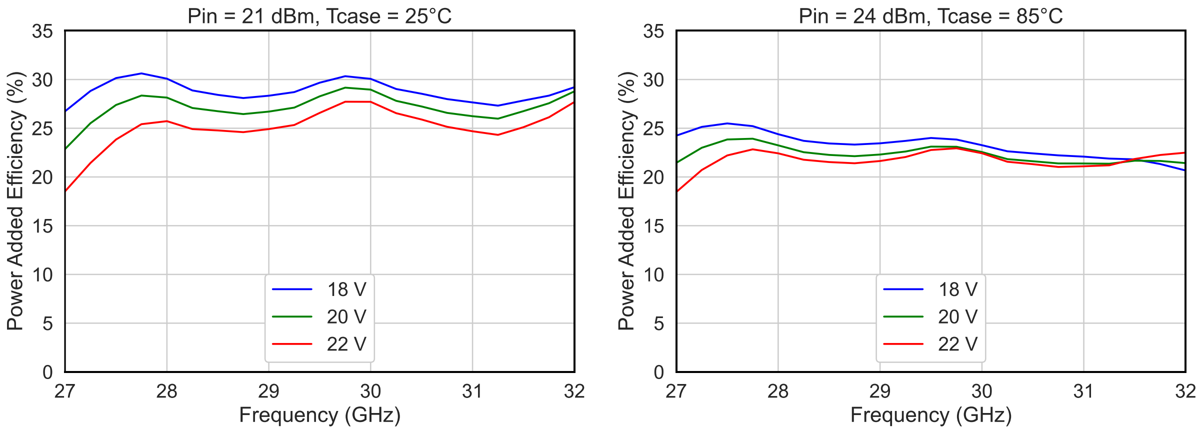
Typical Board Measurements: Large Signal Performance

Test conditions: CW, Idq = 280mA, Tcase = 25°C / 85°C

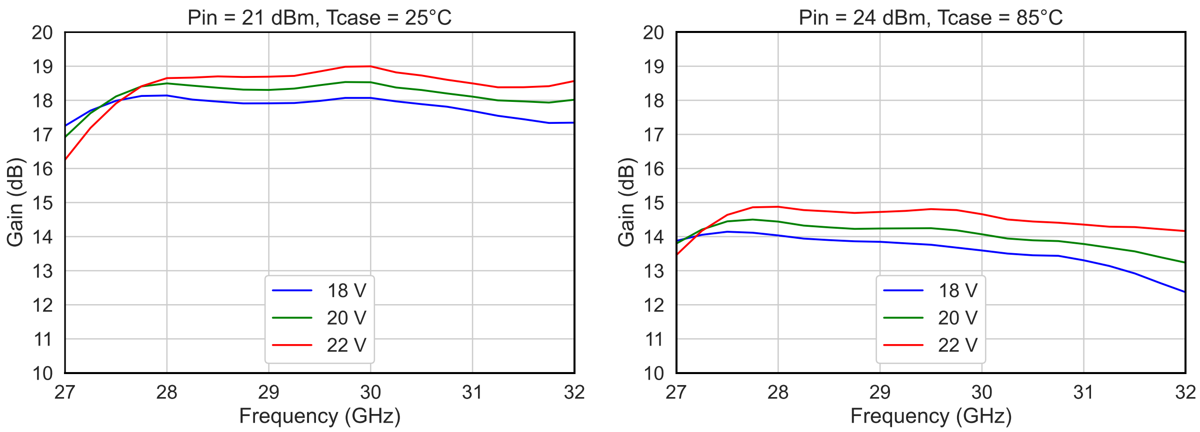
Output Power vs. Frequency vs. Drain Voltage



Power Added Efficiency vs. Frequency vs. Drain Voltage



Gain vs. Frequency vs. Drain Voltage

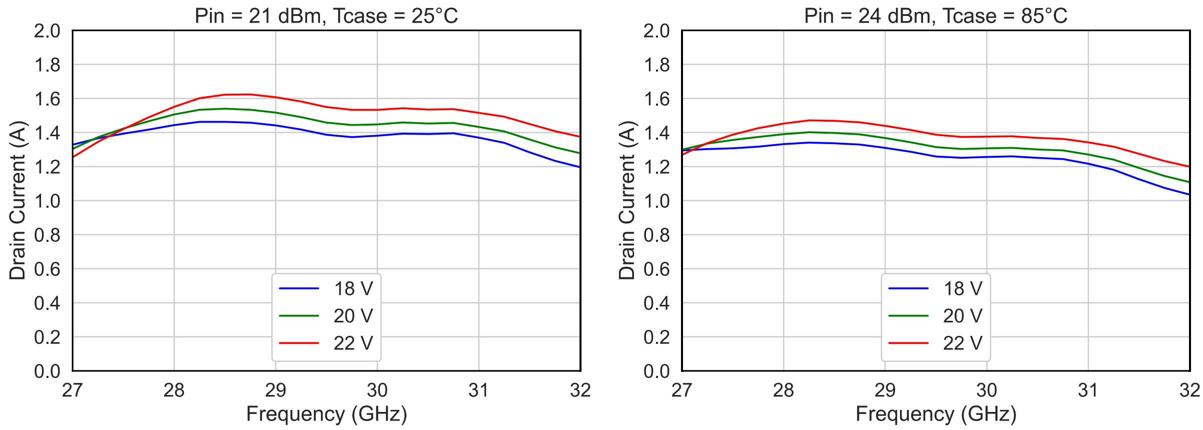


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

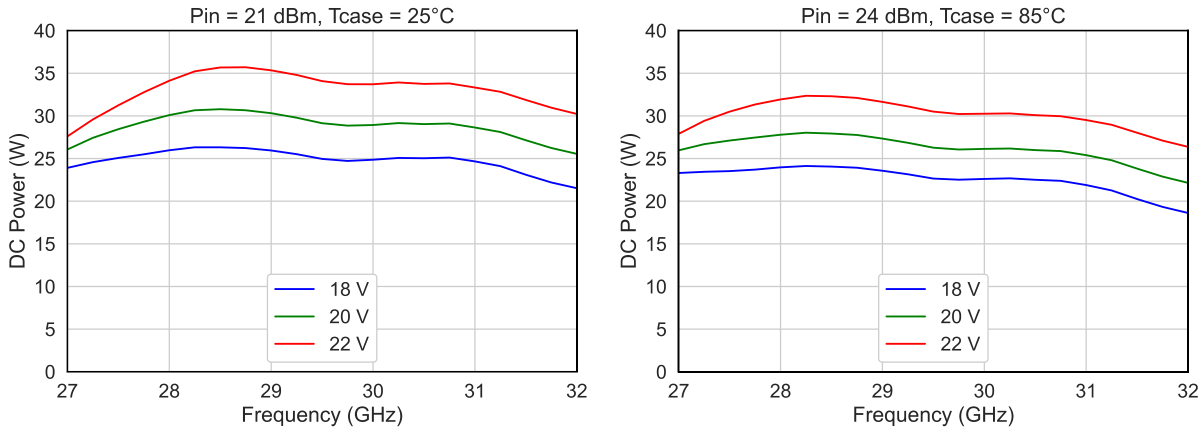
Typical Board Measurements: Large Signal Performance

Test conditions: CW, Idq = 280mA, Tcase = 25°C / 85°C

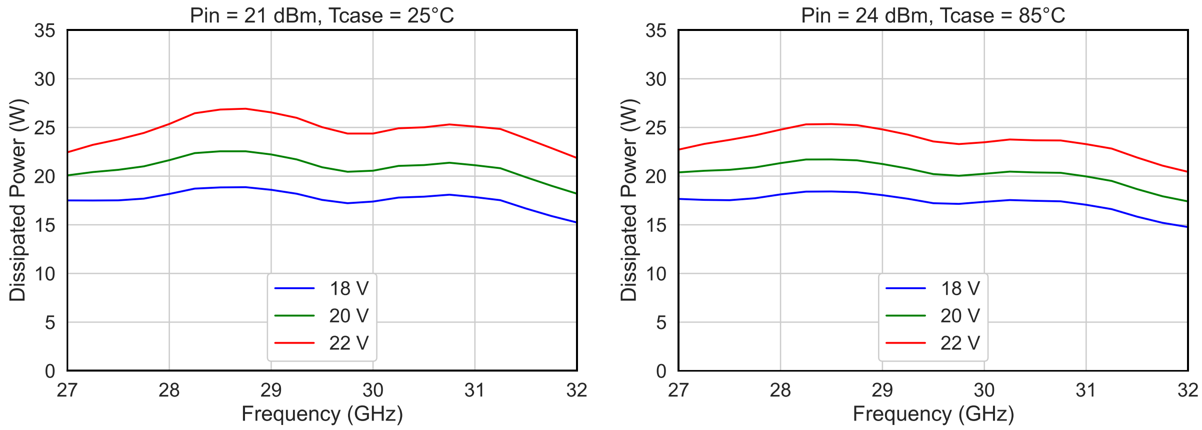
Drain Current vs. Frequency vs. Drain Voltage



DC Power Consumption vs. Frequency vs. Drain Voltage



Dissipated Power vs. Frequency vs. Drain Voltage

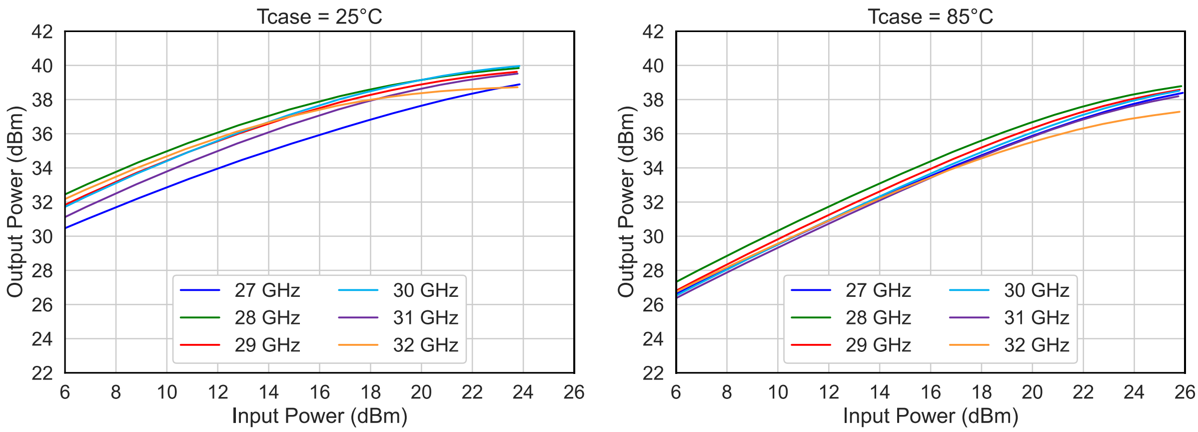


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

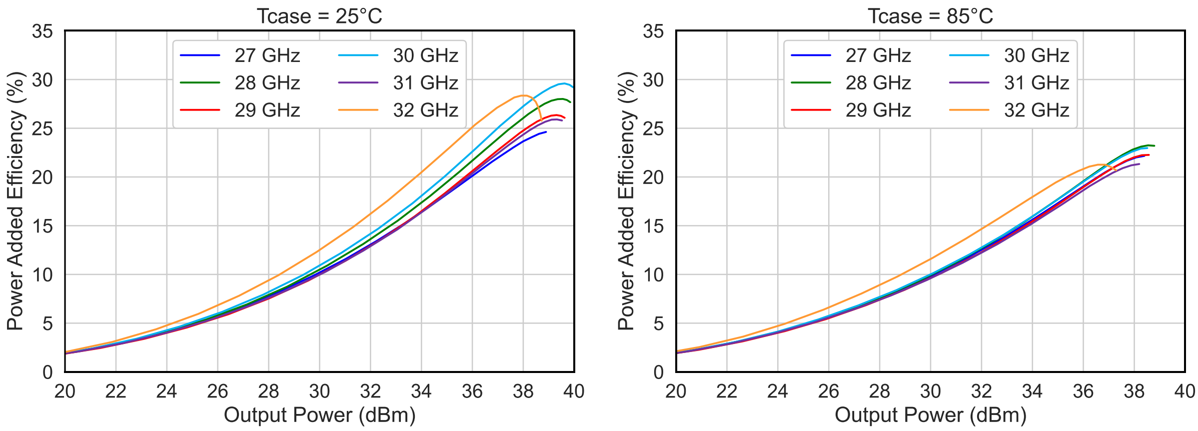
Typical Board Measurements: Large Signal Performance

Test conditions: CW, Vd = 20 V, Idq = 280mA, Tcase = 25°C / 85°C

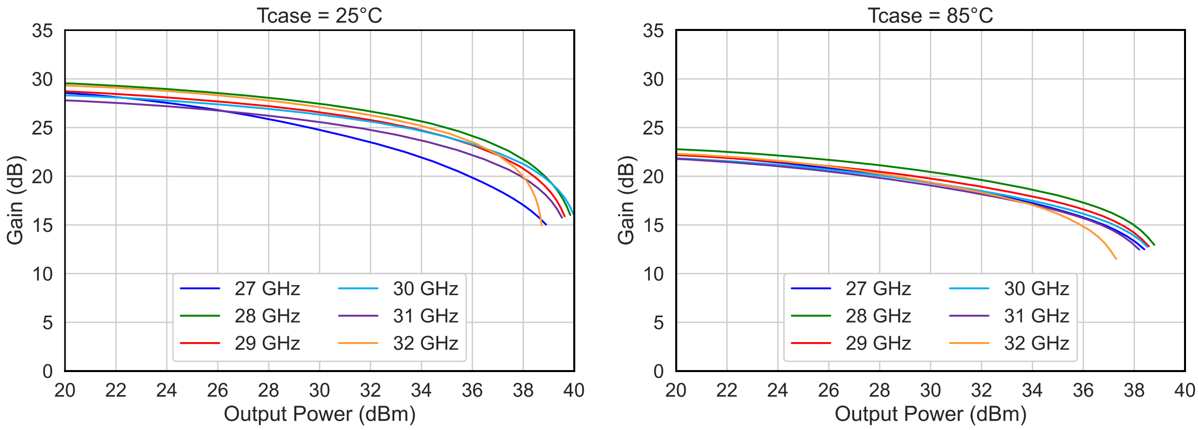
Output Power vs. Input Power vs. Frequency



