

FEATURES

- BROAD BAND INTERNALLY MATCHED HEMT
- HIGH POWER
 $P_{out} = 44.5\text{dBm}$ at $P_{in} = 35.0\text{dBm}$
- HIGH GAIN
 $GL = 12.0\text{dB}$ at 7.7GHz to 8.5GHz
- LOW INTERMODULATION DISTORTION
 $IM3(\text{Min.}) = -40\text{dBc}$ at $P_o = 29.0\text{dBm}$
 Single Carrier Level
- HERMETICALLY SEALED PACKAGE



RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power	P_{out}	VDS= 24V IDSset= 1.75A f= 7.7 to 8.5 GHz @Pin= 35dBm	dBm	44.0	44.5	—
Drain Current	IDS1		A	—	2.7	3.2
Power Added Efficiency	η_{add}		%	—	39	—
Linear Gain	GL	@Pin= 20dBm	dB	11.0	12.0	—
Gain Flatness	ΔG		dB	—	—	± 0.8
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po= 29.0dBm, $\Delta f = 5\text{MHz}$ (Single Carrier Level)	dBc	-40	-42	—
Drain Current	IDS2		A	—	—	2.0
Channel Temperature Rise	ΔT_{ch}	$(VDS \times IDS + P_{in} - P_{out}) \times R_{th(c-c)}$	°C	—	130	150

Recommended Gate Resistance(Rg): 60 Ω

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

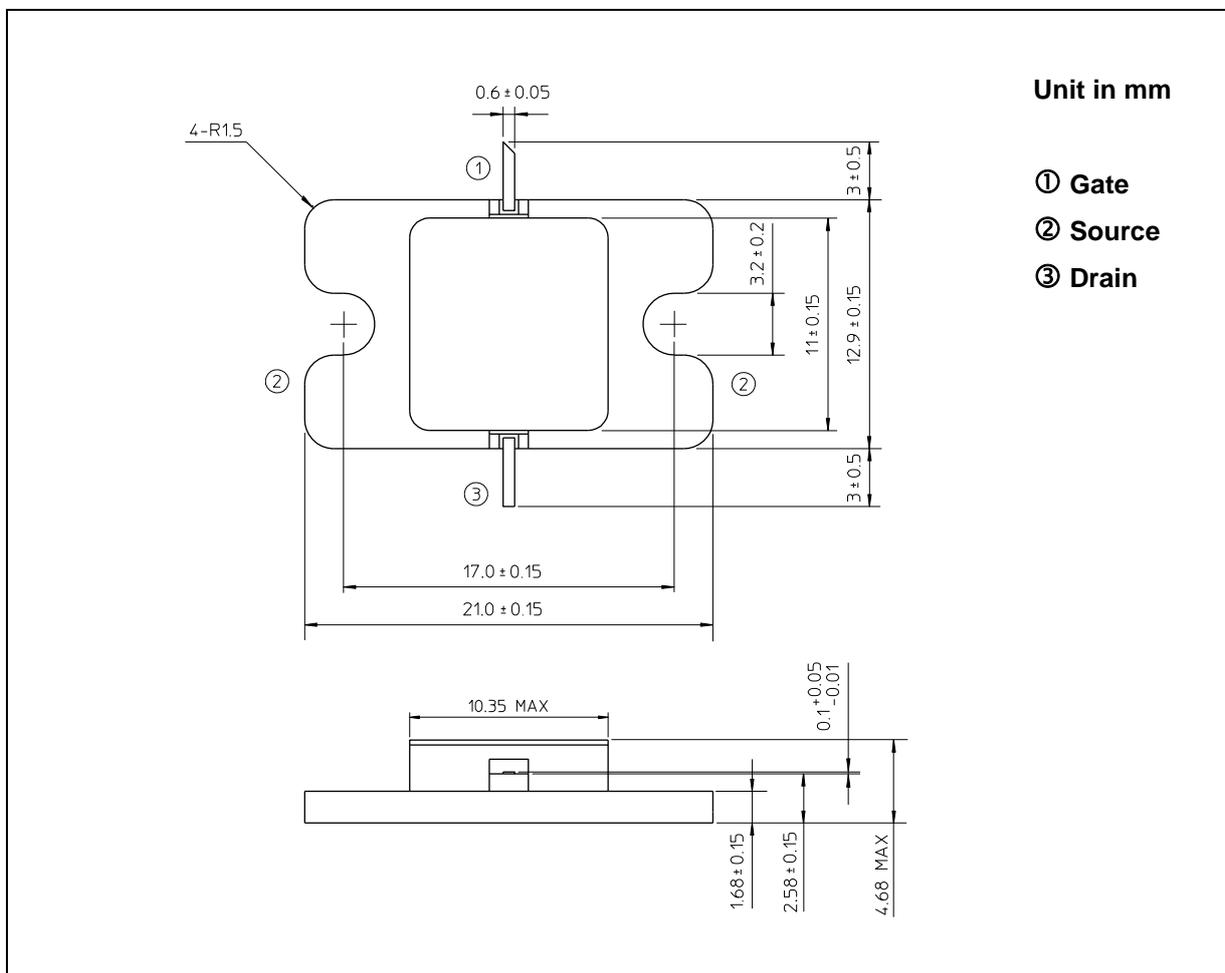
CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 5V IDS= 2.5A	S	—	1.2	—
Pinch-off Voltage	VGSoff	VDS= 5V IDS= 12mA	V	-2.6	-4.0	-6.0
Saturated Drain Current	IDSS	VDS= 5V VGS= 0V	A	—	7.5	—
Gate-Source Breakdown Voltage	VGSO	IGS= -5mA	V	-10	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	2.8	3.2

