

FEATURES

- BROAD BAND INTERNALLY MATCHED HEMT
- HIGH POWER
Pout= 48.0dBm at Pin= 41.0dBm
- HIGH GAIN
GL= 11.5dB at 7.7GHz to 8.5GHz
- LOW INTERMODULATION DISTORTION
IM3(Min.)= -25dBc at Po=41.0dBm
Single Carrier Level
- HERMETICALLY SEALED PACKAGE



RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power	Pout	VDS= 40V IDSset= 0.4A f= 7.7 to 8.5GHz @Pin= 41dBm	dBm	47.0	48.0	—
Drain Current	IDS1		A	—	4.0	4.5
Power Added Efficiency	η_{add}		%	—	32	—
Linear Gain	GL	@Pin= 20dBm	dB	10.5	11.5	—
Gain flatness	ΔG		dB	—	—	± 0.8
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po= 41.0dBm (Single Carrier Level) Δf = 5MHz (IM3) Δf = 150MHz (IM3-2)	dBc	-25	-30	—
	IM3-2		dBc	-25	-27	—
Drain Current	IDS2		A	—	2.0	2.5
Channel Temperature Rise ^{*1}	ΔT_{ch}	@Po=44dBm ^{*2}	°C	—	120	140

Recommended Gate Resistance(Rg): 10 Ω

*1: $\Delta T_{ch} = (VDS \times IDS + Pin(\text{two-tone}) - Po(\text{two-tone})) \times R_{th}(c-c)$, calculated using parameters of IM3 test

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

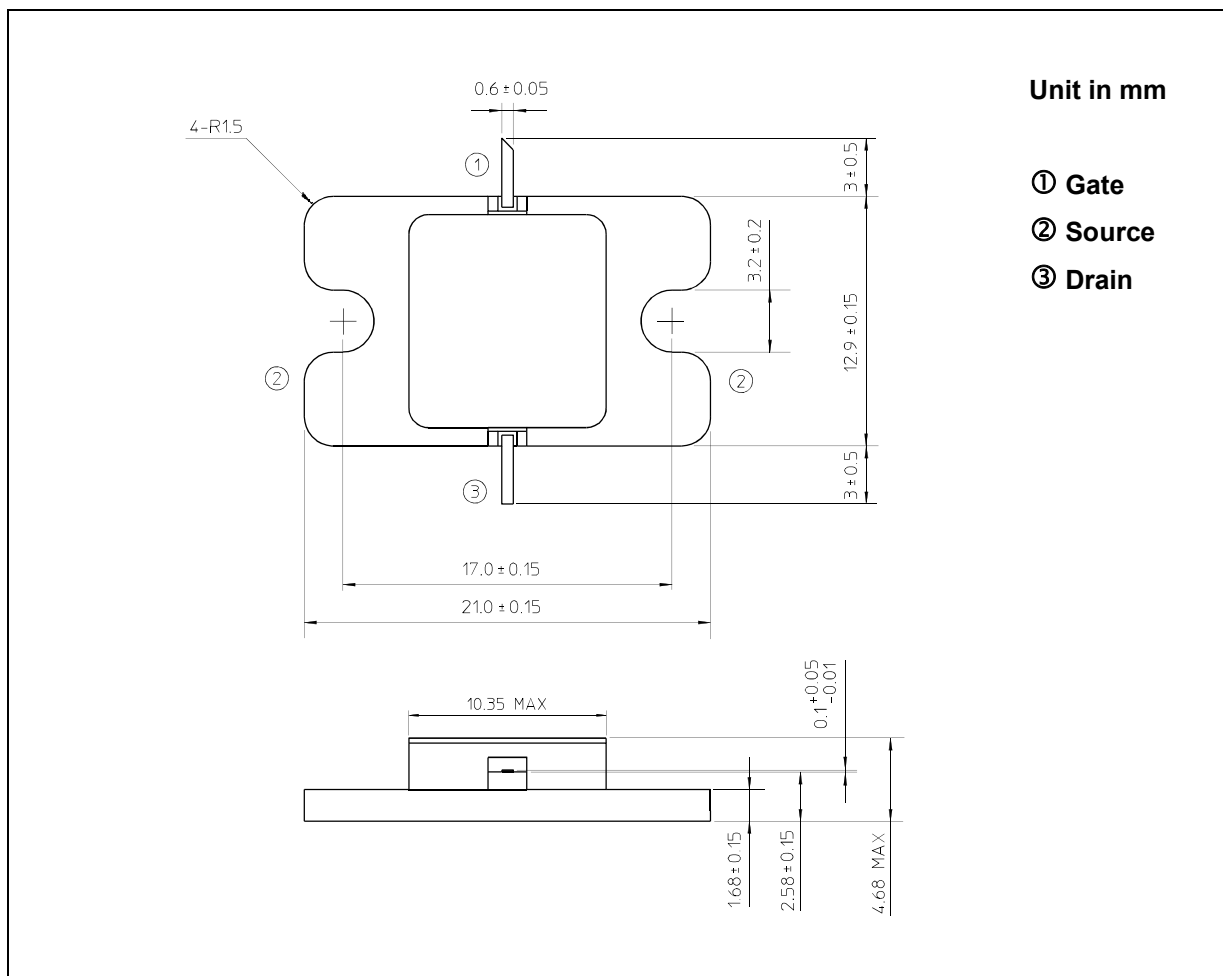
CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 5V IDS= 5.0A	S	—	4.0	—
Pinch-off Voltage	VGSoff	VDS= 5V IDS= 15mA	V	-2.0	-3.0	-5.0
Saturated Drain Current	IDSS	VDS= 5V VGS= 0V	A	—	10	—
Gate-Source Breakdown Voltage	VGSO	IGS= -12mA	V	-10	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	1.6	1.8