Power Added Efficiency vs. Output Power vs. Frequency



Gain vs. Output Power vs. Frequency

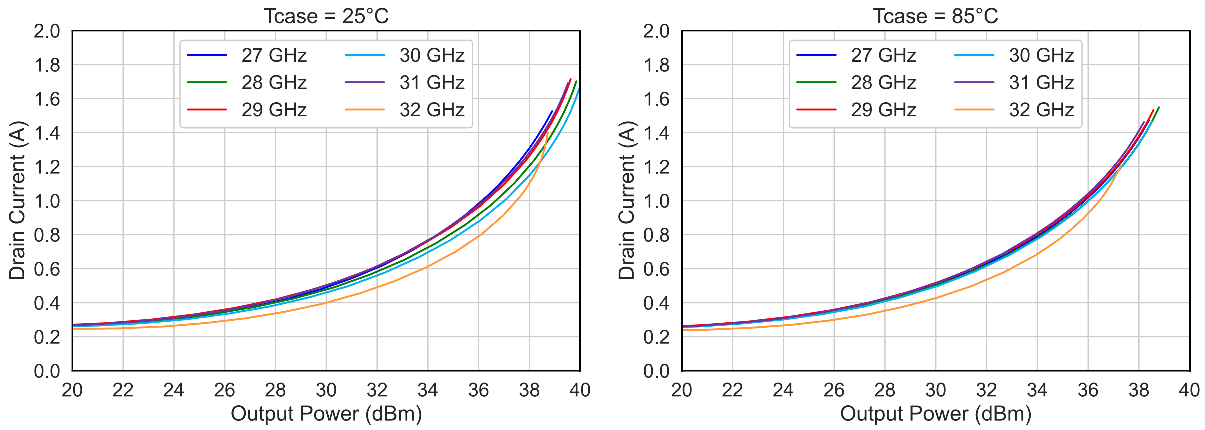


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

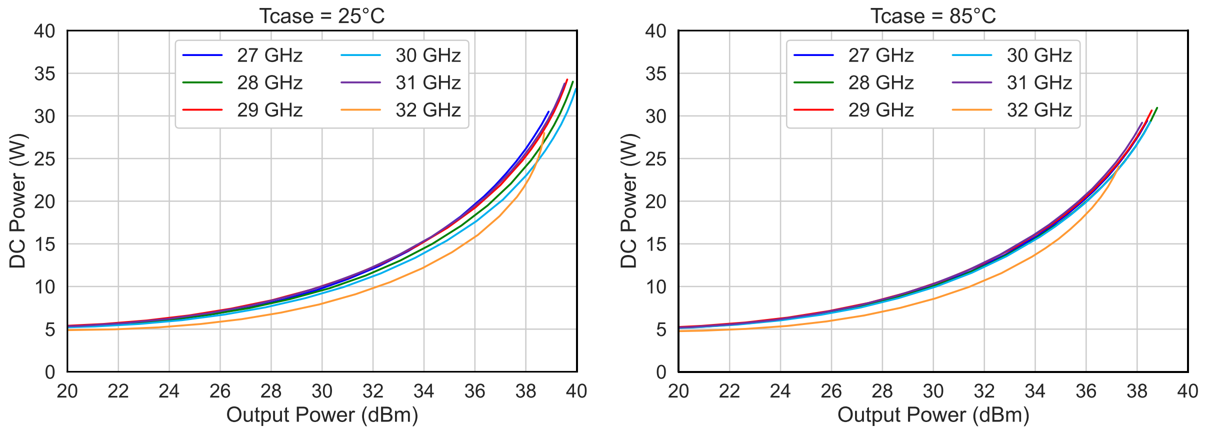
Typical Board Measurements: Large Signal Performance

Test conditions: CW, Vd = 20V, Idq = 280mA, Tcase = 25°C / 85°C

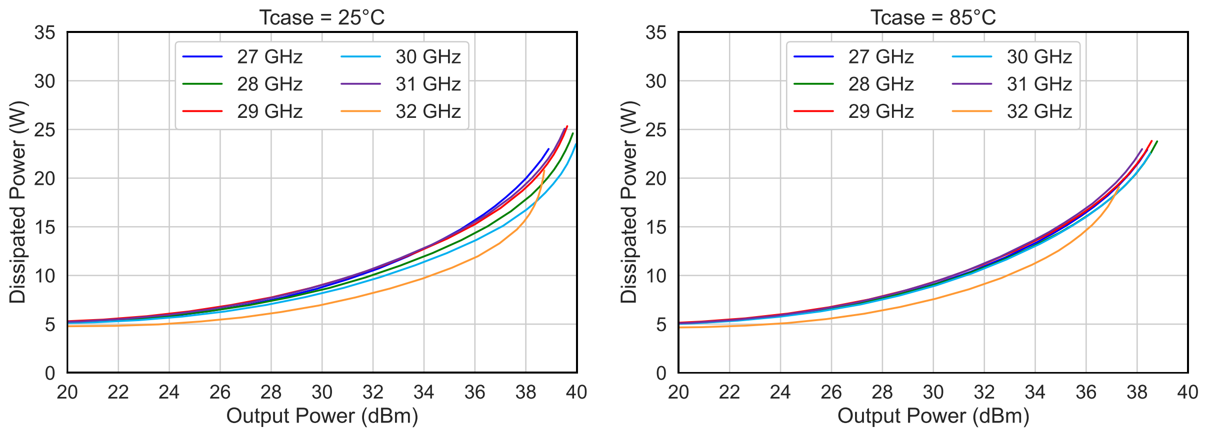
Drain Current vs. Output Power vs. Frequency



DC Power Consumption vs. Output Power vs. Frequency



Dissipated Power vs. Output Power vs. Frequency

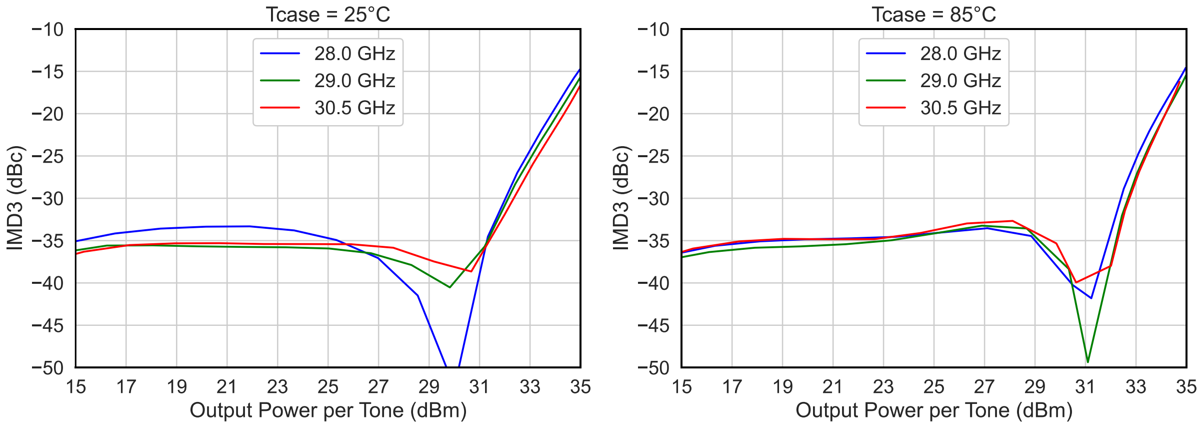


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

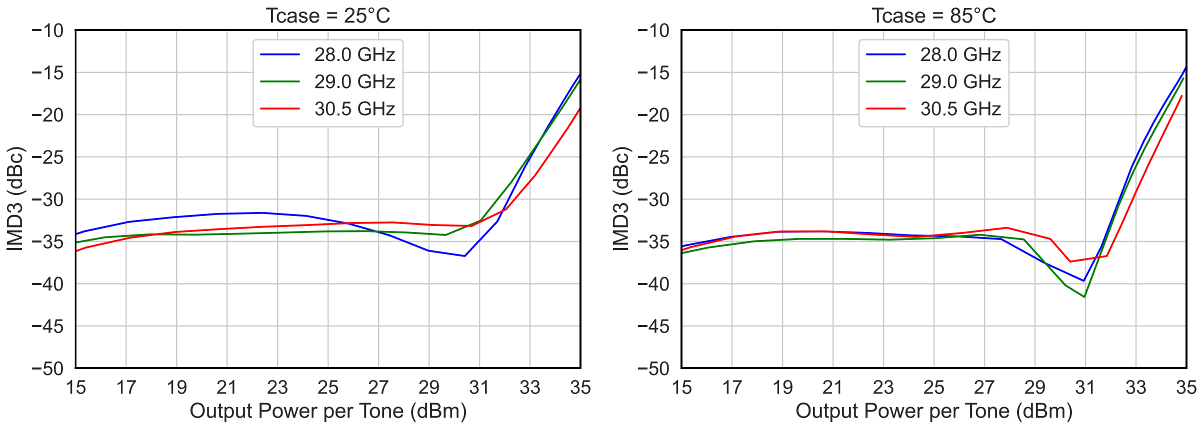
Typical Board Measurements: Linearity - Intermodulation Distortion

Test conditions: CW, Vd = 20V, Idq = 170mA, Tcase = 25°C / 85°C

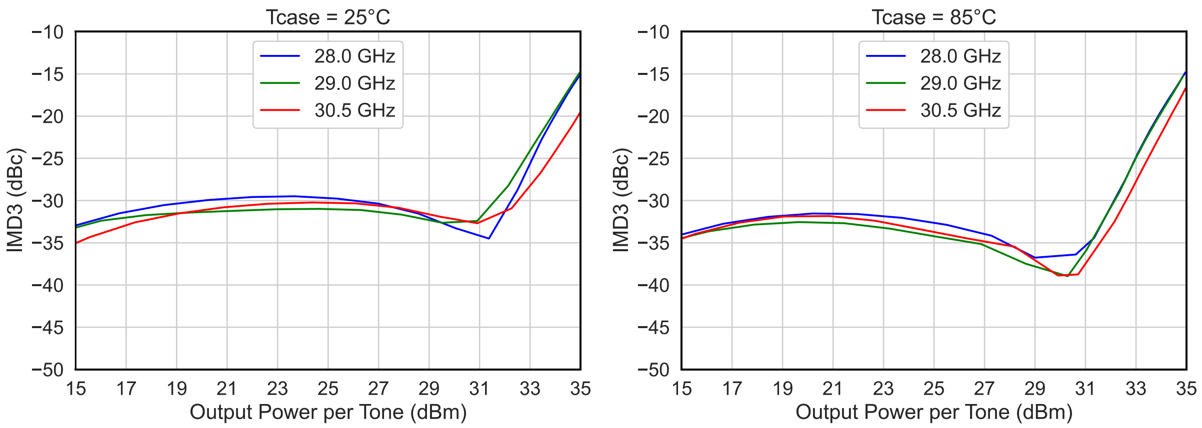
IMD3 at 10MHz Tone Separation vs. Output Power per Tone vs. Frequency



IMD3 at 100MHz Tone Separation vs. Output Power per Tone vs. Frequency



IMD3 at 200MHz Tone Separation vs. Output Power per Tone vs. Frequency

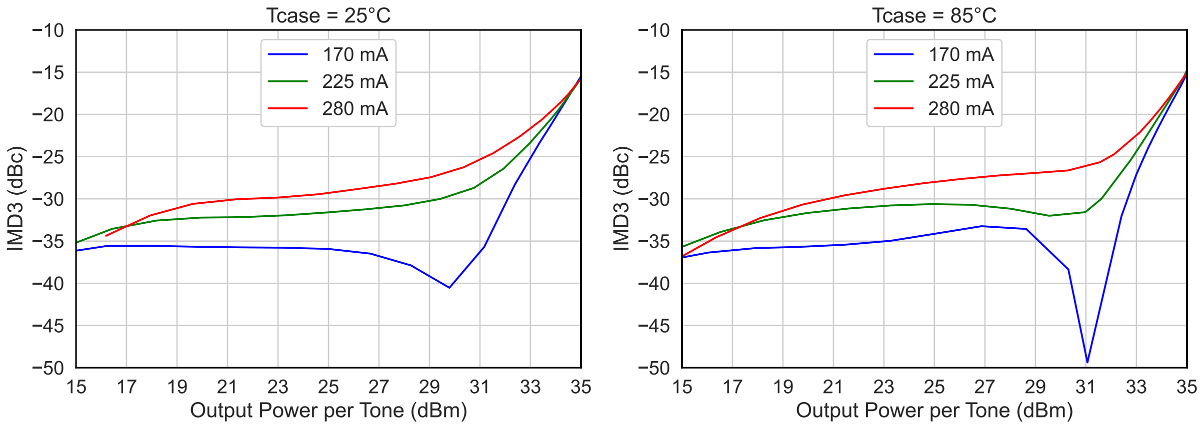


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Typical Board Measurements: Linearity - Intermodulation Distortion

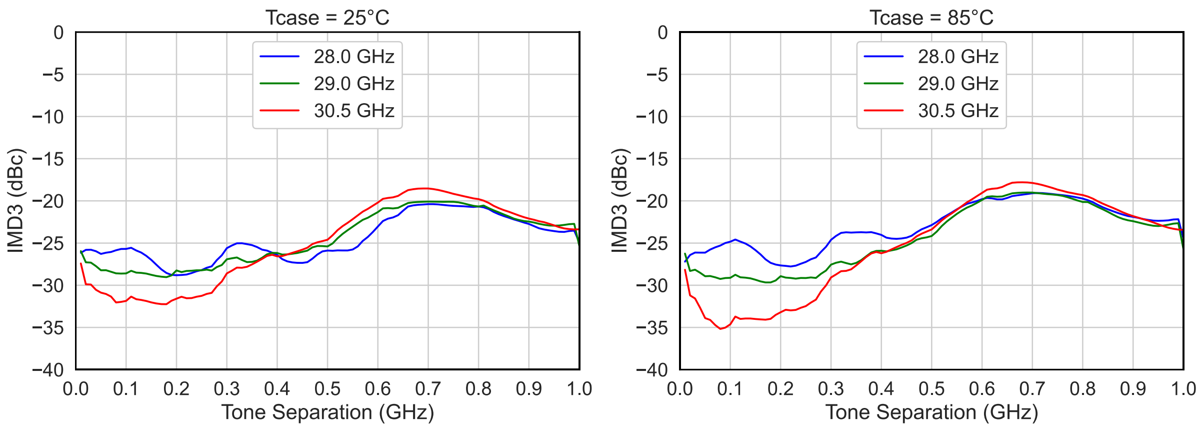
Test conditions: CW, Vd = 20V, fcarrier = 29GHz, Δf = 10MHz, Tcase = 25°C / 85°C

IMD3 vs. Output Power vs. Idq



Test conditions: CW, Vd = 20V, Idq = 170mA, Pout / Tone = 32dBm, Tcase = 25°C / 85°C