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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	7.5
Total Power Dissipation (Tc= 25°C)	PT	W	70
Channel Temperature	Tch	°C	250
Storage Temperature	Tstg	°C	-65 to +175

PACKAGE OUTLINE (7-AA04A)

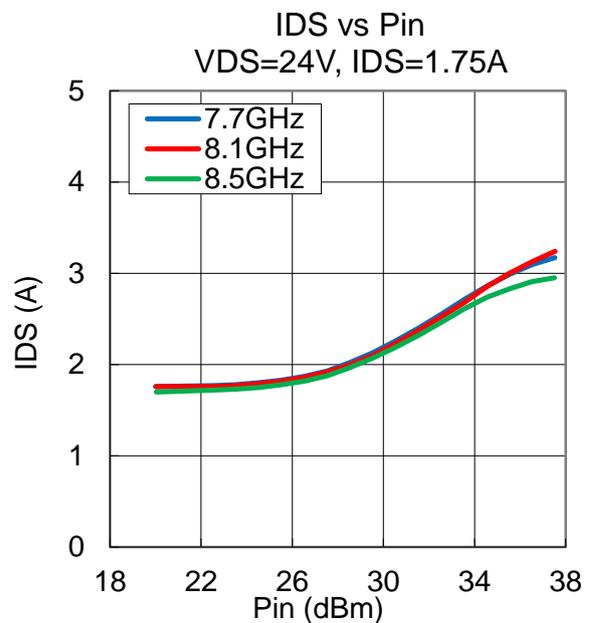
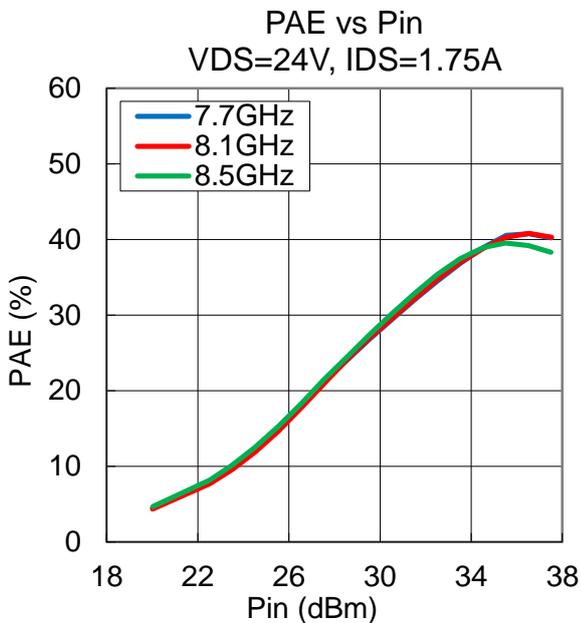
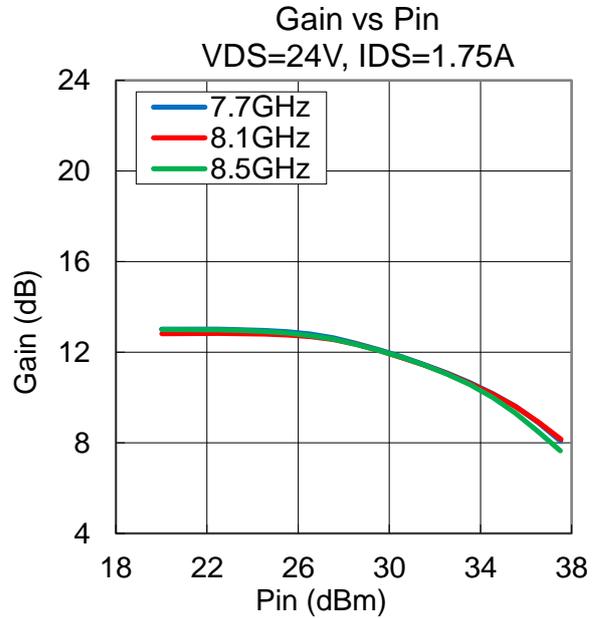
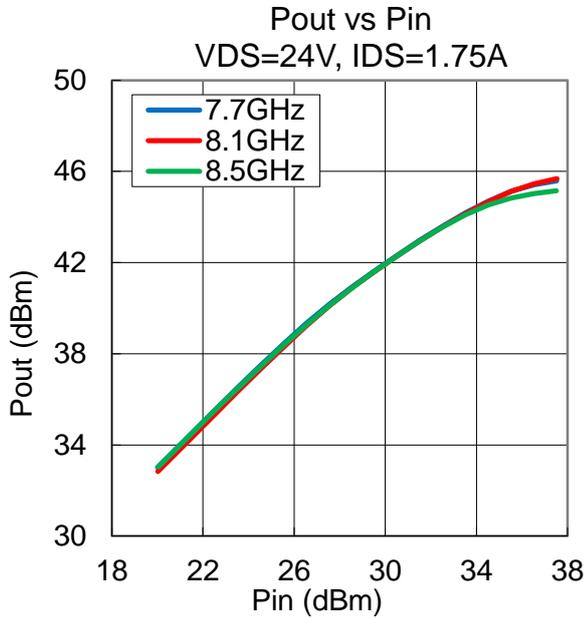


