

FEATURES

·BROAD BAND INTERNALLY MATCHED HEMT

·HIGH POWER

Pout= 47.0dBm at Pin= 42.0dBm

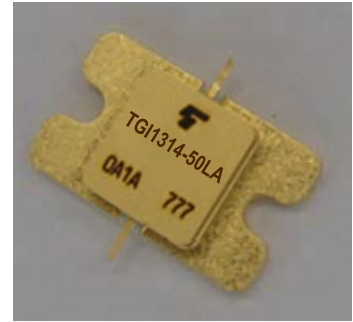
·HIGH GAIN

GL= 8.0dB at 13.75GHz to 14.5GHz

·LOW INTERMODULATION DISTORTION

IM3(Min.)= -25dBc at Pout= 40.0dBm (Single Carrier Level)

·HERMETICALLY SEALED PACKAGE



RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power	Pout	VDS= 24V IDSset= 2.0A f = 13.75 to 14.5GHz @Pin= 42dBm	dBm	46.0	47.0	—
Drain Current	IDS1		A	—	5.0	6.0
Power Added Efficiency	PAE		%	—	29	—
Linear Gain	GL	@Pin= 20dBm	dB	7.0	8.0	—
Gain Flatness	ΔG		dB	—	—	±0.8
3rd Order Intermodulation Distortion	IM3	Two-tone Test Po= 40.0dBm (Single Carrier Level) Δf= 5MHz (IM3) Δf= 150MHz (IM3-2)	dBc	-25	-27	—
	IM3-2		dBc	-25	-27	—
Drain Current	IDS2		A	—	3.5	4.5
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin – Pout) X Rth(c-c)	°C	—	130	160

Recommended Gate Resistance(Rg): 13.3 Ω

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

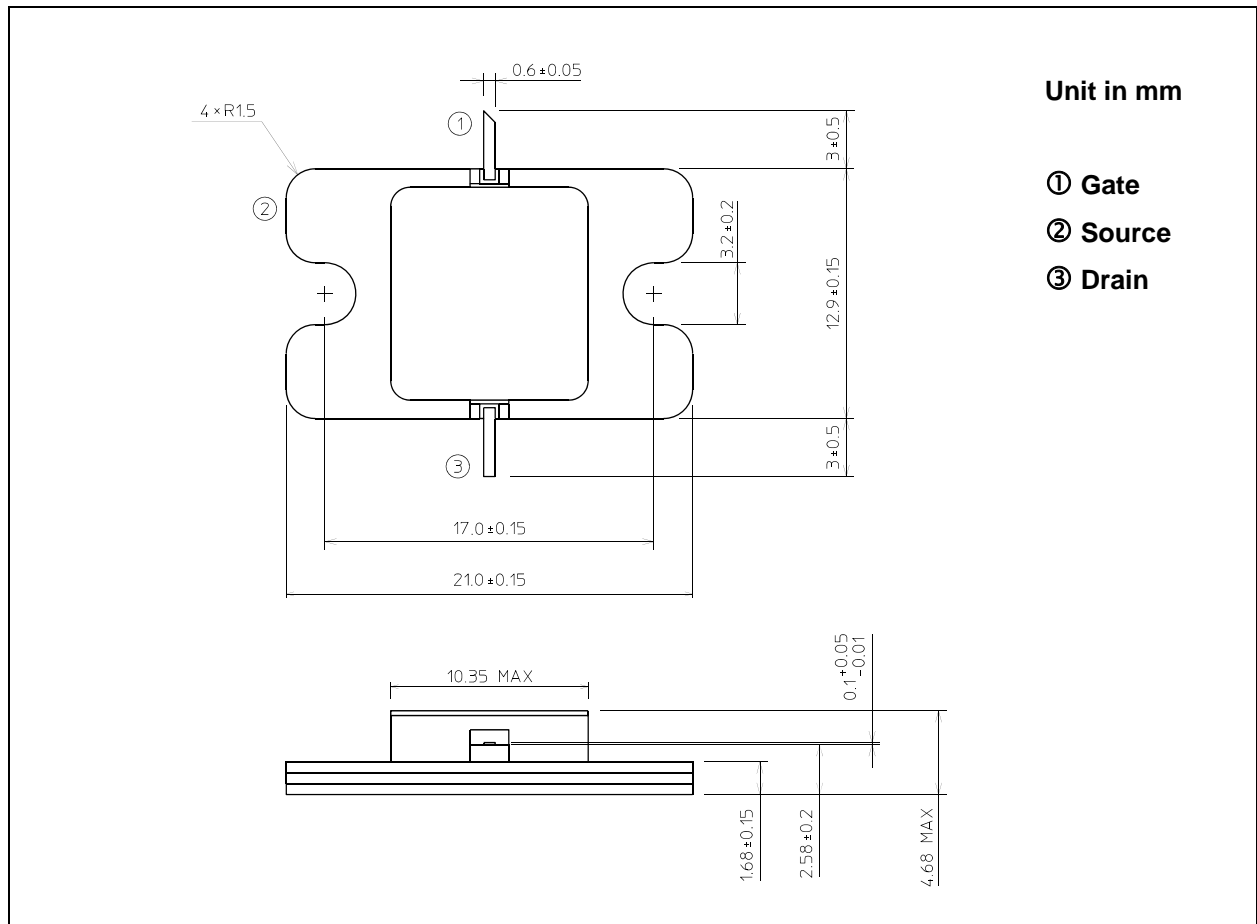
CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 5V IDS= 5.0A	S	—	4.5	—
Pinch-off Voltage	VGSoff	VDS= 5V IDS= 23mA	V	-1.0	-4.0	-6.0
Saturated Drain Current	IDSS	VDS= 5V VGS= 0V	A	—	18	—
Gate-Source Breakdown Voltage	VGSO	IGS= -10mA	V	-10	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	1.4	1.6