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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	6.0
Total Power Dissipation (Tc= 25 °C)	PT	W	111
Channel Temperature	Tch	°C	225
Storage Temperature	Tstg	°C	-65 to +175

PACKAGE OUTLINE (7-AA04A)

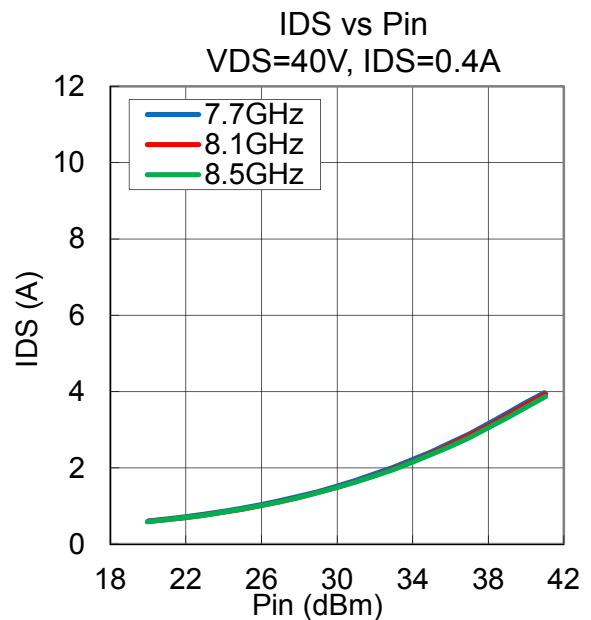
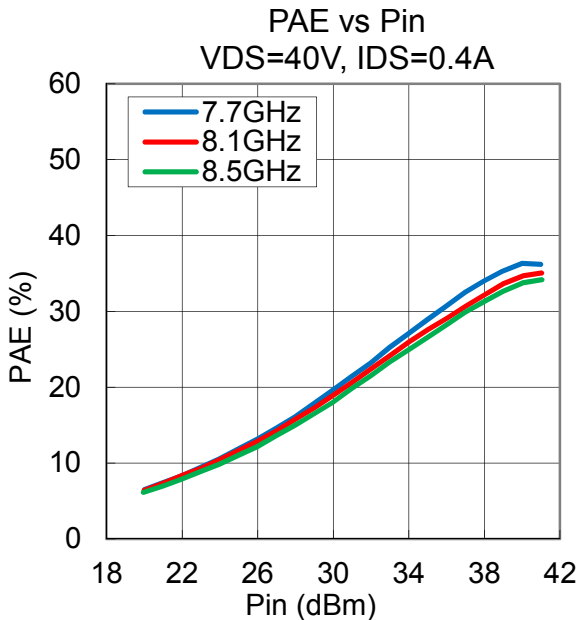
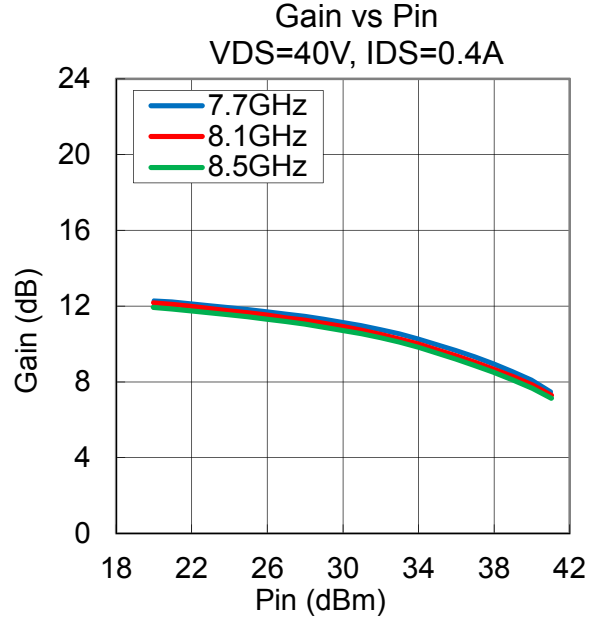
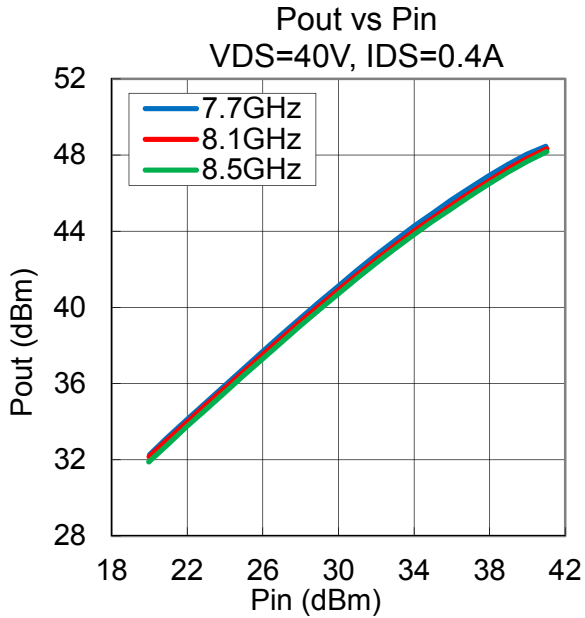