HANDLING PRECAUTIONS FOR PACKAGE MODEL

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

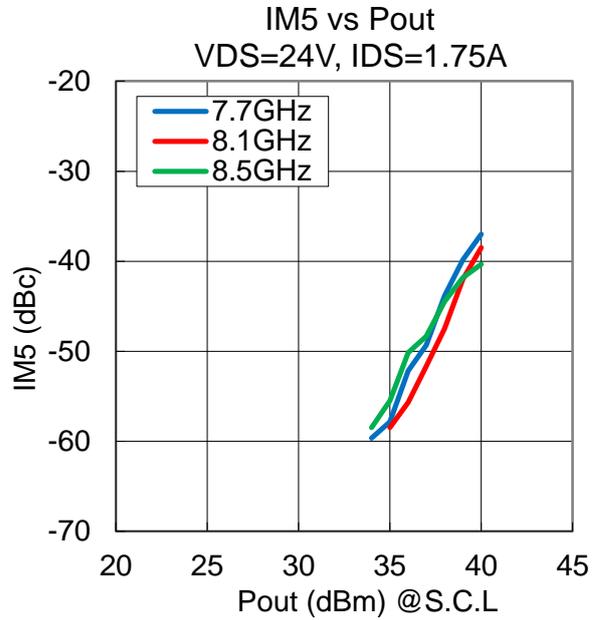
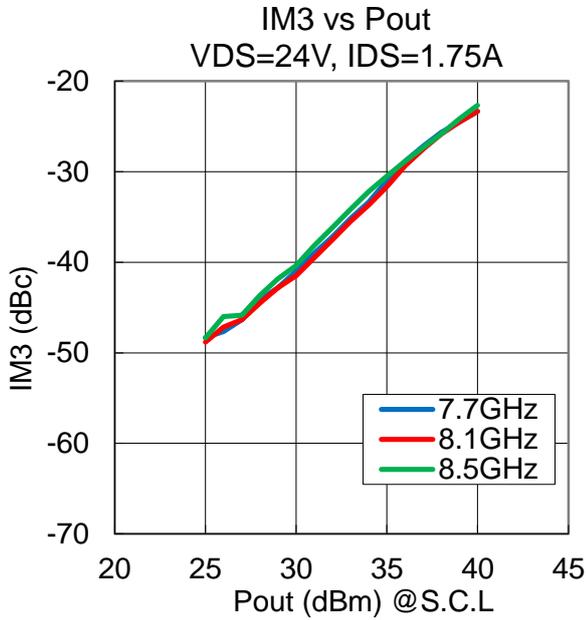
• Pout , Gain , PAE , IDS vs. Pin