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ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	50
Gate-Source Voltage	VGS	V	-10
Drain Current	IDS	A	15.0
Total Power Dissipation (Tc= 25°C)	PT	W	140
Channel Temperature	Tch	°C	250
Storage Temperature	Tstg	°C	-65 to +175

PACKAGE OUTLINE (7-AA07A)

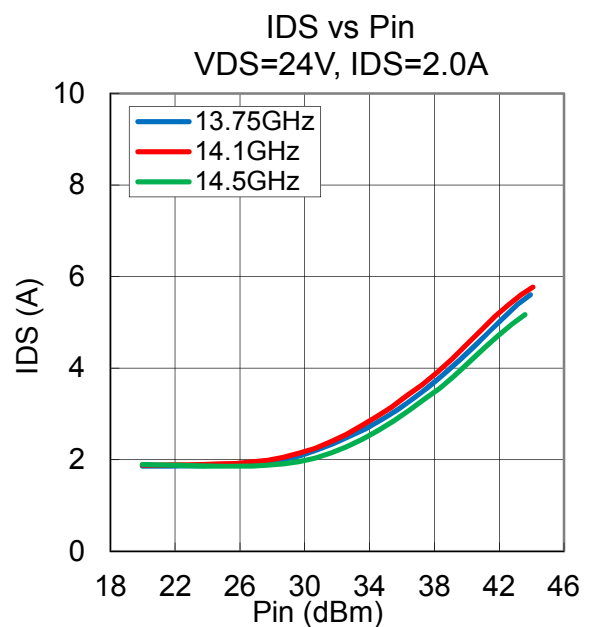
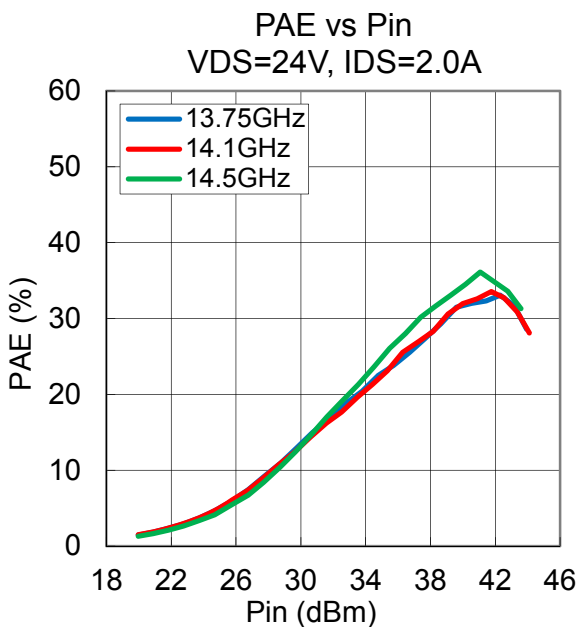
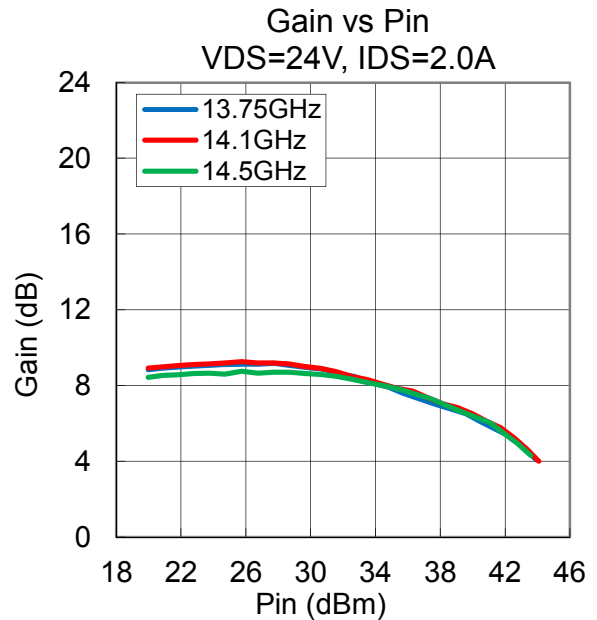
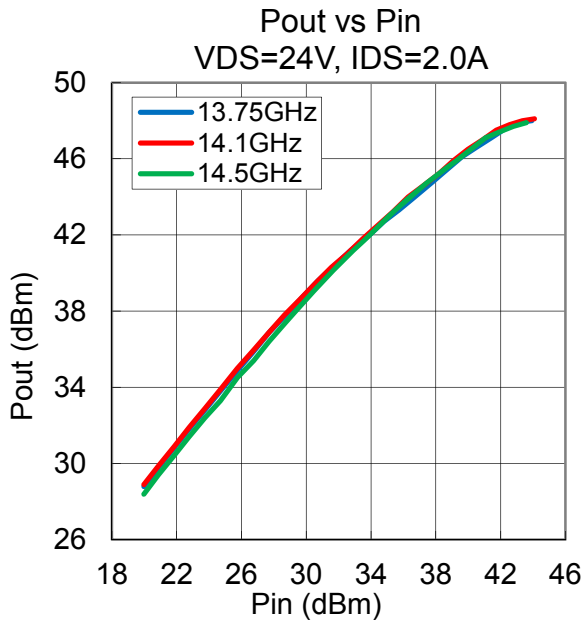