HANDLING PRECAUTIONS FOR PACKAGE MODEL

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

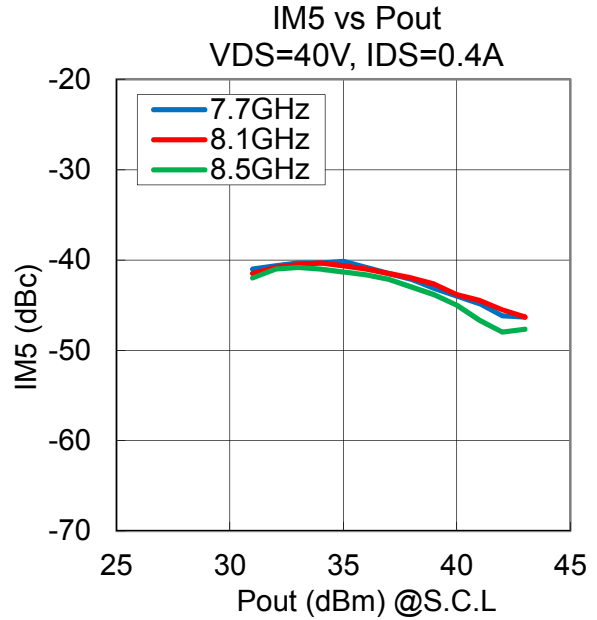
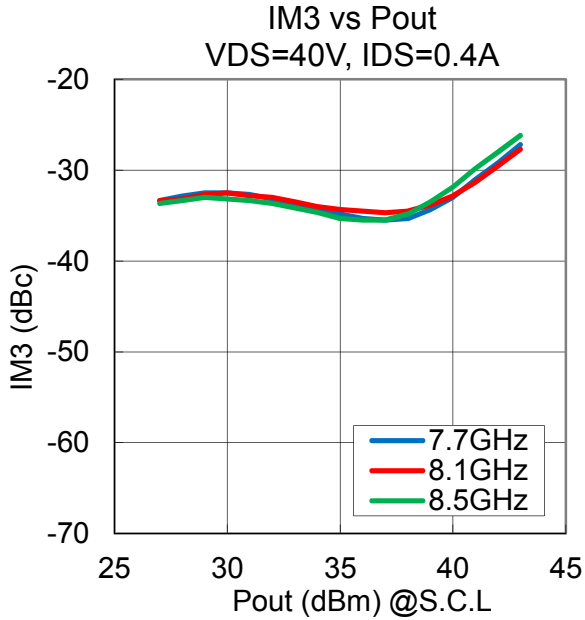
•Pout , Gain , PAE , IDS vs. Pin