VDS= 24 V, IDSset= 1.75 A, f= 7.7, 8.1, 8.5 GHz, Ta= +25 °C



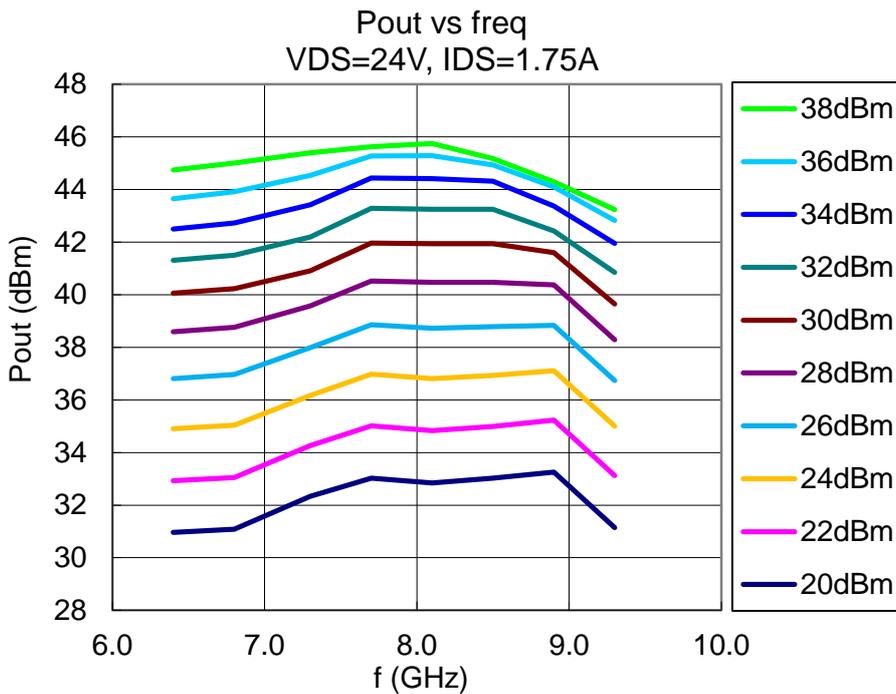
•IM3, IM5 vs. Pout

VDS= 24 V, IDSset= 1.75 A, f= 7.7, 8.1, 8.5 GHz, Δf= 5 MHz , Ta= +25 °C