HANDLING PRECAUTIONS FOR PACKAGE MODEL

Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C or 3 seconds at 350°C.

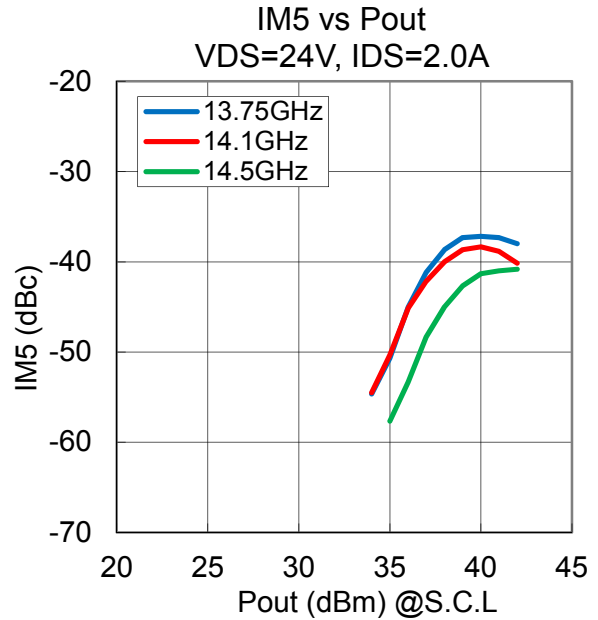
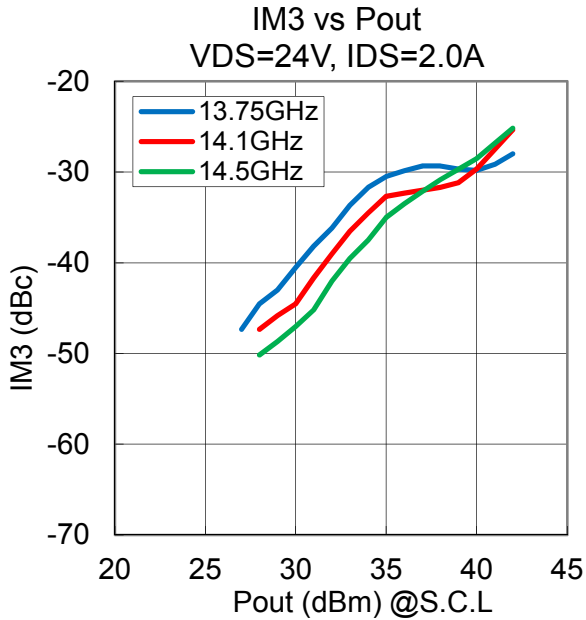
• Pout , Gain , PAE , IDS vs. Pin