IMD3 vs. Tone Separation vs. Frequency

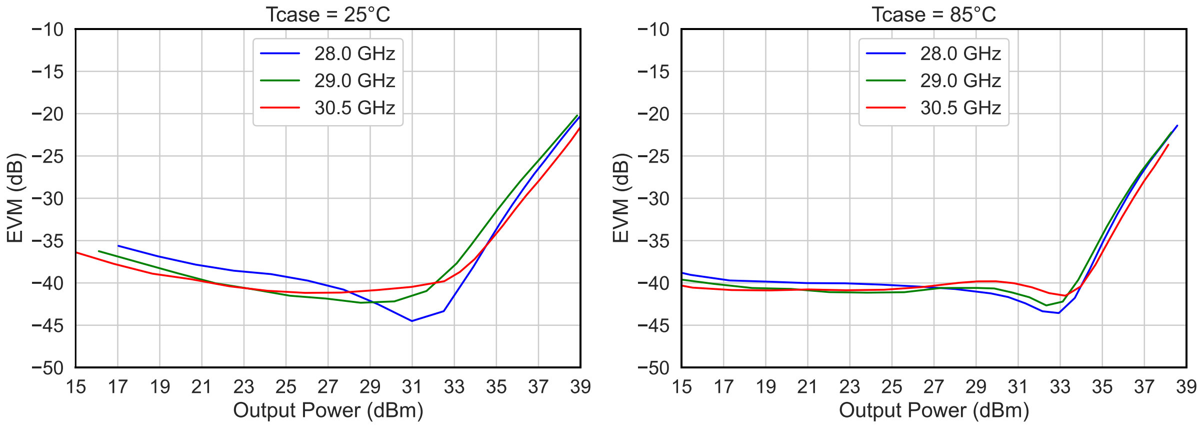


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

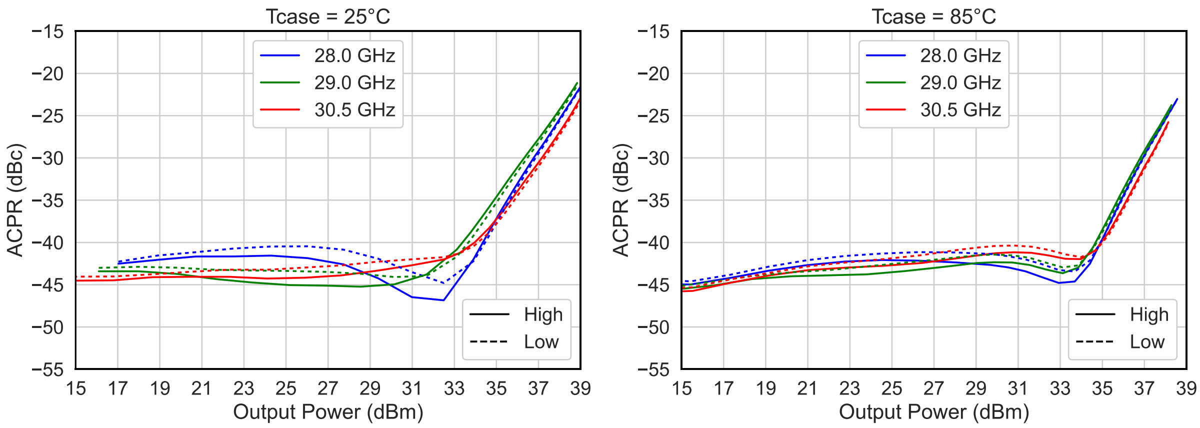
Typical Board Measurements: Linearity - Modulated Signals

Test conditions: Vd = 20V, Idq = 170mA, 8PSK, BW = 15MHz, Roll-off = 0.2, PAPR = 5.1dB

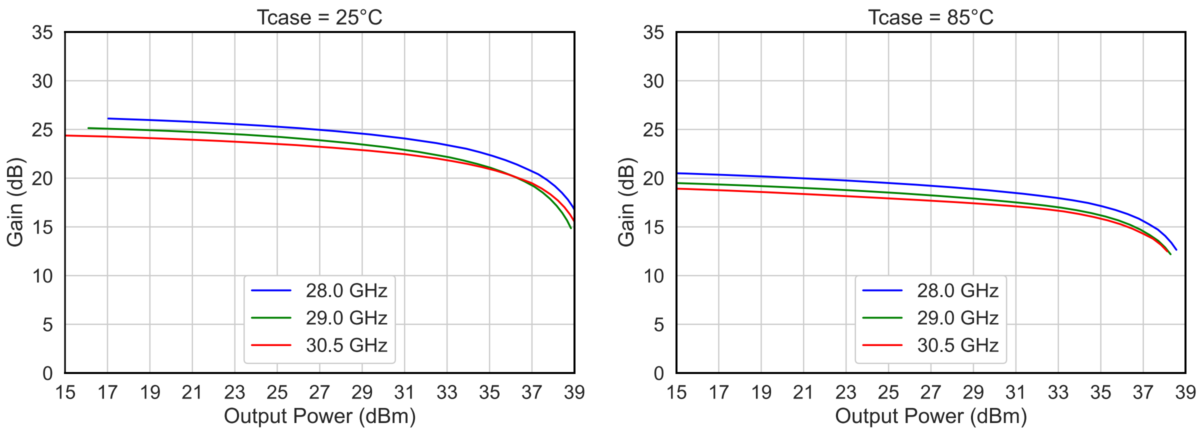
EVM vs. Output Power vs. Frequency



ACPR vs. Output Power vs. Frequency



Gain vs. Output Power vs. Frequency

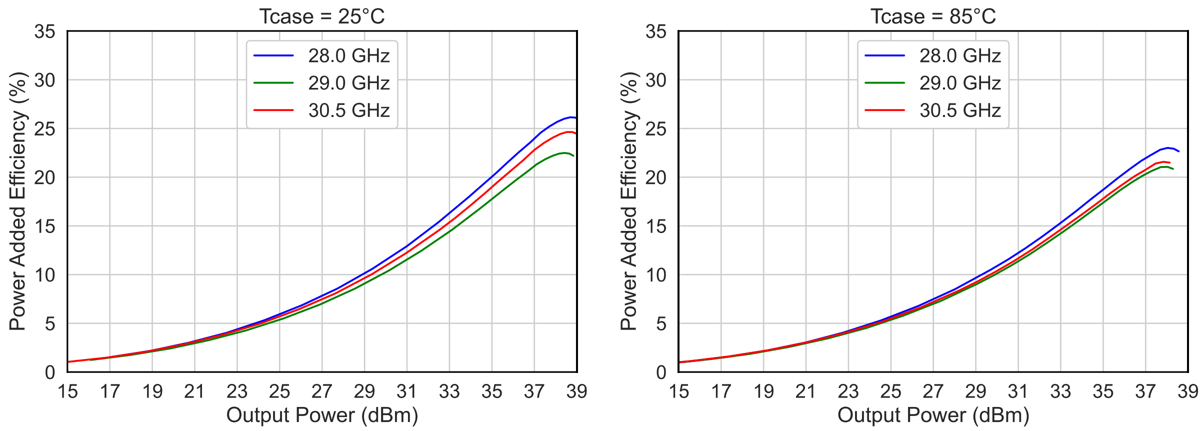


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Typical Board Measurements: Linearity - Modulated Signals

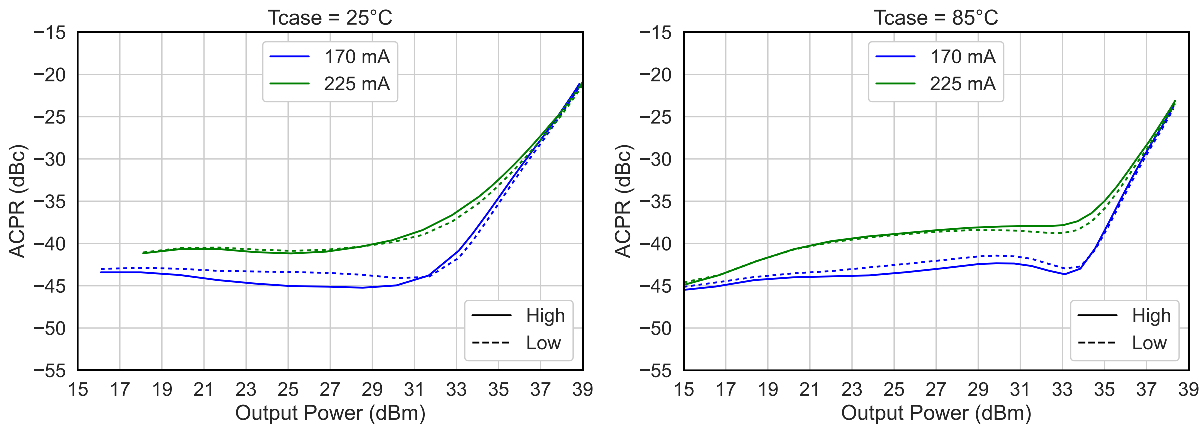
Test conditions: Vd = 20V, Idq = 170mA, 8PSK, BW = 15MHz, Roll-off = 0.2, PAPR = 5.1dB

Power Added Efficiency vs. Output Power vs. Frequency

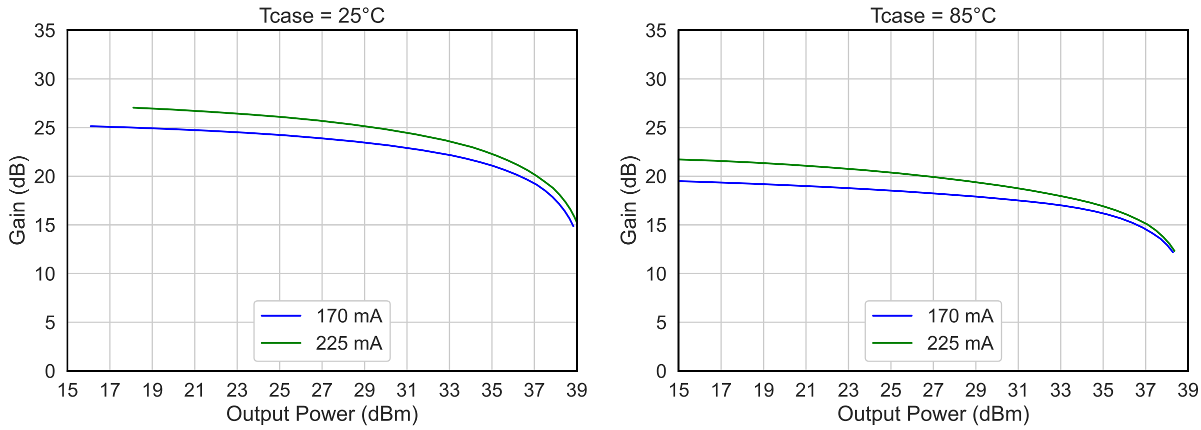


Test conditions: Vd = 20V, f_0 = 29GHz, 8PSK, BW = 15MHz, Roll-off = 0.2, PAPR = 5.1dB

ACPR vs. Output Power vs. Idq



Gain vs. Output Power vs. Idq

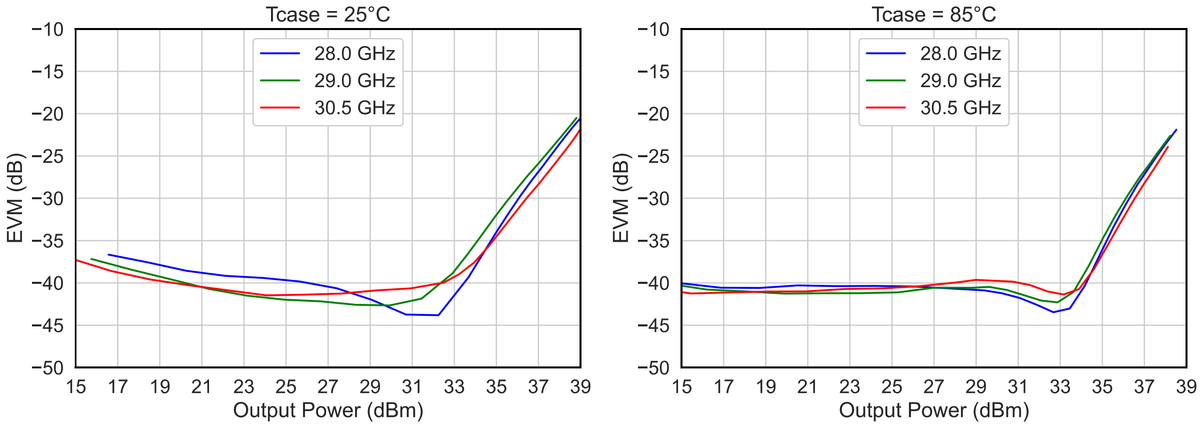


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

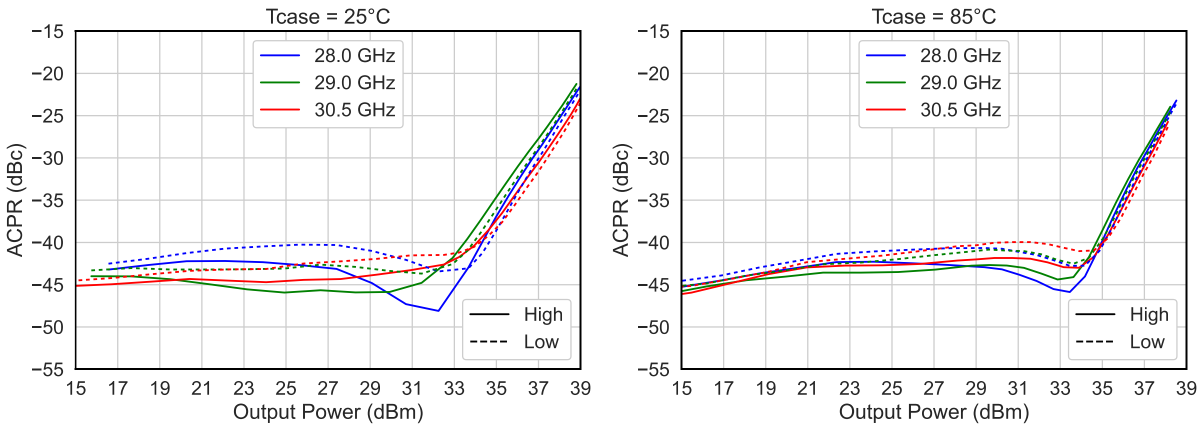
Typical Board Measurements: Linearity - Modulated Signals

Test conditions: Vd = 20V, Idq = 170mA, 8PSK, BW = 30MHz, Roll-off = 0.2, PAPR = 5.1dB