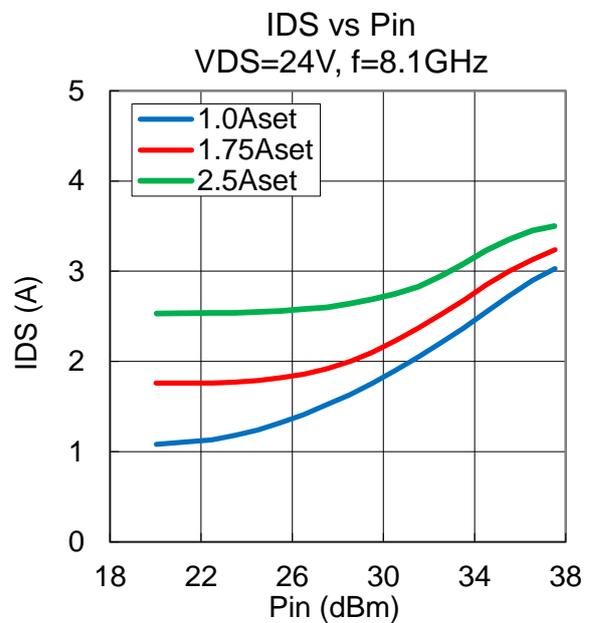
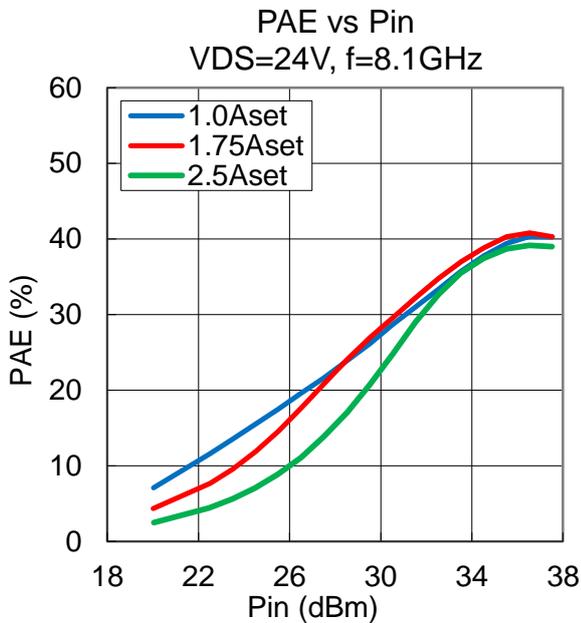
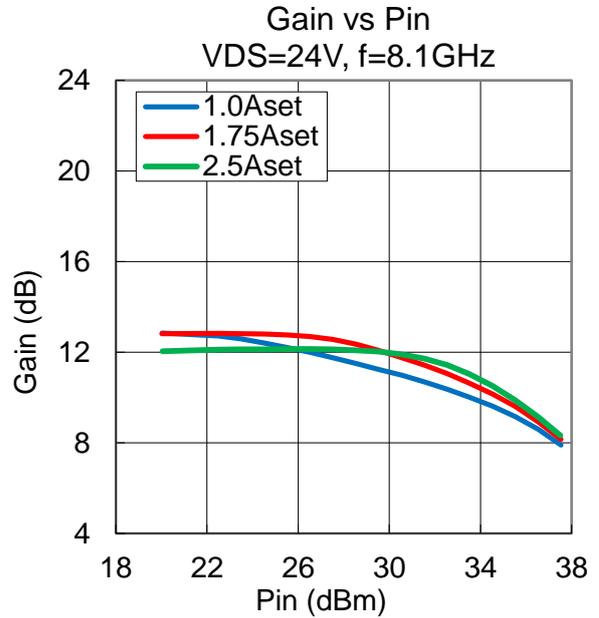
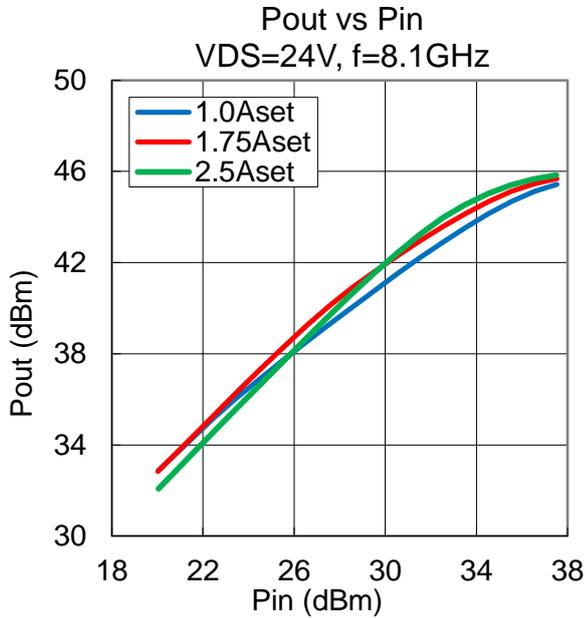
•Pout vs. Frequency