VDS= 24 V, IDSset= 2.0 A, f= 13.75, 14.1, 14.5 GHz, Ta= +25 °C



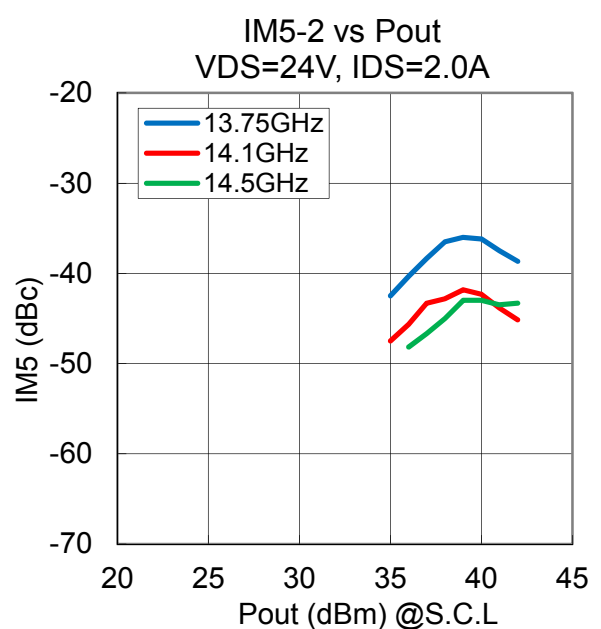
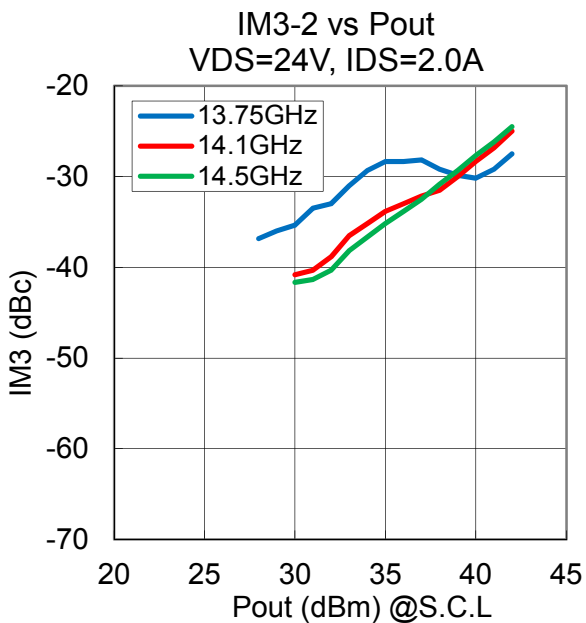
•IM3, IM5 vs. Pout