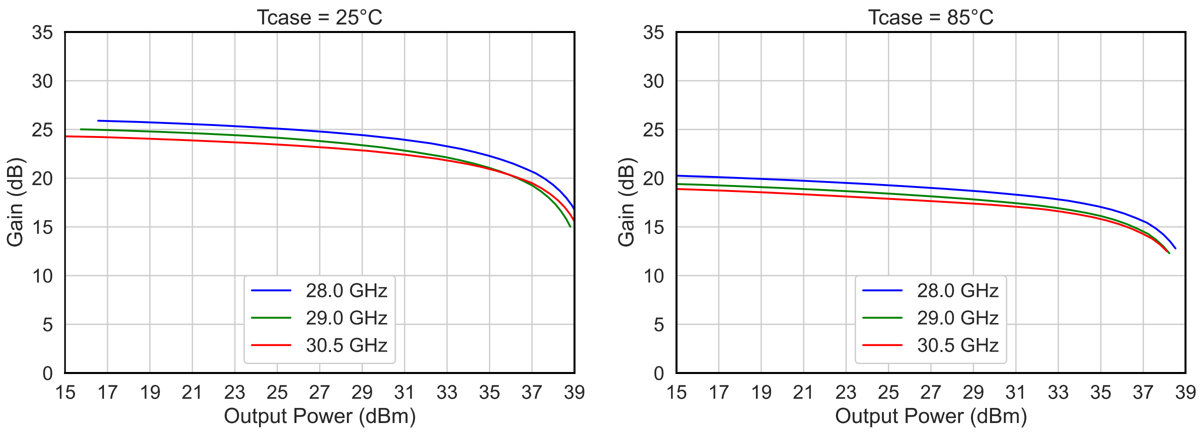
EVM vs. Output Power vs. Frequency



ACPR vs. Output Power vs. Frequency



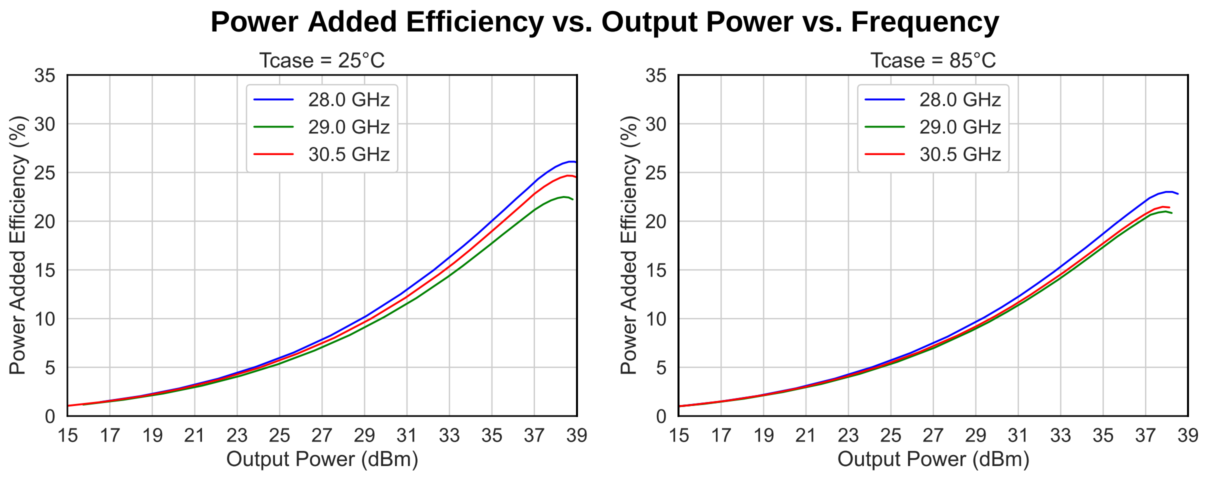
Gain vs. Output Power vs. Frequency



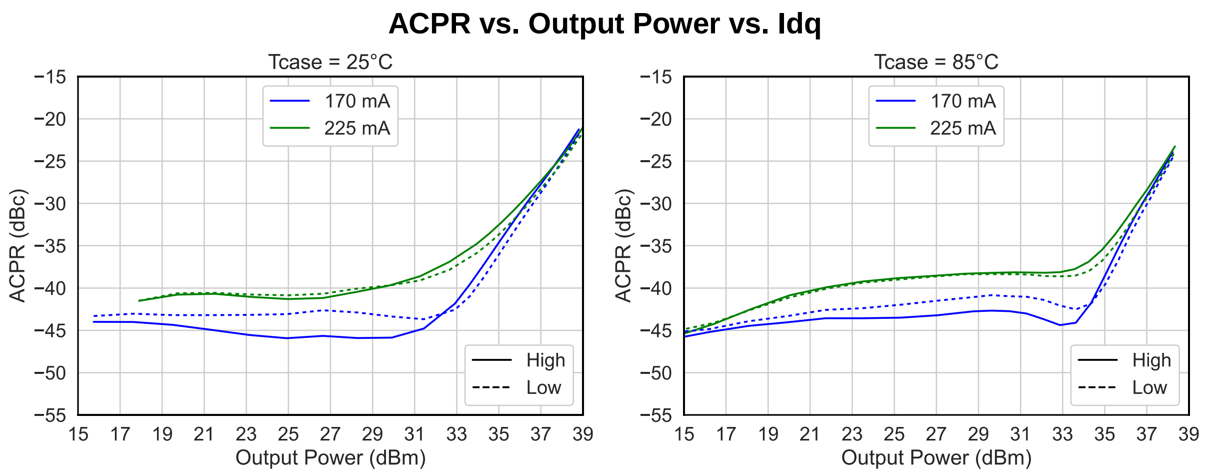
Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

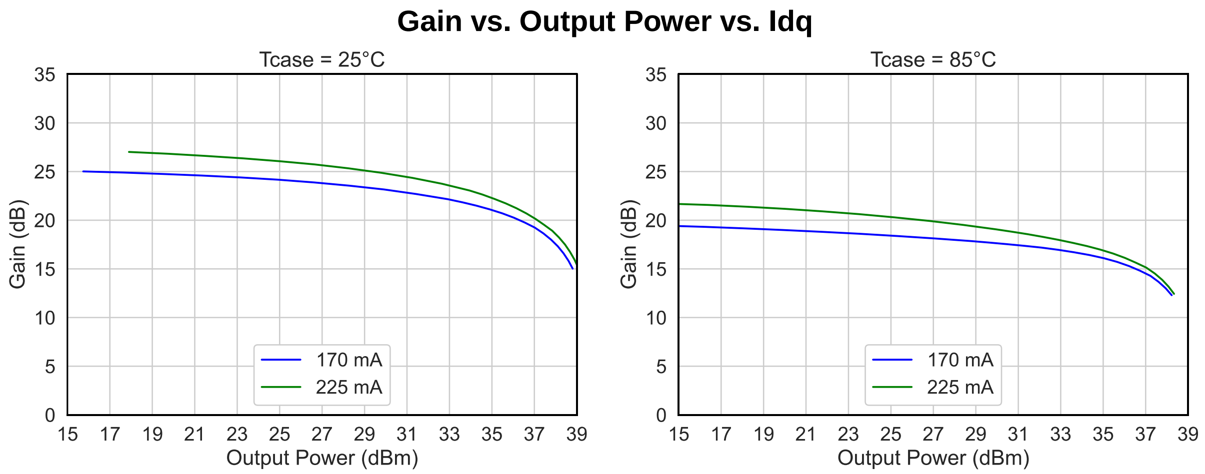
Typical Board Measurements: Linearity - Modulated Signals

Test conditions: Vd = 20V, Idq = 170mA, 8PSK, BW = 30MHz, Roll-off = 0.2, PAPR = 5.1dB



Test conditions: Vd = 20V, f_0 = 29GHz, 8PSK, BW = 30MHz, Roll-off = 0.2, PAPR = 5.1dB



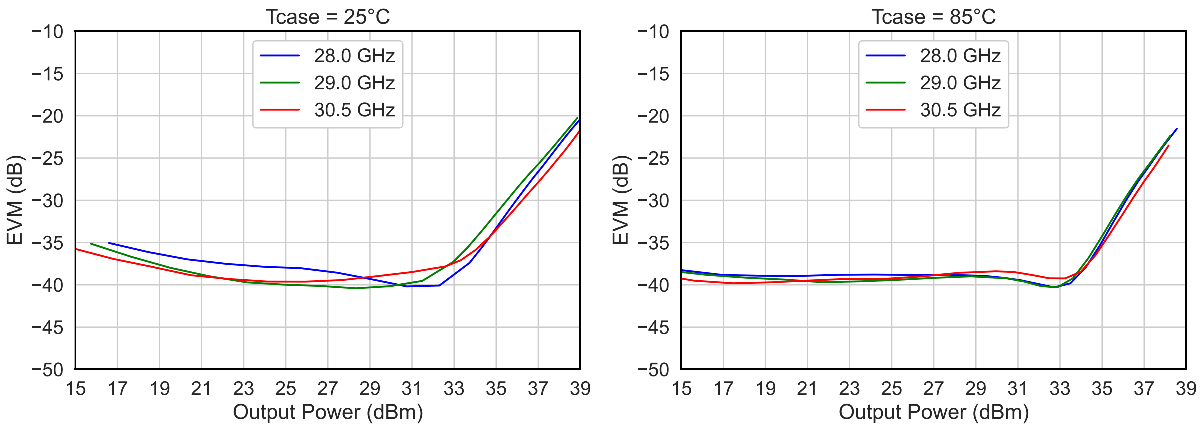


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

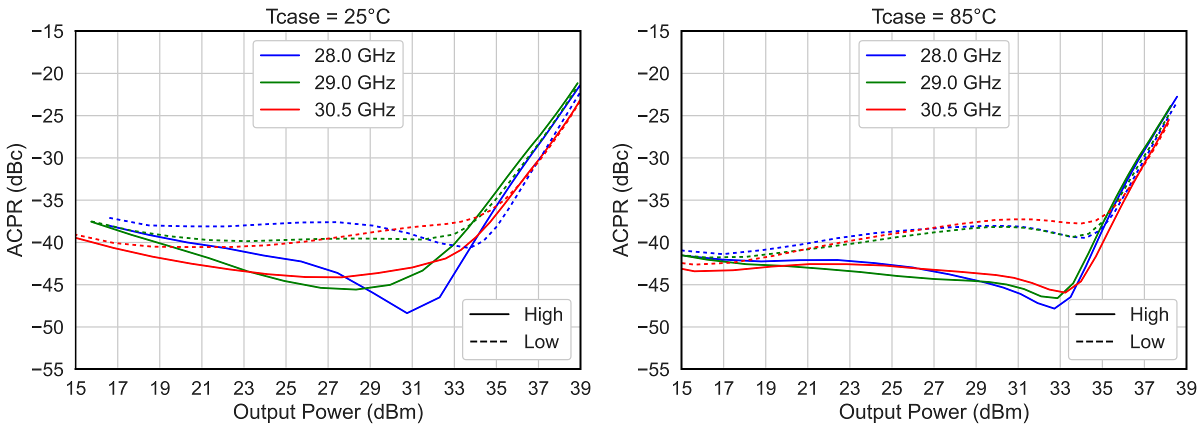
Typical Board Measurements: Linearity - Modulated Signals

Test conditions: Vd = 20V, Idq = 170mA, 8PSK, BW = 100MHz, Roll-off = 0.2, PAPR = 5.1dB

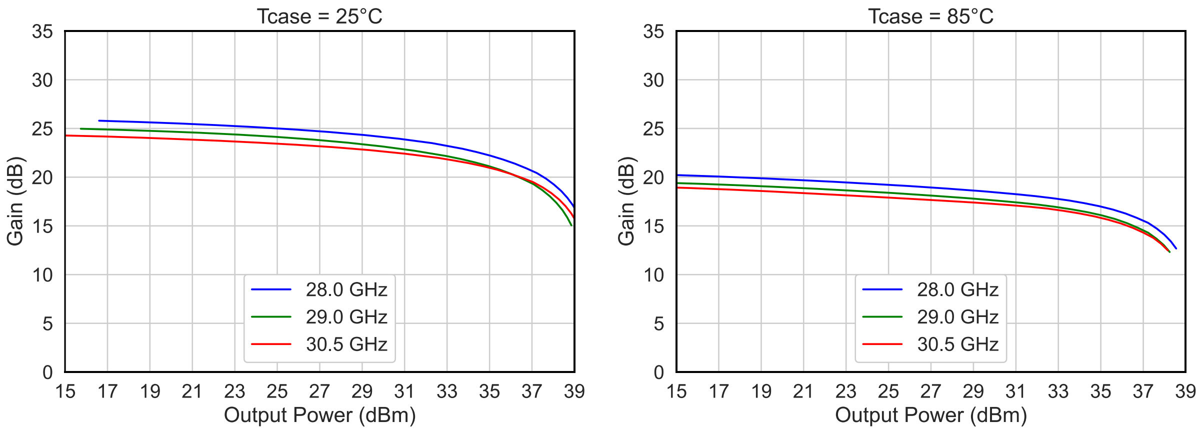
EVM vs. Output Power vs. Frequency



ACPR vs. Output Power vs. Frequency



Gain vs. Output Power vs. Frequency

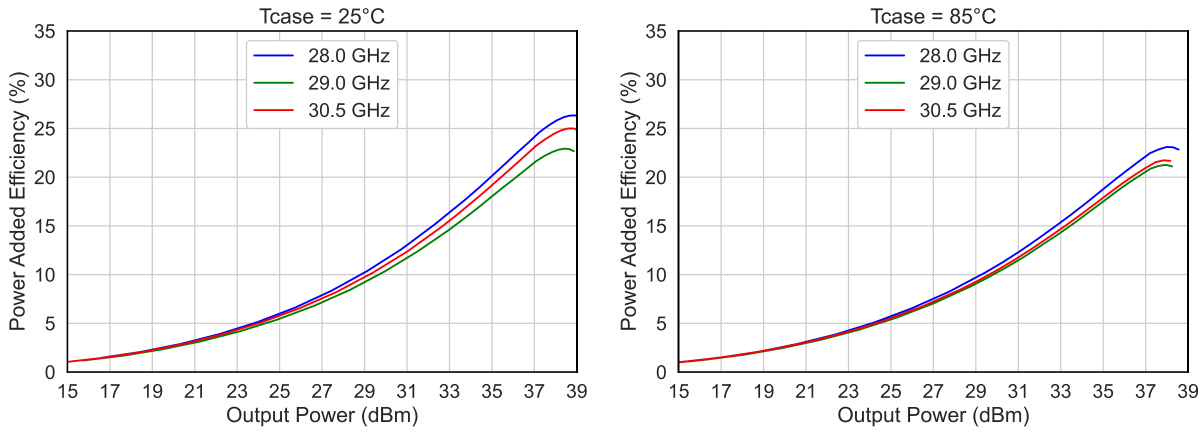


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Typical Board Measurements: Linearity - Modulated Signals