VDS= 40 V, IDSset= 0.4 A, f= 7.7, 8.1, 8.5 GHz, Ta= +25 °C



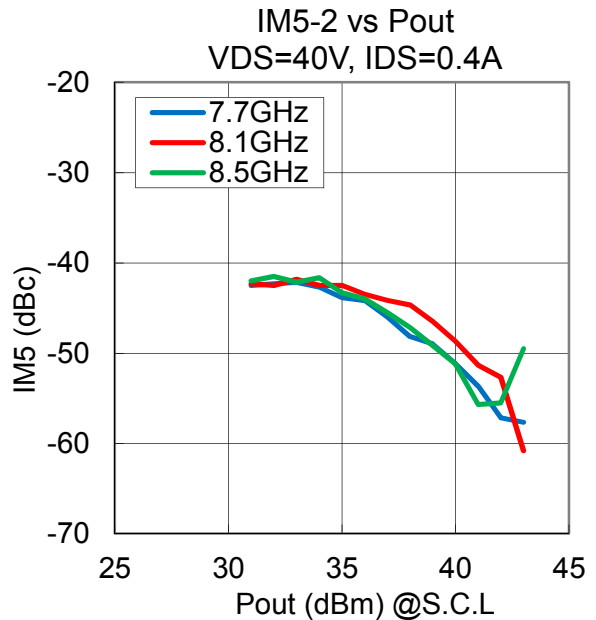
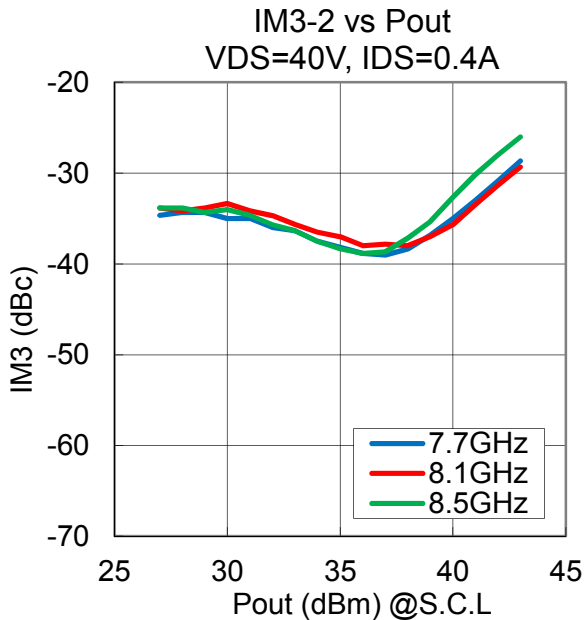
•IM3, IM5 vs. Pout