VDS= 24 V, IDSset= 2.0 A, f= 13.75, 14.1, 14.5 GHz, Δf= 5 MHz , Ta= +25 °C



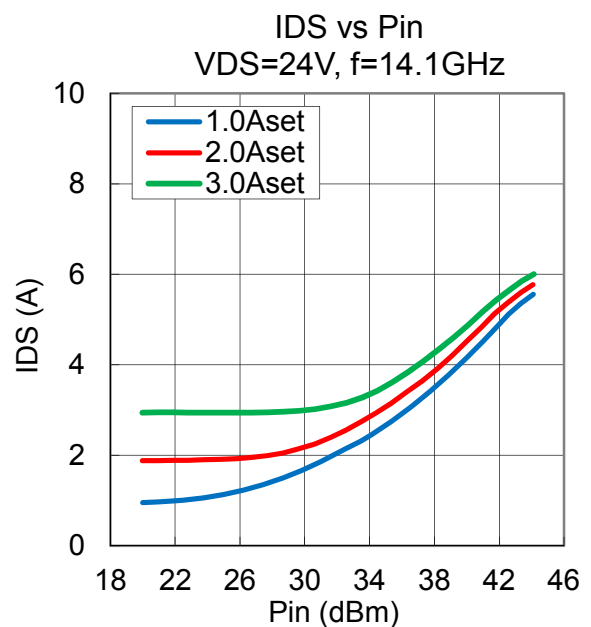
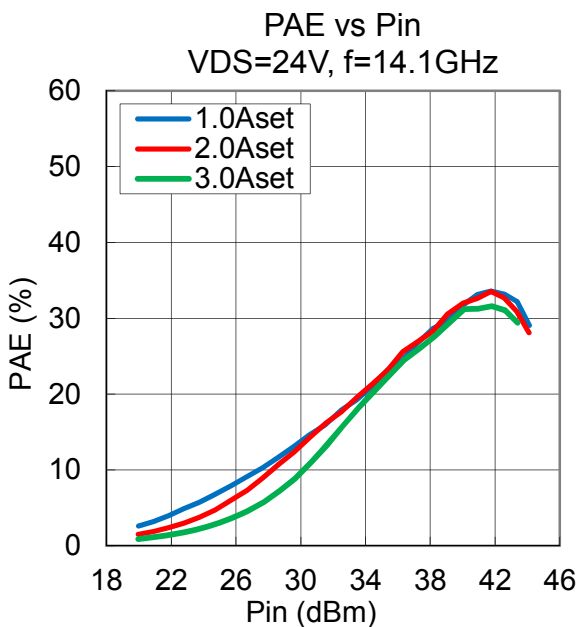
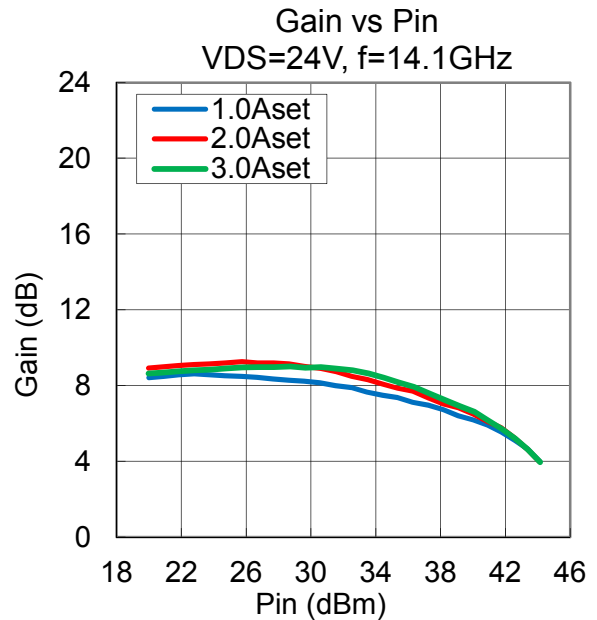
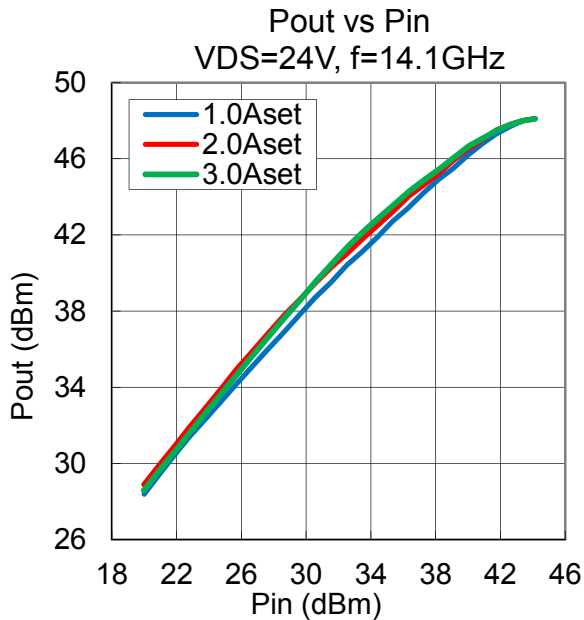