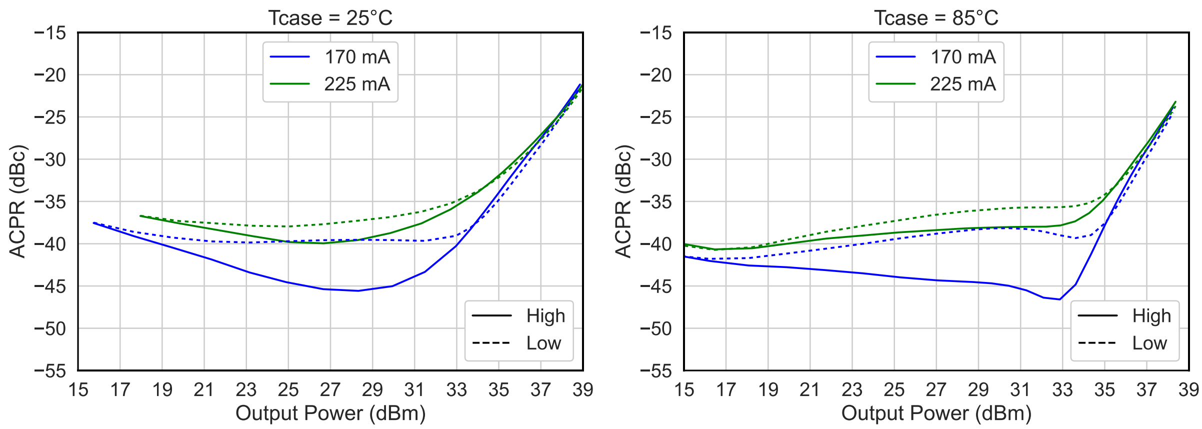
Test conditions: Vd = 20V, Idq = 170mA, 8PSK, BW = 100MHz, Roll-off = 0.2, PAPR = 5.1dB

Power Added Efficiency vs. Output Power vs. Frequency

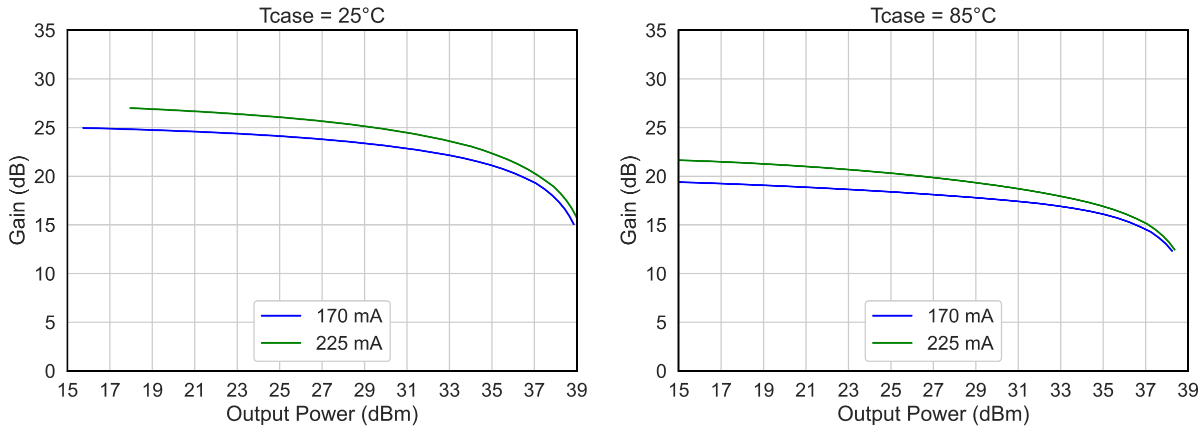


Test conditions: Vd = 20V, f_0 = 29GHz, 8PSK, BW = 30MHz, Roll-off = 0.2, PAPR = 5.1dB

ACPR vs. Output Power vs. Idq



Gain vs. Output Power vs. Idq

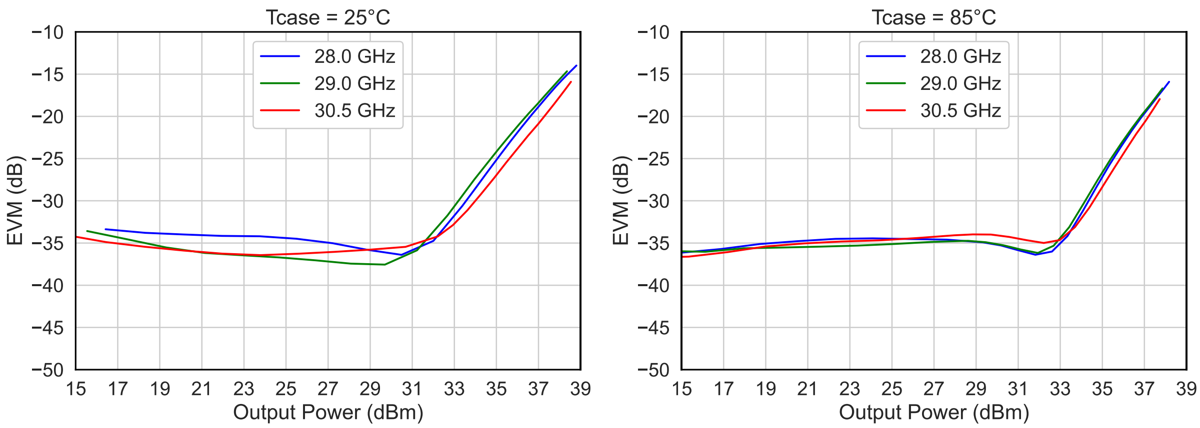


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

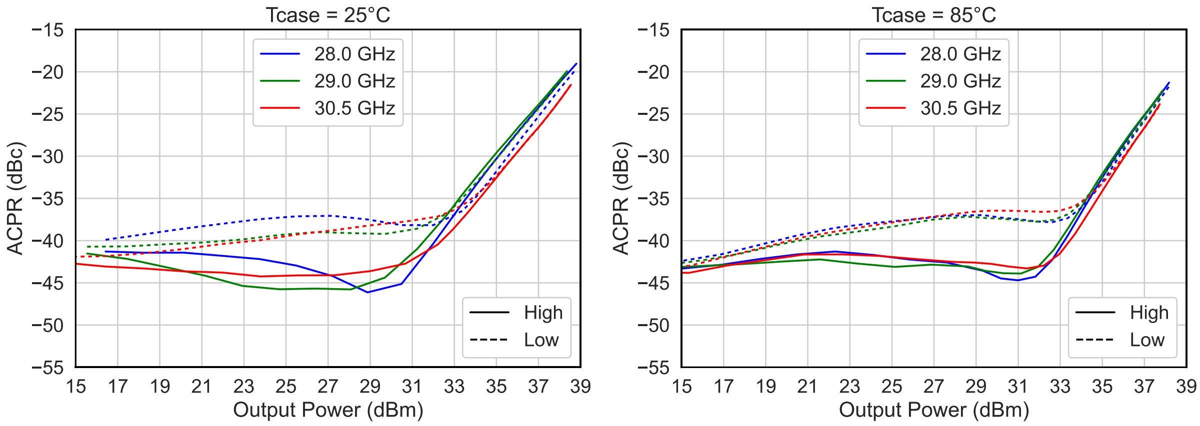
Typical Board Measurements: Linearity - Modulated Signals

Test conditions: Vd = 20V, Idq = 170mA, 256QAM, BW = 100MHz, Roll-off = 0.2, PAPR = 7.2dB

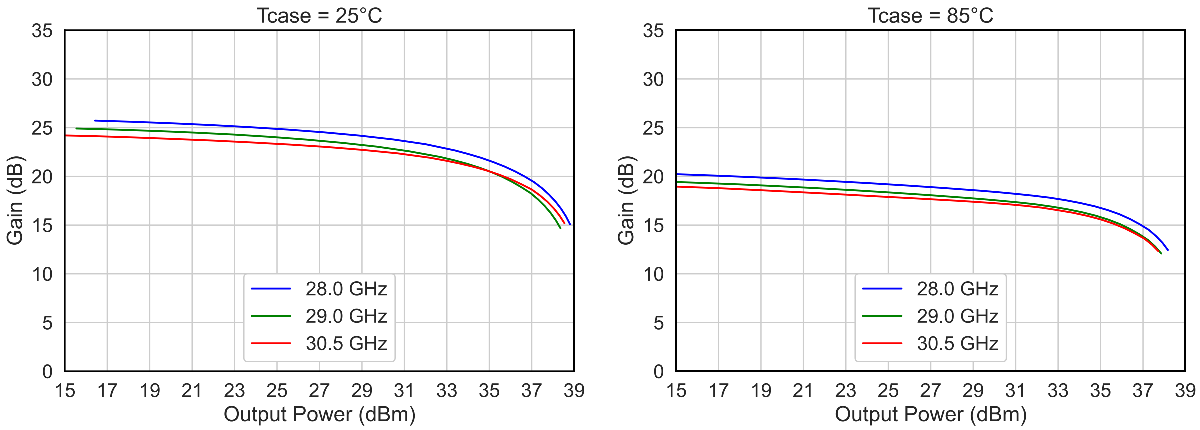
EVM vs. Output Power vs. Frequency



ACPR vs. Output Power vs. Frequency



Gain vs. Output Power vs. Frequency

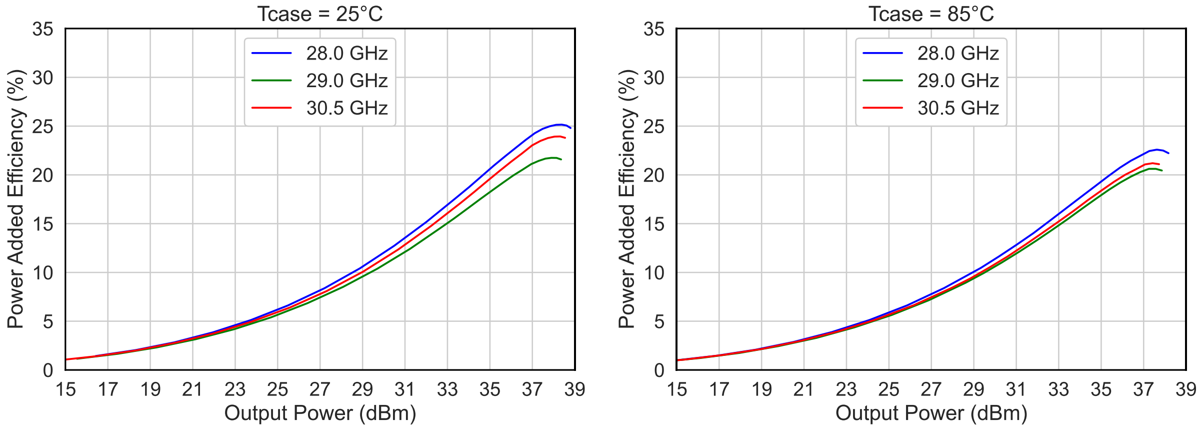


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Typical Board Measurements: Linearity - Modulated Signals

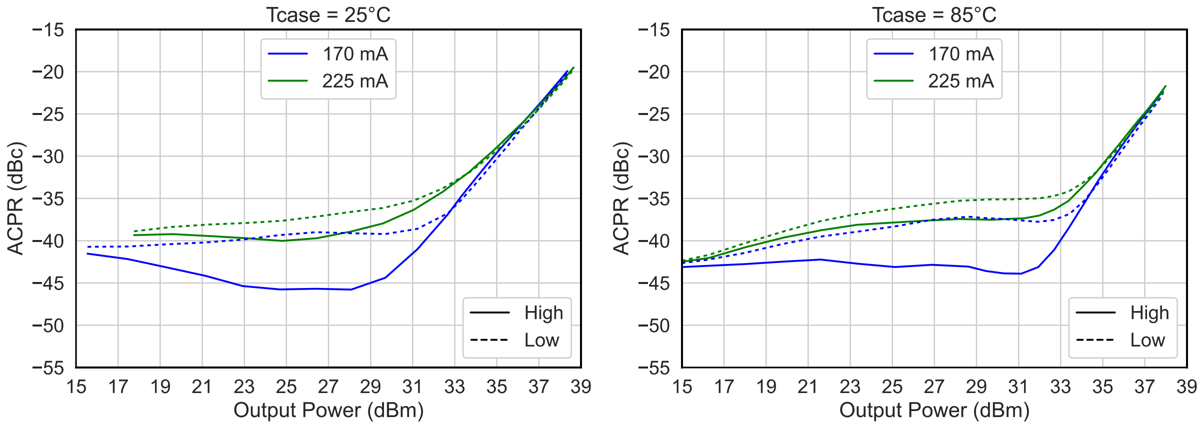
Test conditions: Vd = 20V, Idq = 170mA, 256QAM, BW = 100MHz, Roll-off = 0.2, PAPR = 7.2dB

Power Added Efficiency vs. Output Power vs. Frequency

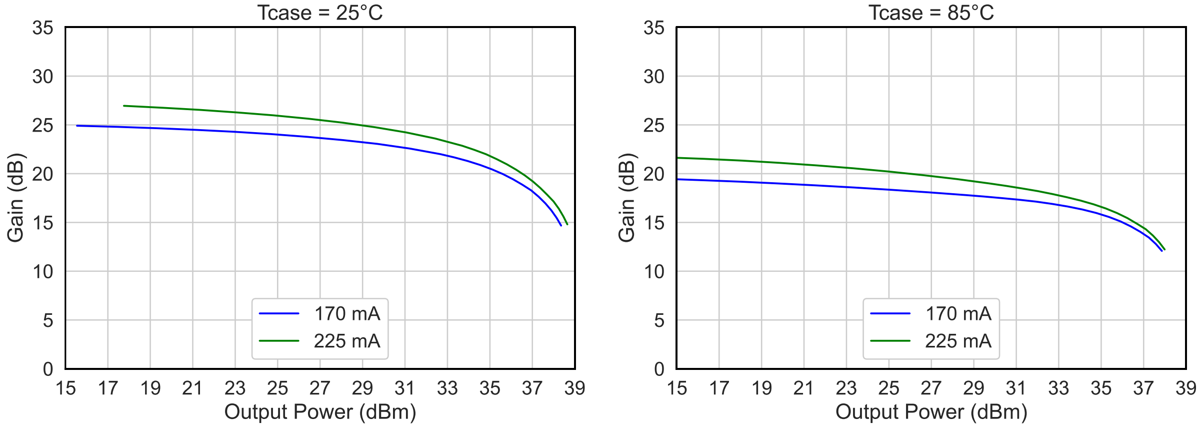


Test conditions: Vd = 20V, f_0 = 29GHz, 256QAM, BW = 100MHz, Roll-off = 0.2, PAPR = 7.2dB

