MICROWAVE POWER GaAs FET
TIM5964-25UL

FEATURES

·**BROAD BAND INTERNALLY MATCHED FET**

·**HIGH POWER**

P1dB= 44.5dBm at 5.9GHz to 6.4GHz

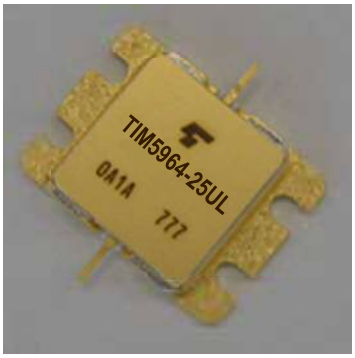
·**HIGH GAIN**

G1dB= 10.0dB at 5.9GHz to 6.4GHz

·**LOW INTERMODULATION DISTORTION**

IM3(MIN.) = -44dBc at Pout= 33.5dBm (Single Carrier Level)

·**HERMETICALLY SEALED PACKAGE**



RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Gain Compression Point	P1dB	VDS= 10V IDSset= 5.2A f= 5.9 to 6.4GHz	dBm	43.5	44.5	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	9.0	10.0	—
Drain Current	IDS1		A	—	6.8	7.6
Gain Flatness	ΔG		dB	—	—	±0.6
Power Added Efficiency	ηadd		%	—	37	—
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po= 33.5dBm, Δf= 5MHz (Single Carrier Level)	dBc	-44	-47	—
Drain Current	IDS2		A	—	5.2	6.0
Channel Temperature Rise	ΔTch	(VDS × IDS + Pin – P1dB) × Rth(c-c)	°C	—	—	80

Recommended Gate Resistance(Rg): 28 Ω

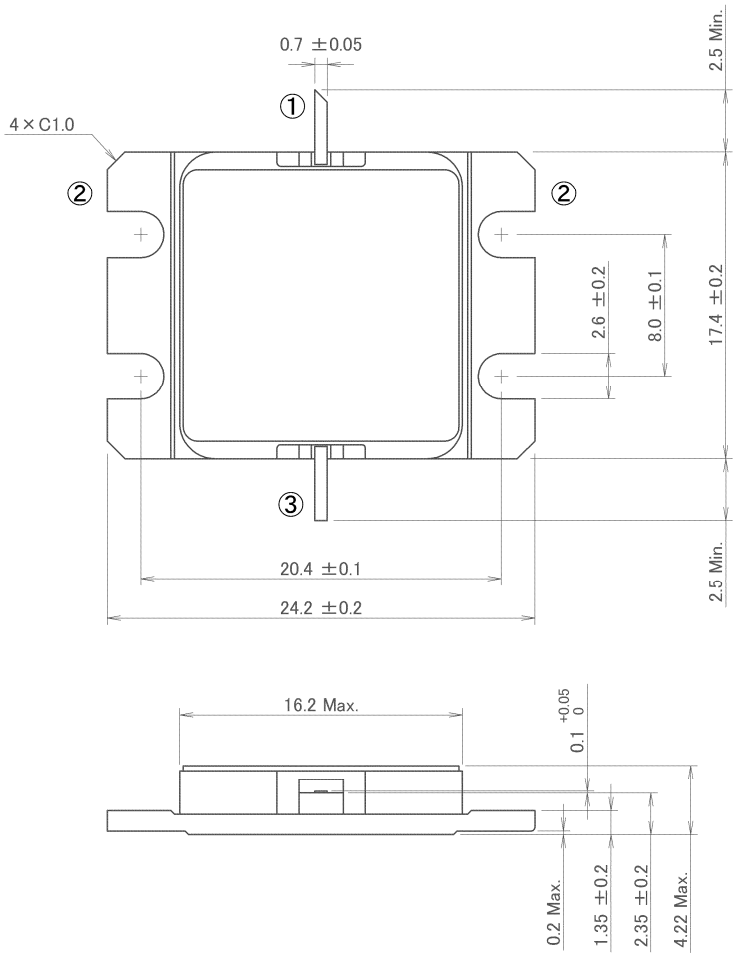
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 8.0A	S	—	5.0	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 80mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	14.4	—
Gate-Source Breakdown Voltage	VGSO	IGS= -280μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	1.2	1.5

ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	15
Gate-Source Voltage	VGS	V	-5
Drain Current	IDS	A	20.0
Total Power Dissipation (Tc= 25°C)	PT	W	100
Channel Temperature	Tch	°C	175
Storage Temperature	Tstg	°C	-65 to +175

PACKAGE OUTLINE (2-16G1B)



Unit in mm

① Gate
② Source
③ Drain

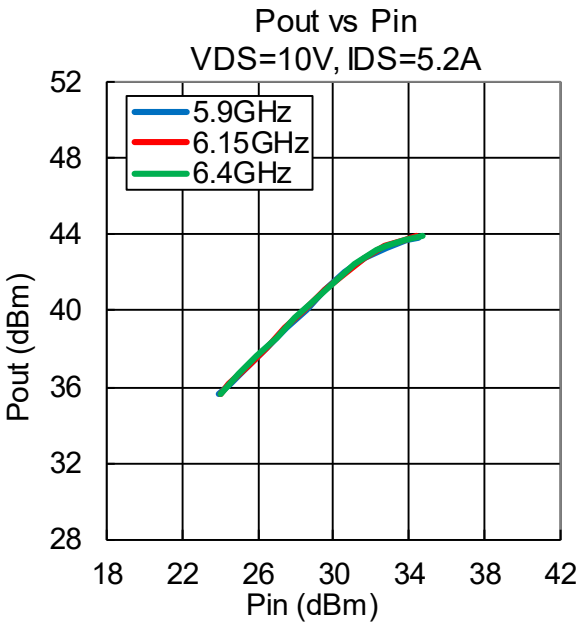
HANDLING PRECAUTIONS FOR PACKAGE MODEL

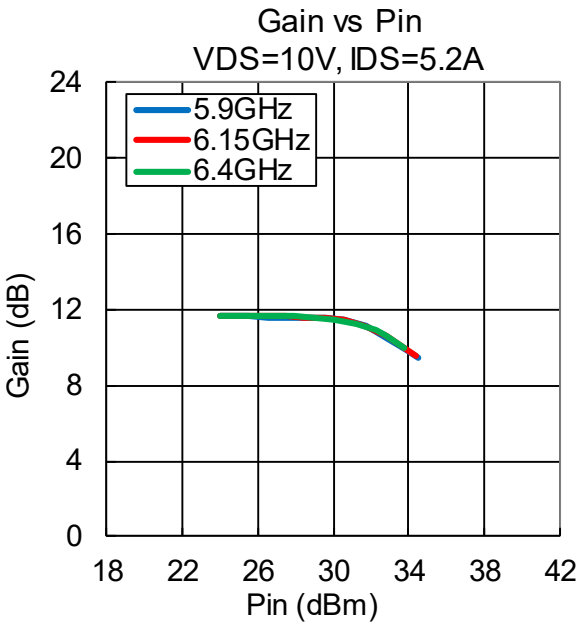
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C or 3 seconds at 350°C.