•IM3-2, IM5-2 vs. Pout

VDS= 24 V, IDSset= 2.0 A, f= 13.75, 14.1, 14.5 GHz, Δf= 150 MHz , Ta= +25 °C



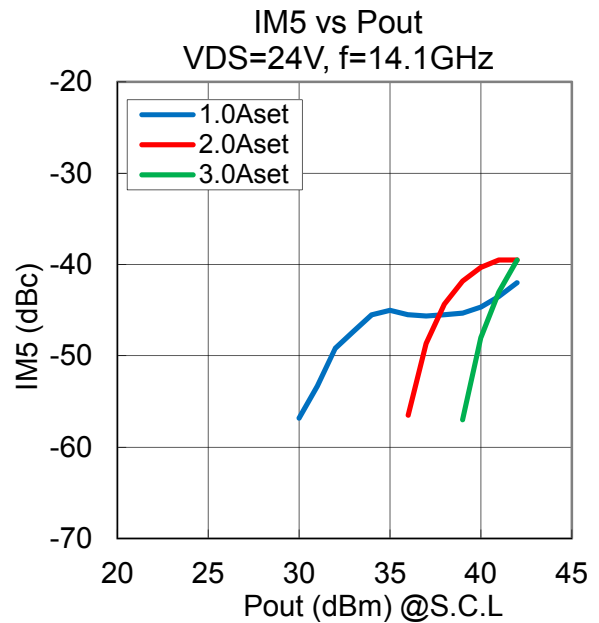
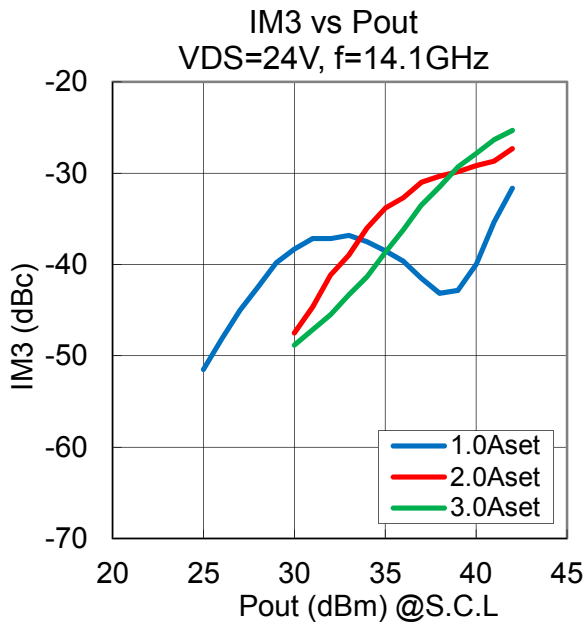
• Pout , Gain , PAE , IDS vs. Pin vs. IDSset