ACPR vs. Output Power vs. Idq



Gain vs. Output Power vs. Idq

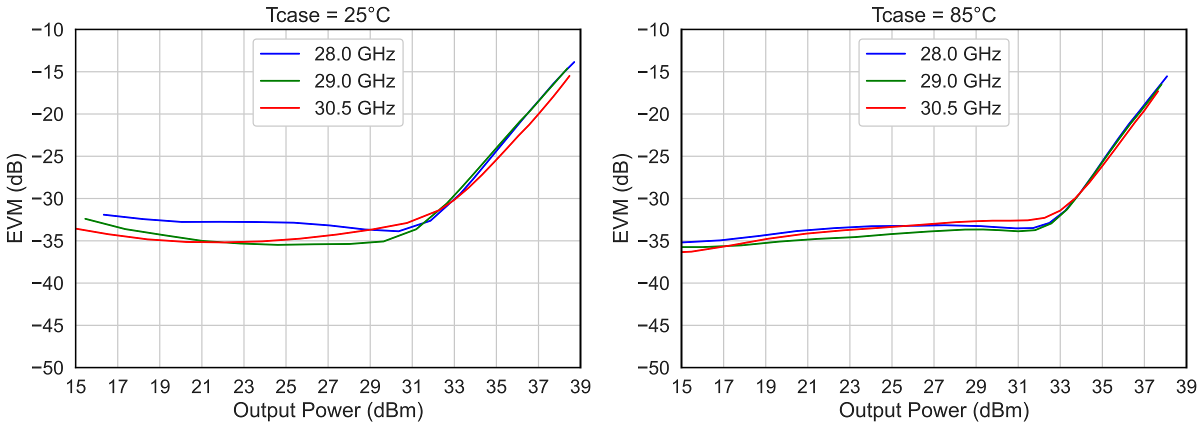


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

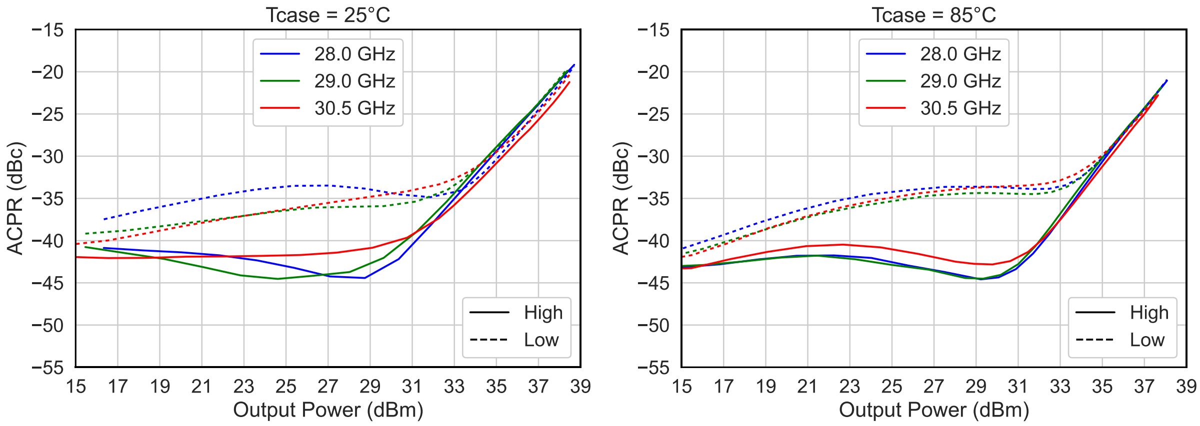
Typical Board Measurements: Linearity - Modulated Signals

Test conditions: Vd = 20V, Idq = 170mA, 256QAM, BW = 400MHz, Roll-off = 0.2, PAPR = 7.2dB

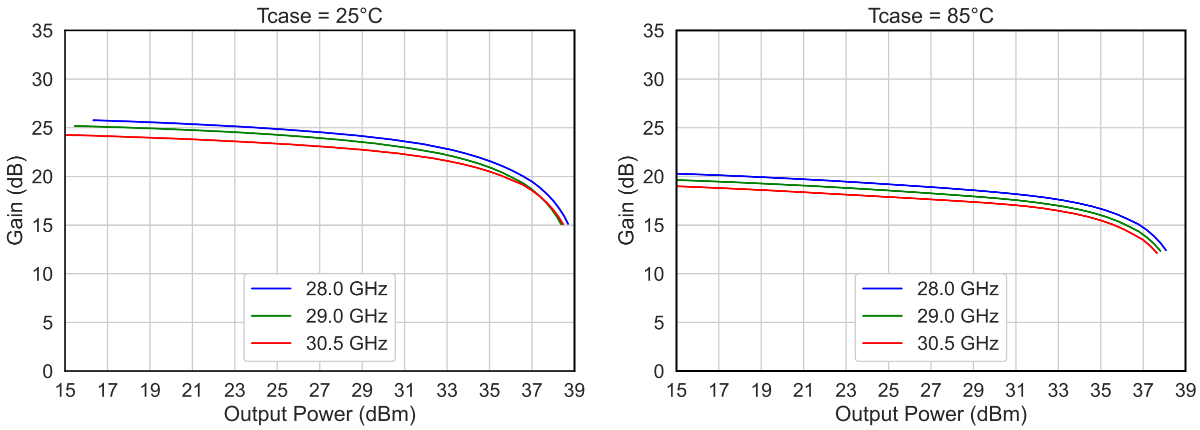
EVM vs. Output Power vs. Frequency



ACPR vs. Output Power vs. Frequency



Gain vs. Output Power vs. Frequency

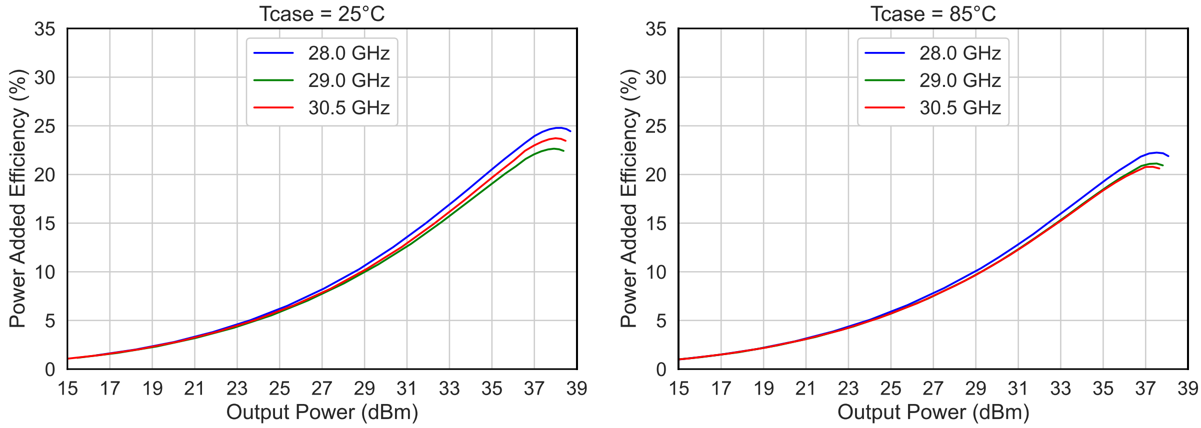


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Typical Board Measurements: Linearity - Modulated Signals

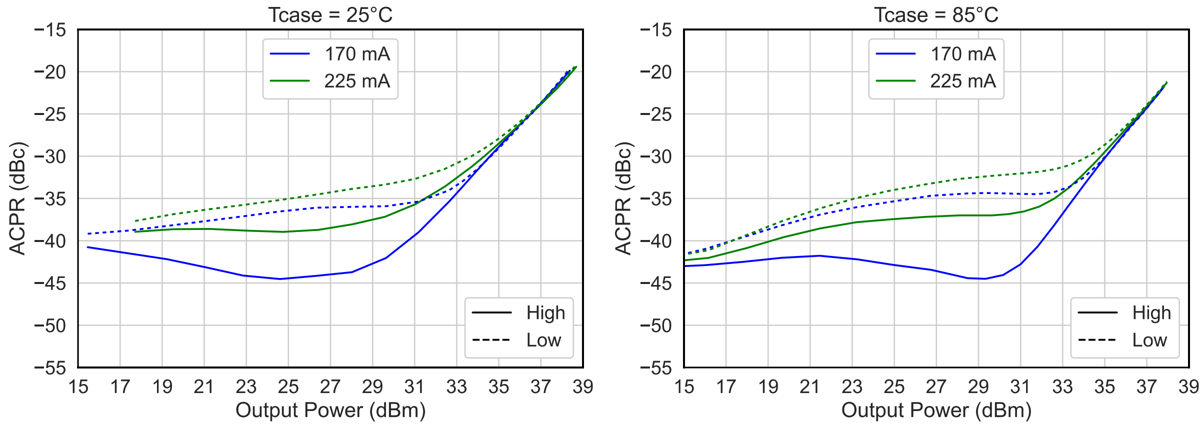
Test conditions: Vd = 20V, Idq = 170mA, 256QAM, BW = 400MHz, Roll-off = 0.2, PAPR = 7.2dB

Power Added Efficiency vs. Output Power vs. Frequency

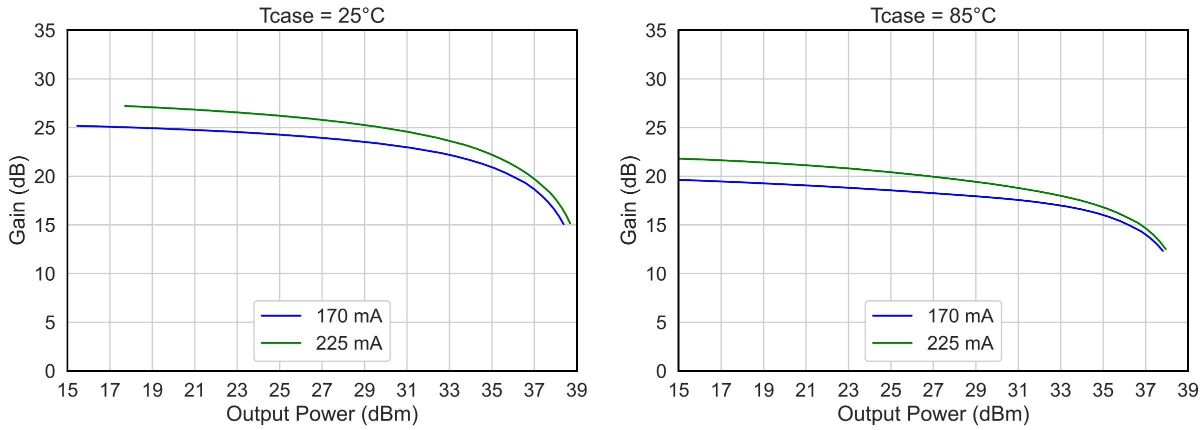


Test conditions: Vd = 20V, f_0 = 29GHz, 256QAM, BW = 400MHz, Roll-off = 0.2, PAPR = 7.2dB

ACPR vs. Output Power vs. Idq



Gain vs. Output Power vs. Idq

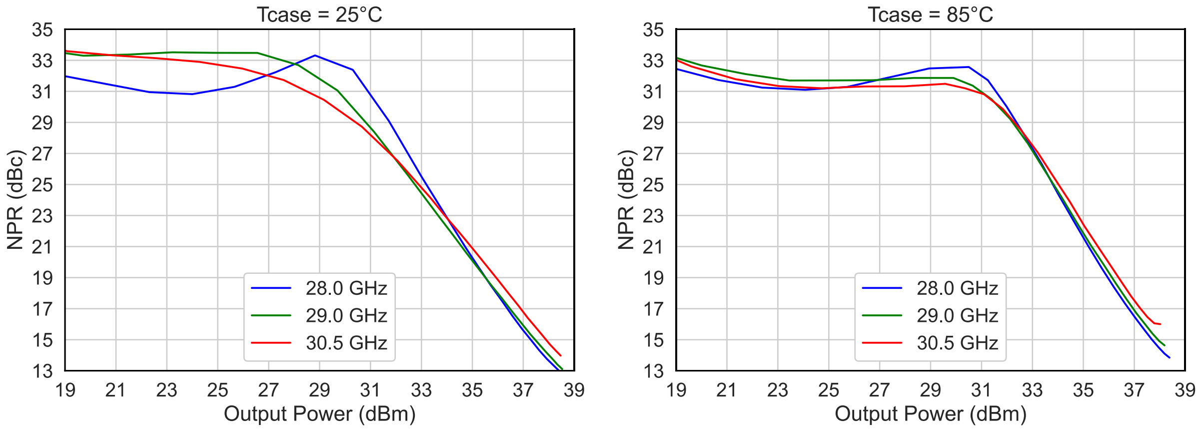


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

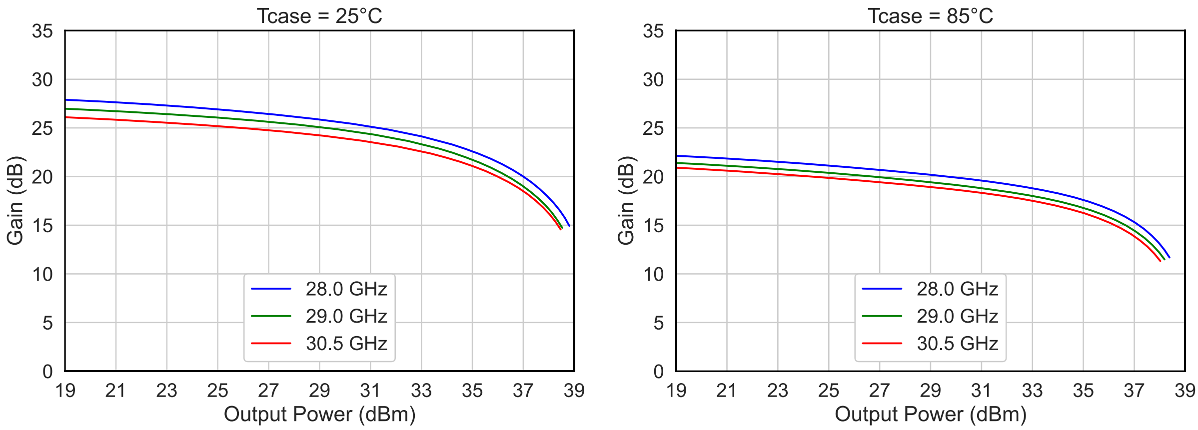
Typical Board Measurements: Linearity - Noise Power Ratio

Test conditions: Vd = 20V, Idq = 225mA, BW = 45MHz, Notch: 10%, Number of tones: 4501