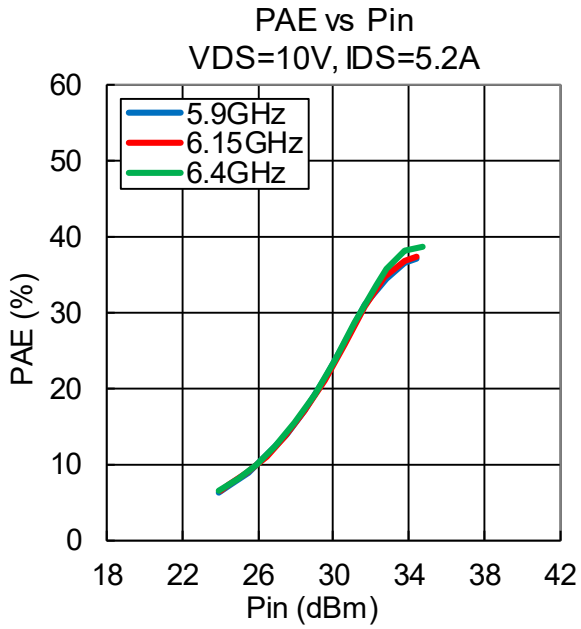
TYPICAL RF PERFORMANCE

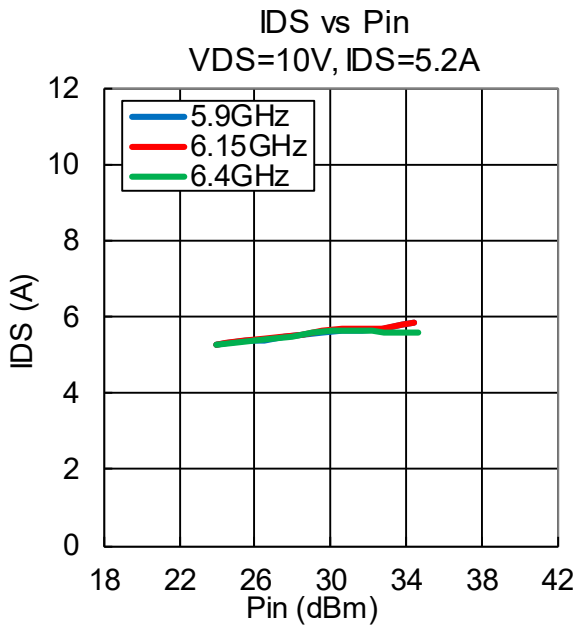
·Pout , Gain , PAE , IDS vs. Pin

VDS= 10 V, IDSset= 5.2 A, f= 5.9, 6.15, 6.4 GHz, Ta= +25 ℃



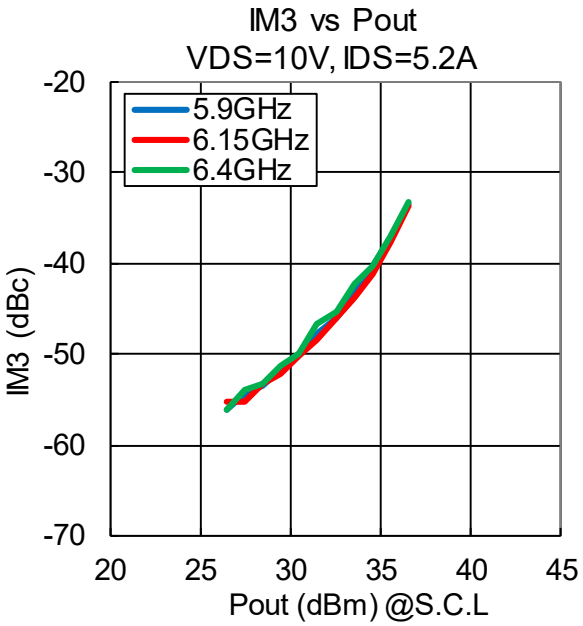


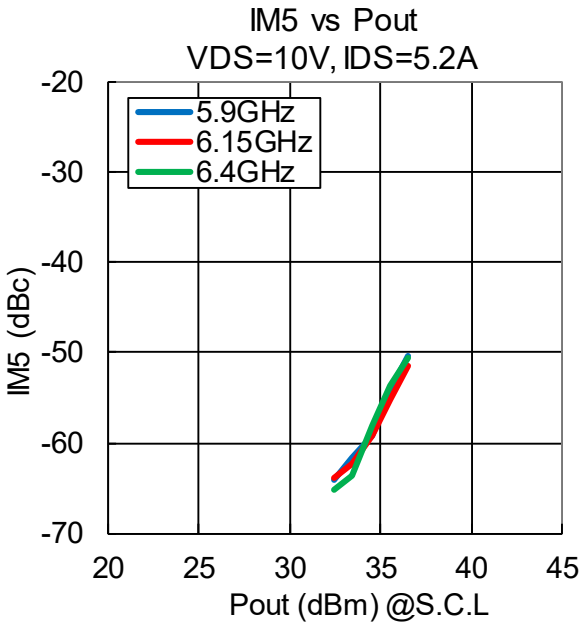




·IM3, IM5 vs. Pout