VDS= 24 V, IDSset= 1.0, 2.0, 3.0 A, f= 14.1 GHz, Ta= +25 °C



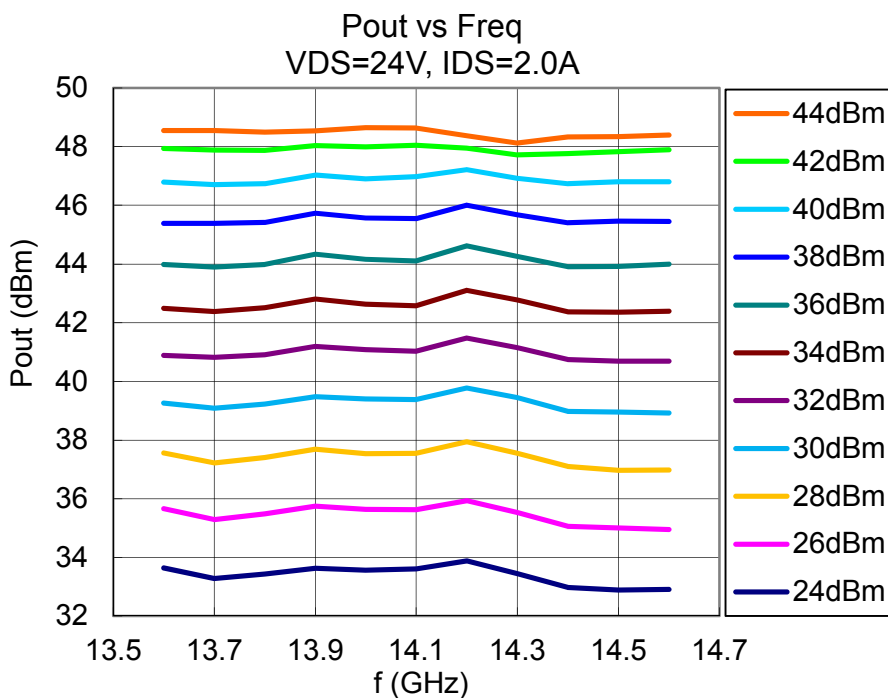
•IM3, IM5 vs. Pout vs. IDSset

VDS= 24 V, IDSset= 1.0, 2.0, 3.0 A, f= 14.1 GHz, Δf= 5 MHz, Ta= +25 °C



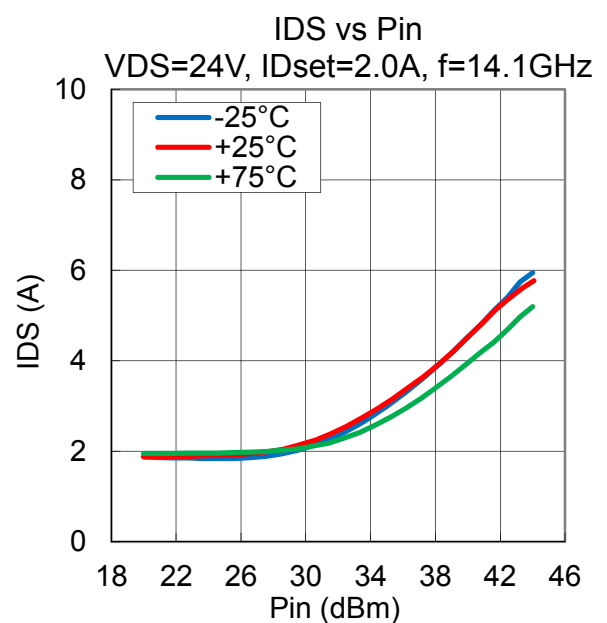
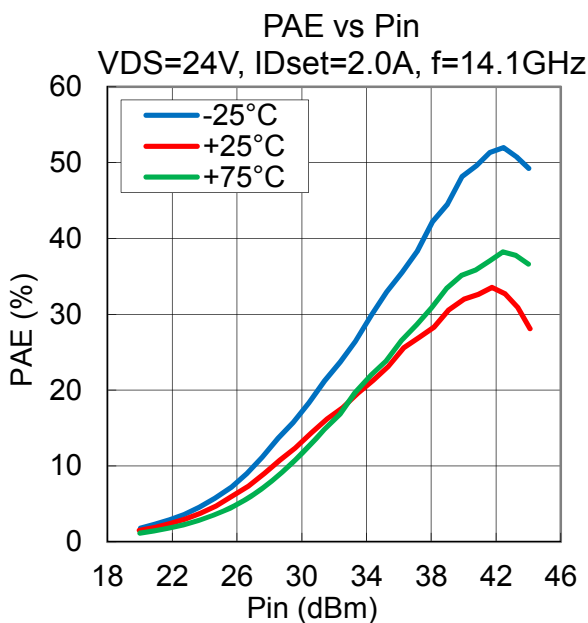
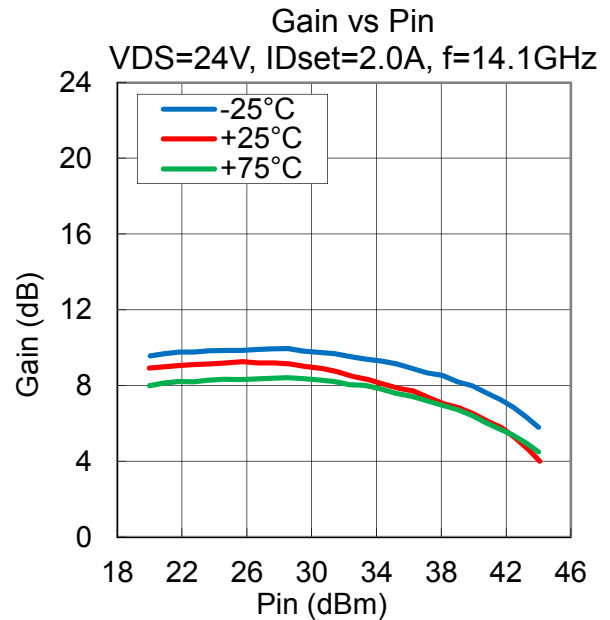
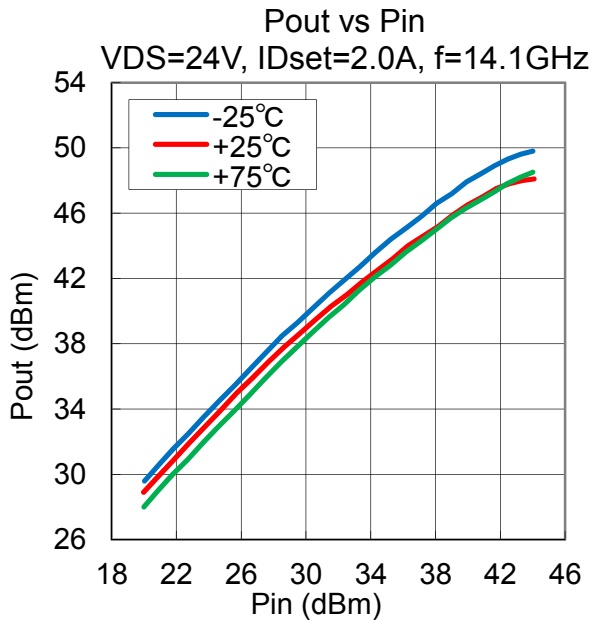
•Pout vs. Frequency