VDS= 40 V, IDSset= 0.4 A, f= 7.7, 8.1, 8.5 GHz, Δf= 5 MHz , Ta= +25 °C



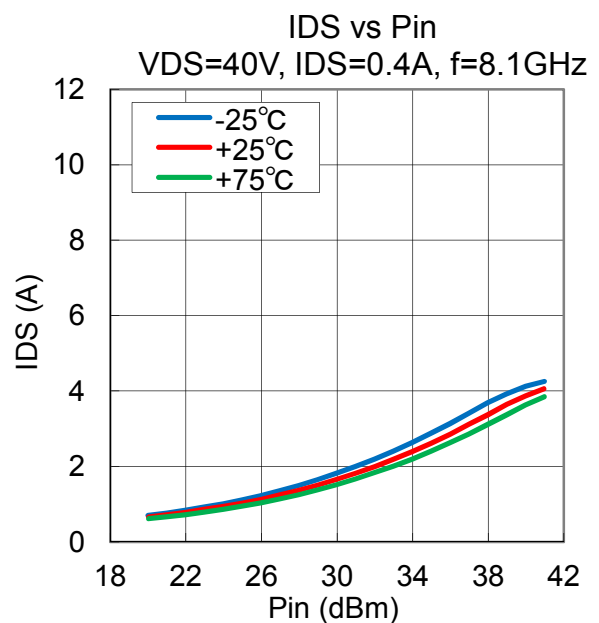
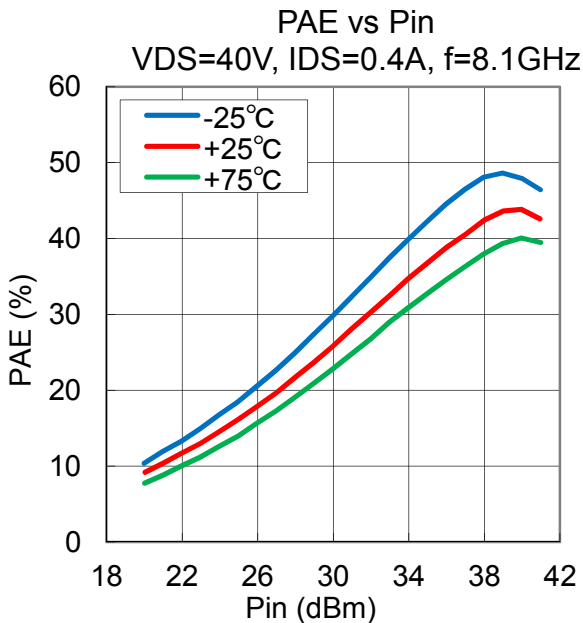
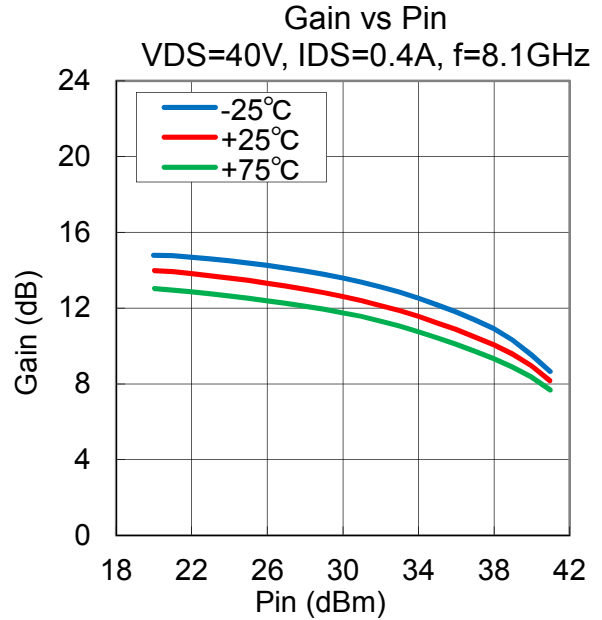
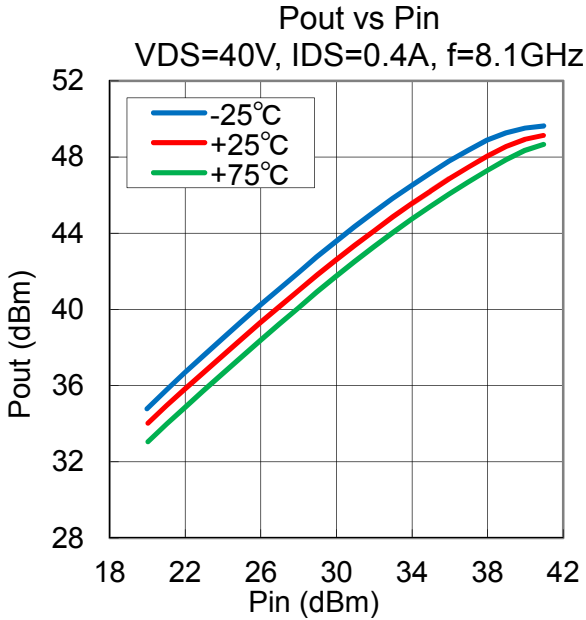
•IM3-2, IM5-2 vs. Pout