VDS= 24 V, IDSset= 1.75 A, Ta= +25 °C



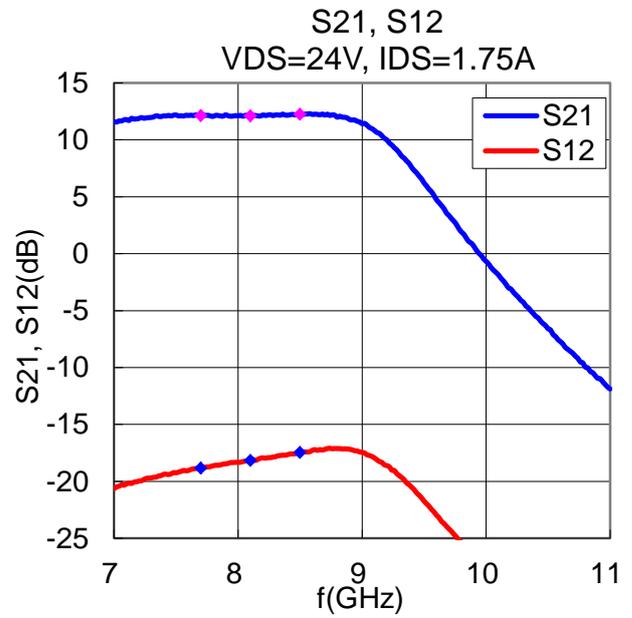
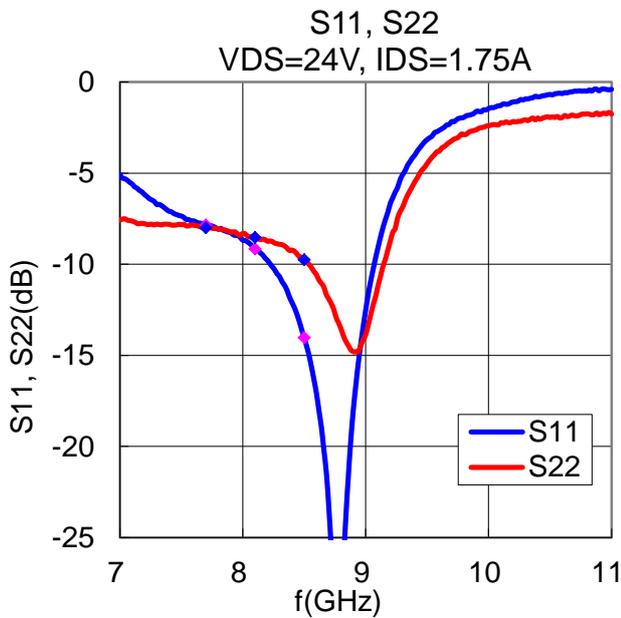
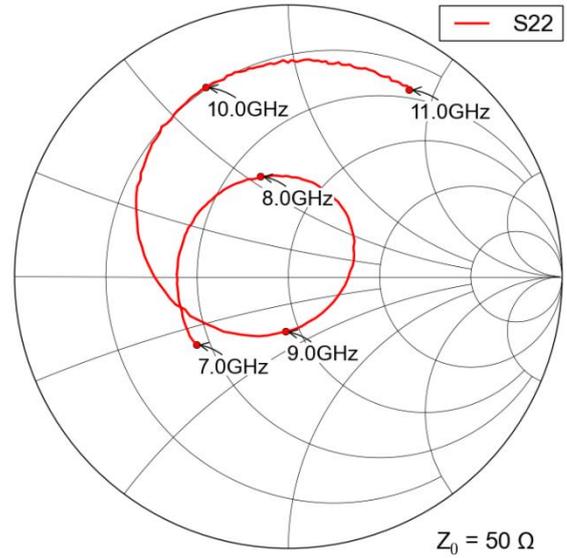
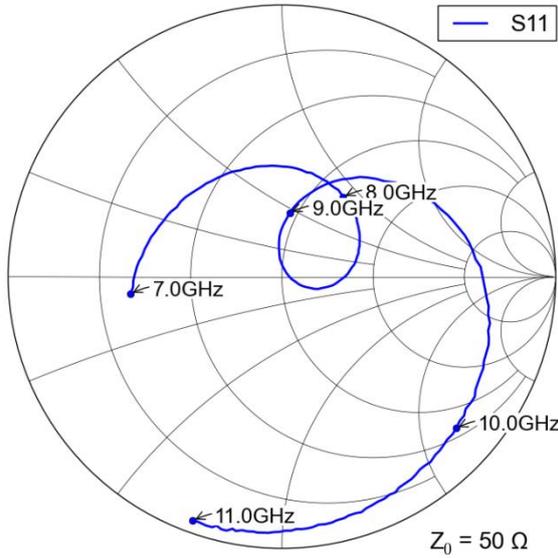
· Pout , Gain , PAE , IDS vs. Pin vs. IDSset

VDS= 24 V, IDSset= 1.0, 1.75, 2.5 A, f= 8.1 GHz, Ta= +25 °C



S-Parameters

VDS= 24 V, IDSset= 1.75 A, f= 7.0 to 11.0 GHz, Ta= +25 °C



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