VDS= 24 V, IDSset= 2.0 A, Ta= +25 °C



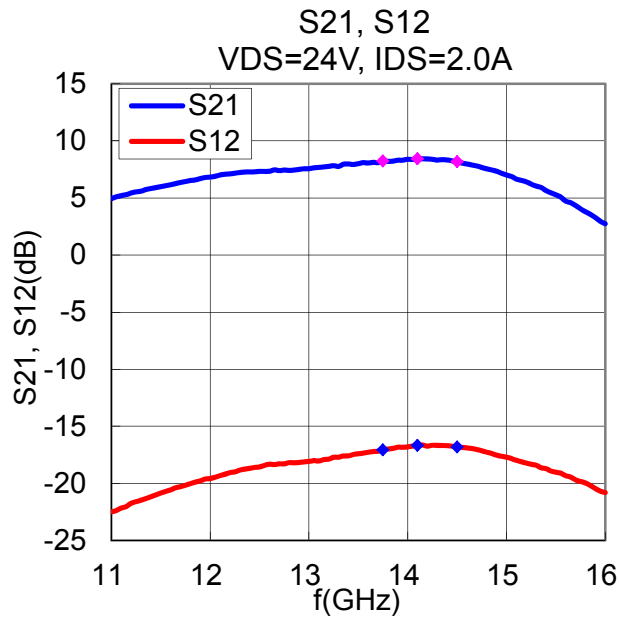
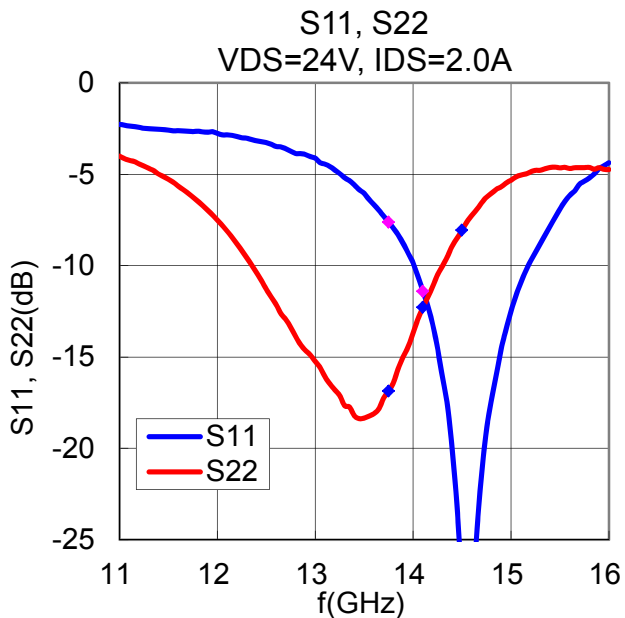
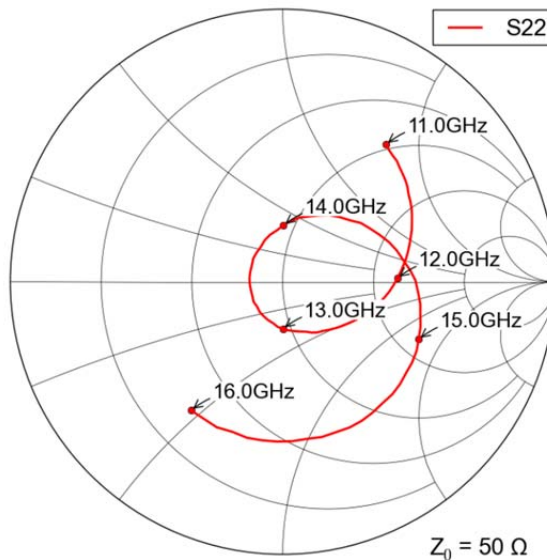
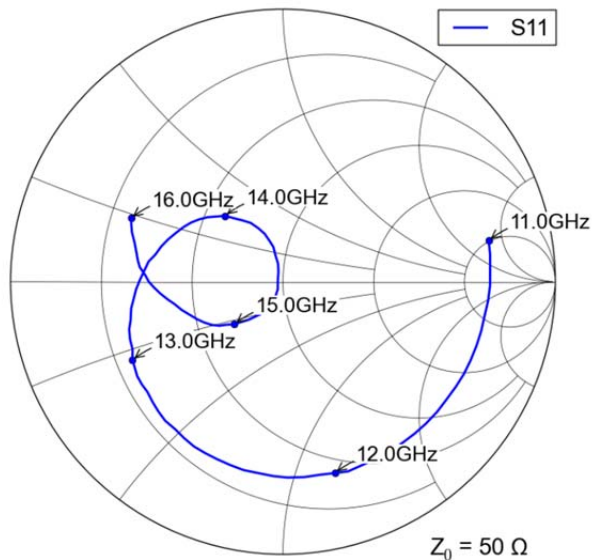
• Pout , Gain , PAE , IDS vs. Pin vs. Temperature

VDS= 24 V, IDSset= 2.0 A, f= 14.1 GHz, Ta= -25, +25, +75 °C



•S-Parameters

VDS= 24 V, IDSset= 2.0 A, f= 11.0 to 16.0 GHz, Ta= +25 °C



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