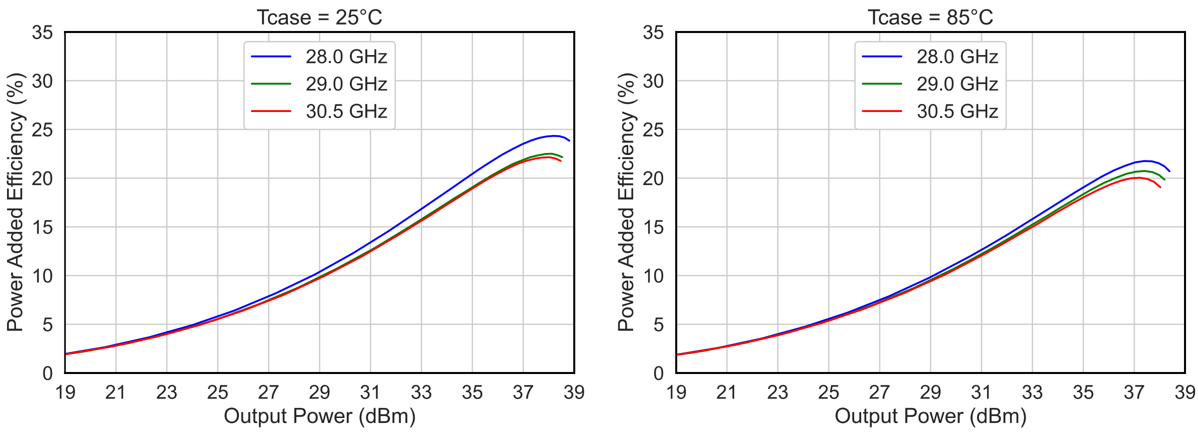
NPR vs. Output Power vs. Frequency



Gain vs. Output Power vs. Frequency



Power Added Efficiency vs. Output Power vs. Frequency

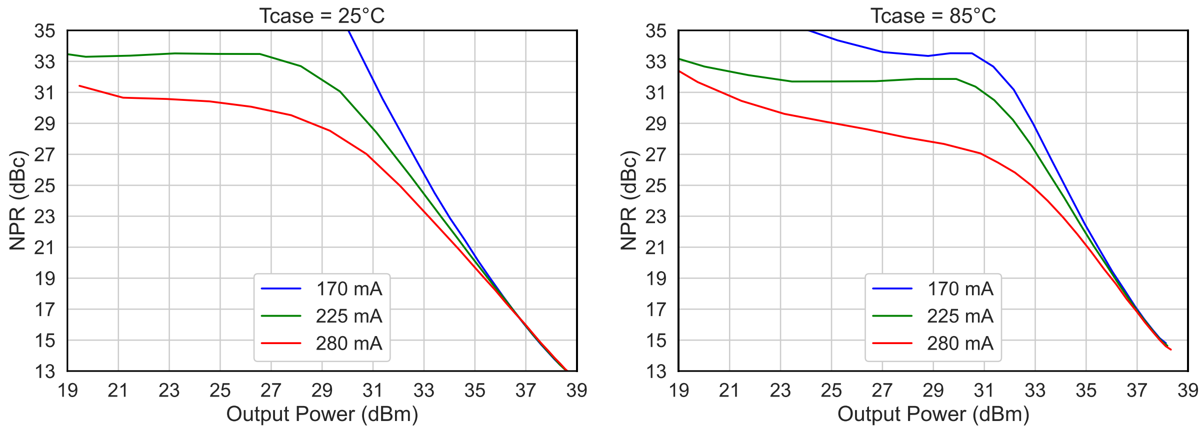


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

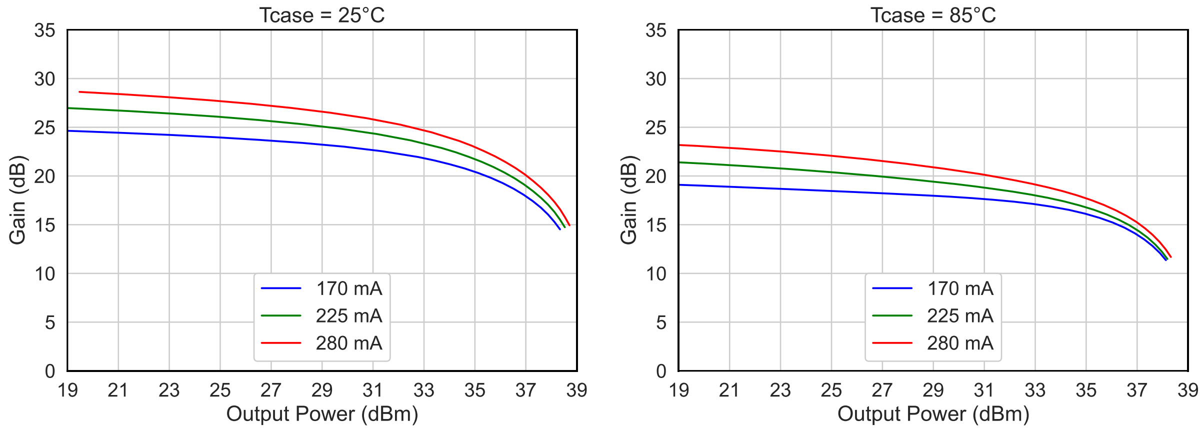
Typical Board Measurements: Linearity - Noise Power Ratio

Test conditions: Vd = 20V, fc = 29GHz, BW = 45MHz, Notch: 10%, Number of tones: 4501

NPR vs. Output Power vs. Idq



Gain vs. Output Power vs. Idq

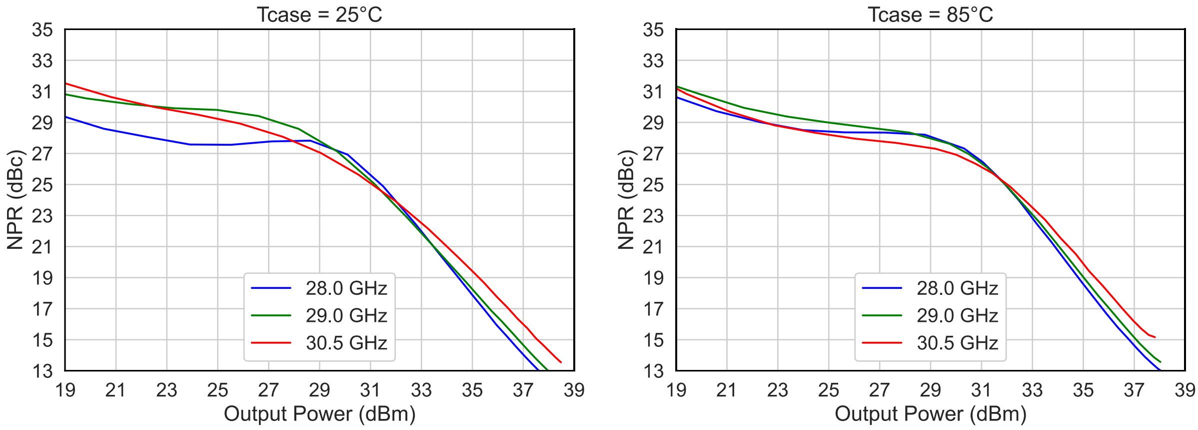


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

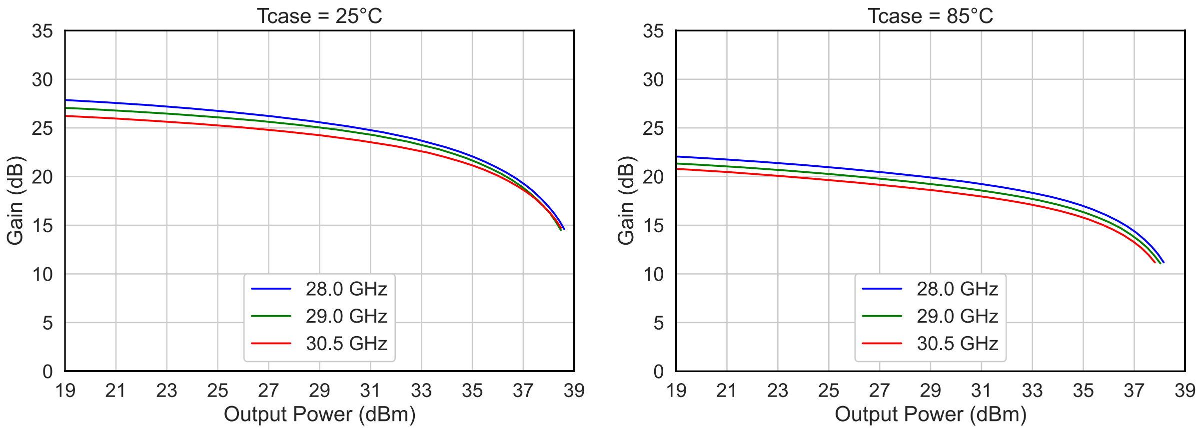
Typical Board Measurements: Linearity - Noise Power Ratio

Test conditions: Vd = 20V, Idq = 225mA, BW = 1GHz, Notch: 10%, Number of tones: 10 001

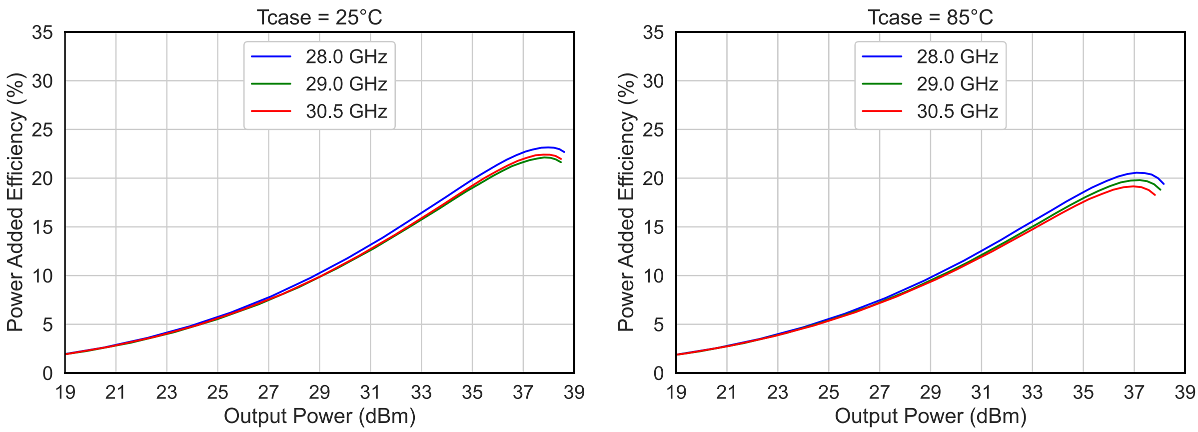
NPR vs. Output Power vs. Frequency



Gain vs. Output Power vs. Frequency



Power Added Efficiency vs. Output Power vs. Frequency

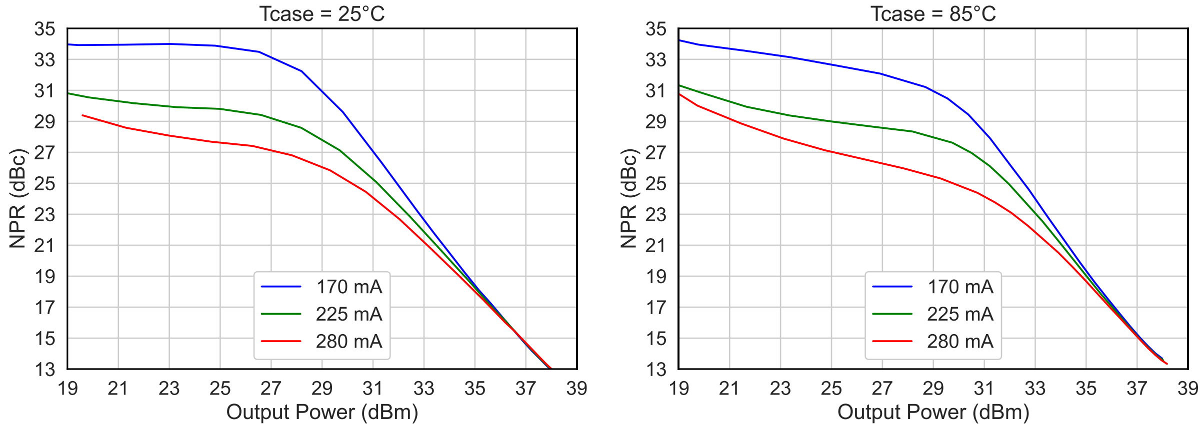


Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

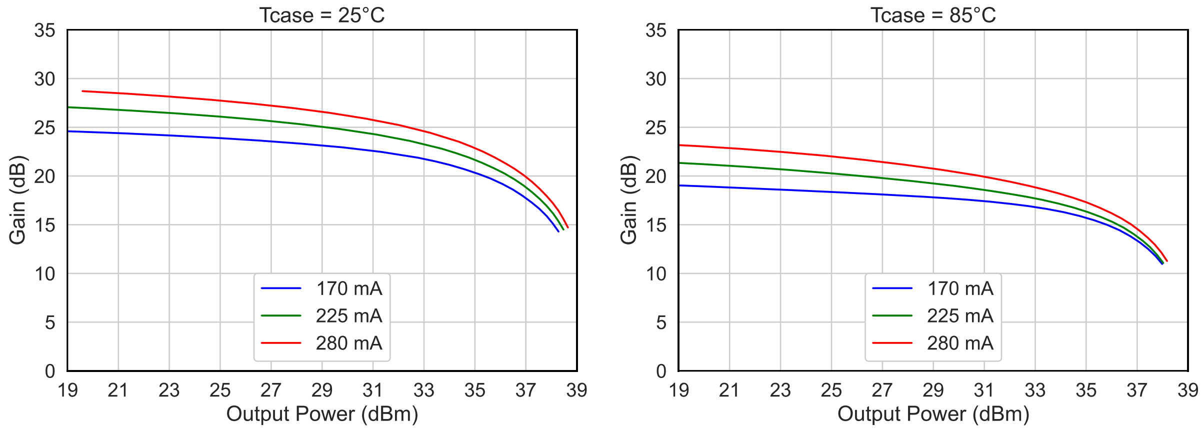
Typical Board Measurements: Linearity - Noise Power Ratio

Test conditions: Vd = 20V, fc = 29GHz, BW = 1GHz, Notch: 10%, Number of tones: 10 001