VDS= 40 V, IDSset= 0.4 A, f= 7.7, 8.1, 8.5 GHz, Δf= 150 MHz , Ta= +25 °C



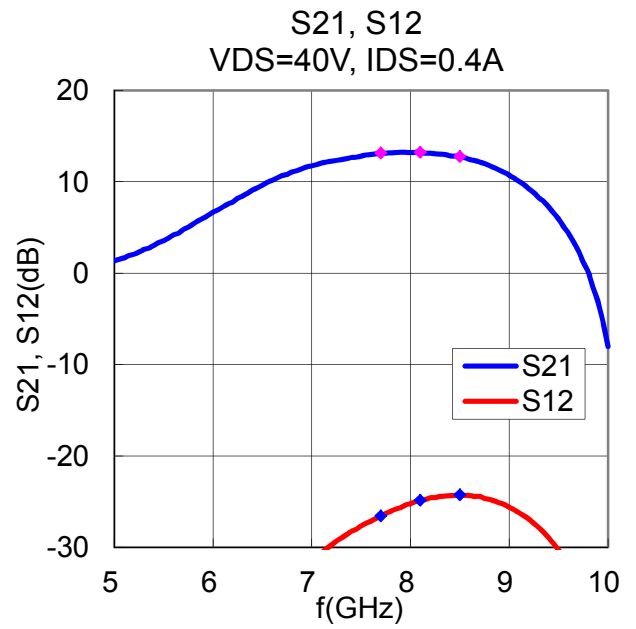
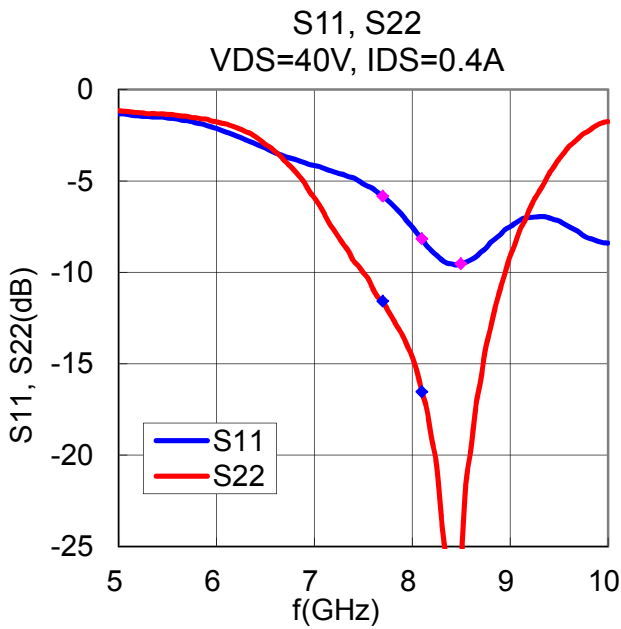
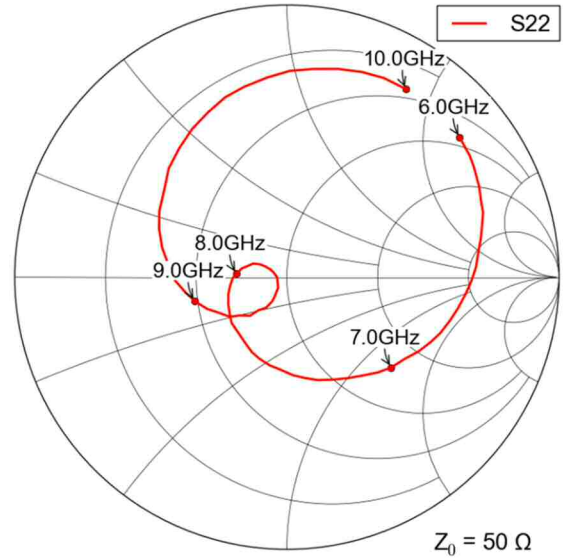
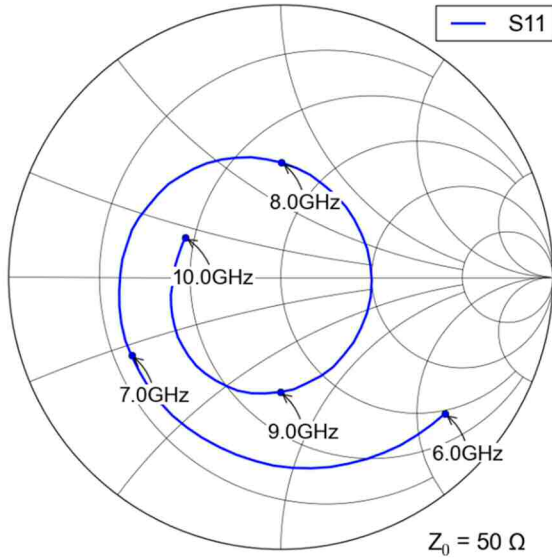
• Pout , Gain , PAE , IDS vs. Pin vs. Temperature

VDS= 40 V, IDSset= 0.4 A, f= 8.1 GHz, Ta= -25, +25, +75 °C



-S-Parameters

VDS= 40 V, IDSset= 0.4 A, f= 5.0 to 10.0 GHz, Ta= +25 °C



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