NPR vs. Output Power vs. Idq

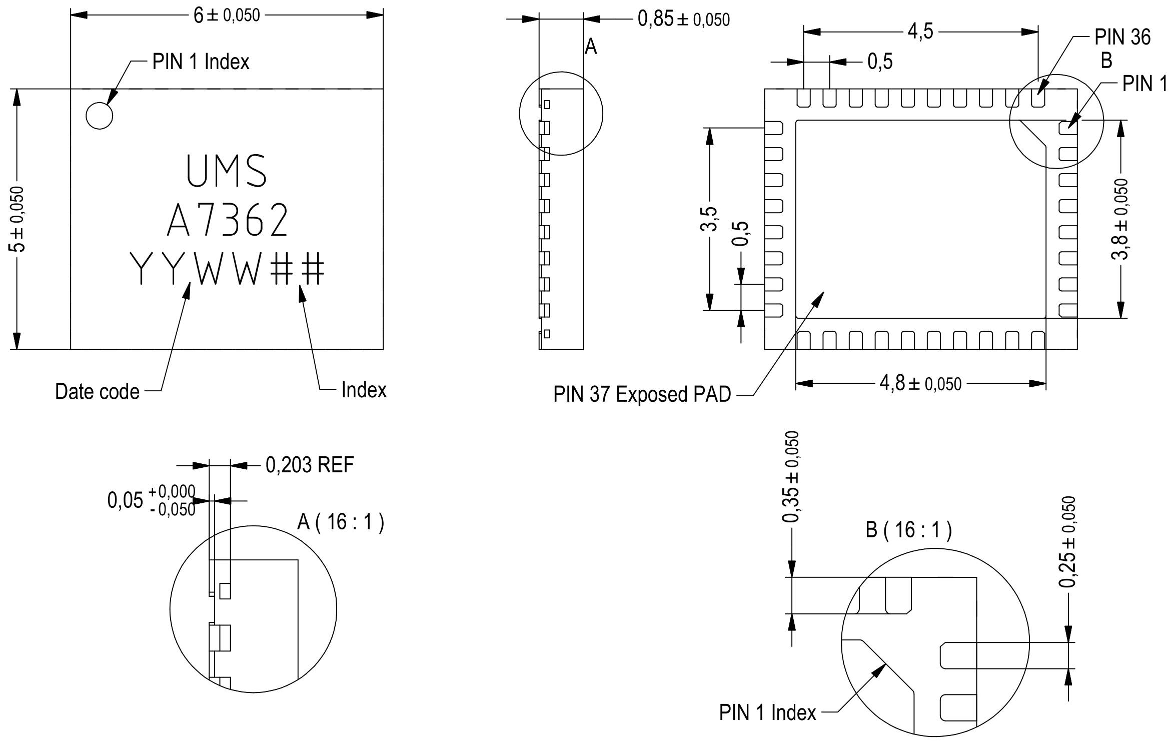


Gain vs. Output Power vs. Idq



Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Package Outline[1]



Ni-Pd-Au-Ag, Lead Free	(Green)	1	VD3	13	GND[2]	25	NC [3]
Units :	mm	2	NC[3]	14	RF IN	26	VD3
From the standard :	JEDEC MO-220	3	VG3	15	GND[2]	27	NC[3]
	VHJD	4	VD2	16	NC[3]	28	NC[3]
37	GND[2]	5	VG2	17	NC[3]	29	NC[3]
		6	VD1	18	NC[3]	30	GND[2]
		7	GND[2]	19	VG1	31	RF OUT
		8	VG1	20	GND[2]	32	GND[2]
		9	NC[3]	21	VD1	33	NC[3]
		10	NC[3]	22	VG2	34	NC[3]
		11	NC[3]	23	VD2	35	NC[3]
		12	NC[3]	24	VG3	36	NC[3]

[1] Refer to the application note AN0017 (https://www.ums-rf.com) for general consideration and recommendations for molded plastic QFN/DFN packages.

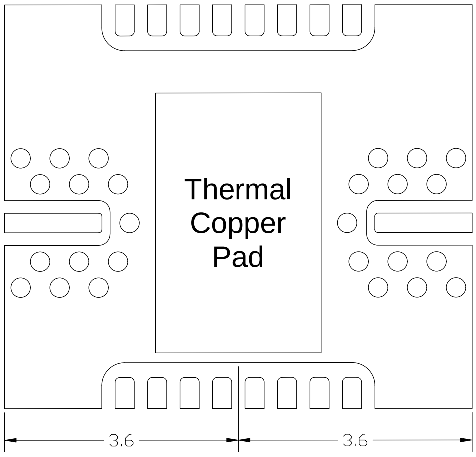
[2] It is strongly recommended to ground all pins identified as GND through the PCB board. Ensure that the PCB board is designed to provide the best possible ground to the package.

[3] NC: Not Connected.

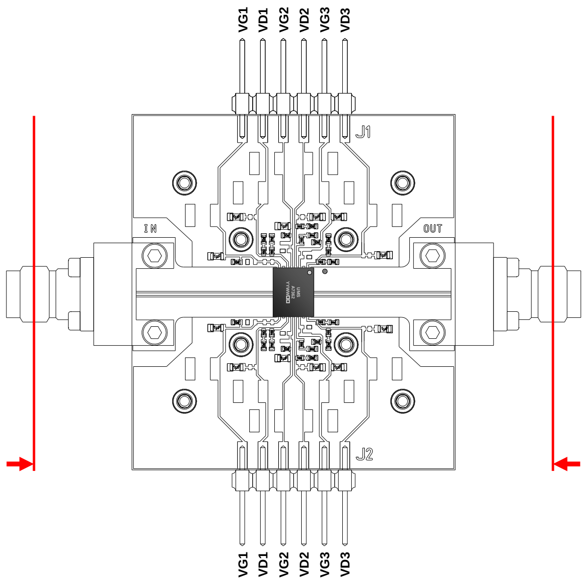
Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Measurement Reference Planes

The reference planes used for S21, power and linearity measurements given above are symmetrical from the symmetrical axis of the package as defined on the drawing beside. The input and output reference planes are located at 3.6mm offset (input wise and output wise respectively) from this axis.



Input and Output Return Loss (S11 and S22) are given at Evaluation Board connectors' reference planes as defined on the drawing beside.



ESD Sensitivity

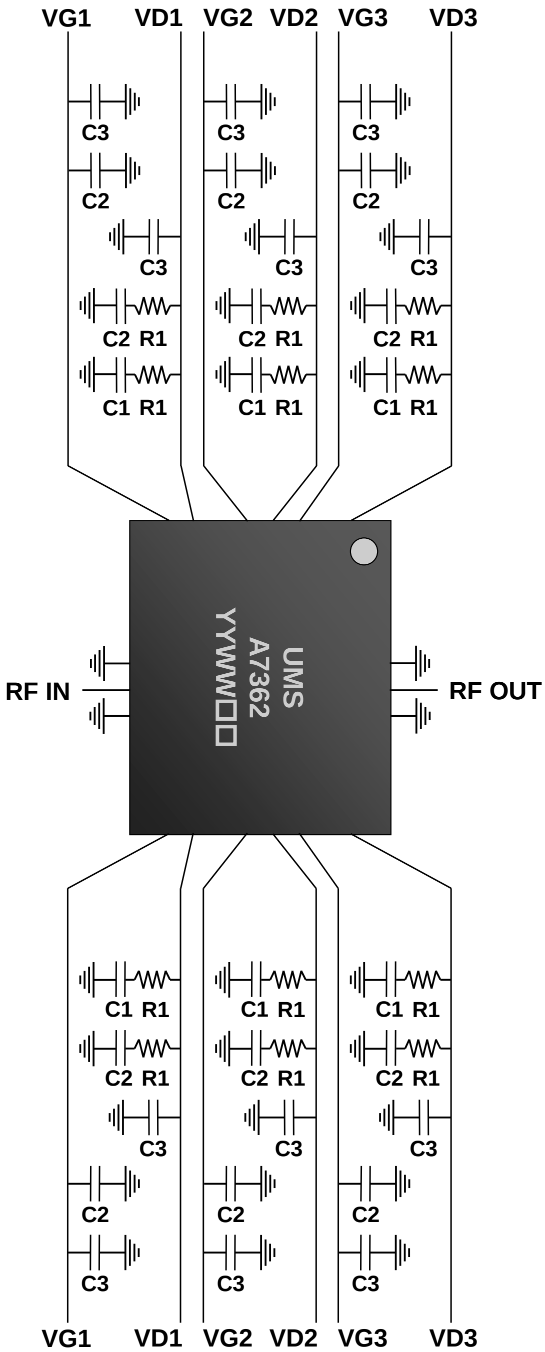
Parameter	Classification	Standard
Human Body Model (HBM)	1A	ANSI/ESDA/JEDEC JS-001

Package Information

Parameter	Value
Package body material	RoHS-compliant
	Low stress Injection Molded Plastic
Lead finish	100% Ni-Pd-Au-Ag
MSL Rating	MSL3

Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Recommended Assembly Plan



Note : Drain (VD's) and Gate (VG's) must be biased from both sides.

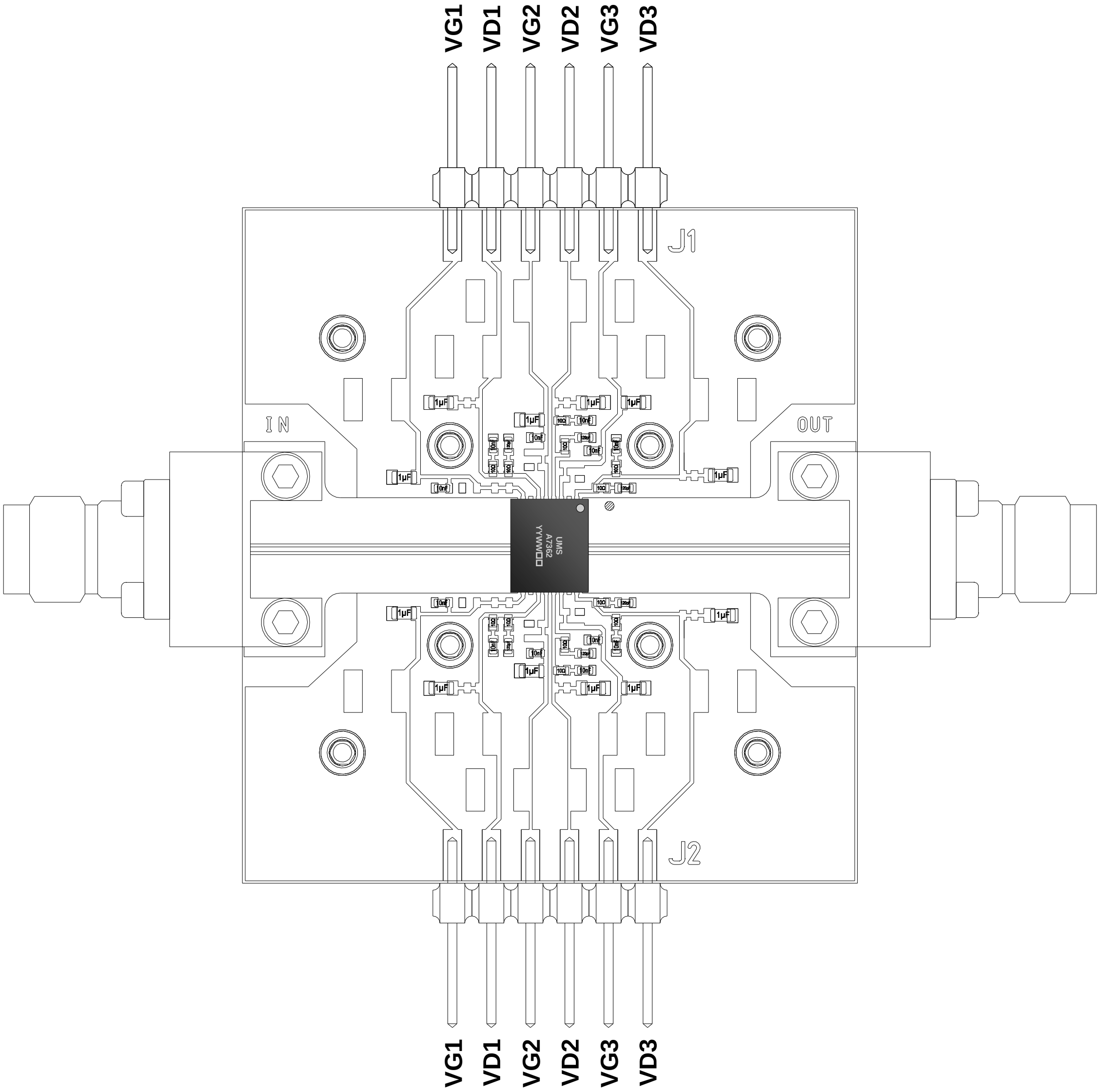
Bill of Materials

Component	Value	Description
C1	120pF	CAP, 120pF, ±10%, 50V, C0G, 0402
C2	10nF	CAP, 10nF, ±10%, 50V, X7R, 0402
C3	1µF	CAP, 1µF, ±10%, 50V, X5R, 0603
R1	10Ω	RES, 10Ohm, ±1%, 1/16W, 0402

Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Evaluation Board (EVB)

- Compatible with the proposed footprint.
- Based on 8mils RO4350B or equivalent.
- Recommended for the implementation of this product on a module board.
- See application note AN0031 for details.

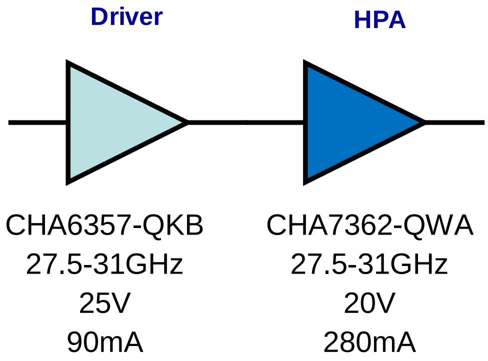


Note: All board measurements are performed using shielded cables, even for DC bias, to ensure safe operation.

Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Recommended UMS Power Chain

The CHA7362-QWA is recommended with the CHA6357-QKB as driver.
Total Gain: > 50dB
For more information about the CHA6357-QKB, visit our web site www.ums-rf.com



Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com

Recommended Package Footprint

Refer to the application note AN0017 available at https://www.ums-rf.com for package foot print recommendations.

SMD Mounting Procedure

For the mounting process standard techniques involving solder paste and a suitable reflow process can be used. For further details, see application note AN0017 at https://www.ums-rf.com.

Recommended Environmental Management

UMS products are compliant with the regulation in particular with the directives RoHS N°2011/65 and REACh N°1907/2006. More environmental data are available in the application note AN0019 also available at https://www.ums-rf.com.

Recommended ESD Management

Refer to the application note AN0020 available at https://www.ums-rf.com for ESD sensitivity and handling recommendations for the UMS package products.

Description of Evaluation Board

Refer to the application note AN0031 available at https://www.ums-rf.com for the description of Evaluation Board for Packaged Die and recommendations for this UMS package product.

Ordering Information

QFN 6x5 Package:	CHA7362-QWA/XY	
	Stick: XY = 20	Tape & reel: XY = 21
Evaluation Board:	EVB-CHA7362-QWA	

Bât. Charmille - Parc Mosaic - 10, Avenue du Québec - 91140 VILLEBON-SUR-YVETTE - France
Tel.: +33 (0) 1 69 86 32 00 - Fax: +33 (0) 1 69 86 34 34 - www.ums-rf.com