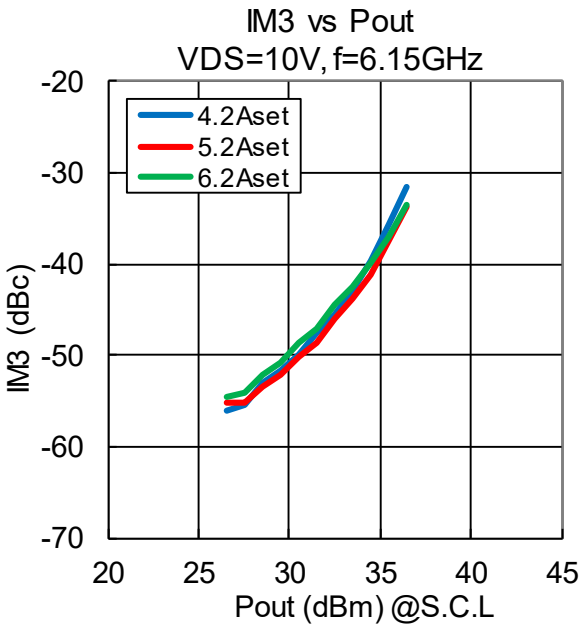
VDS= 10 V, IDSset= 5.2 A, f= 5.9, 6.15, 6.4 GHz, Δf= 5 MHz , Ta= +25 ℃

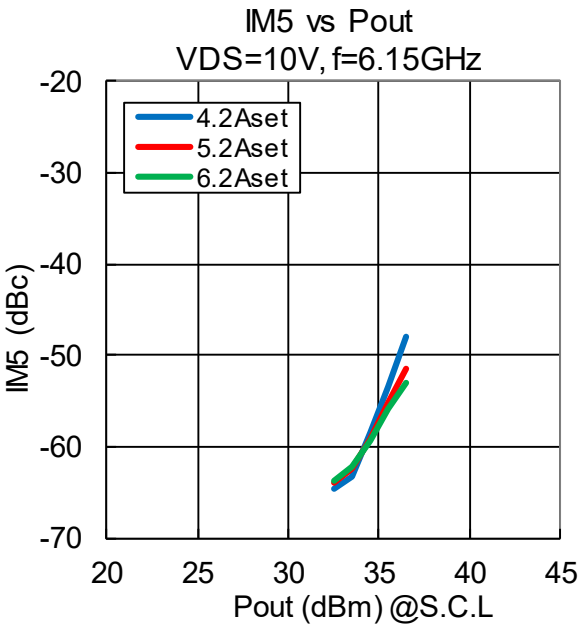




·IM3, IM5 vs. Pout vs. IDSset

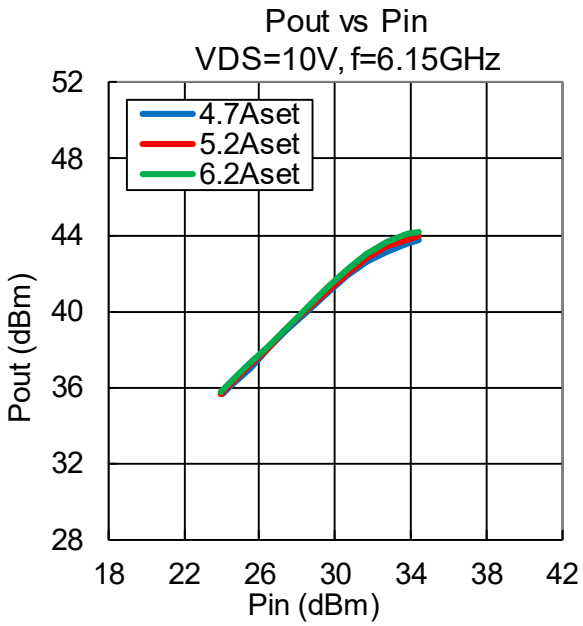
VDS= 10 V, f= 6.15 GHz, IDSset= 4.2A, 5.2 A, 6.2A, Δf= 5 MHz , Ta= +25 ℃

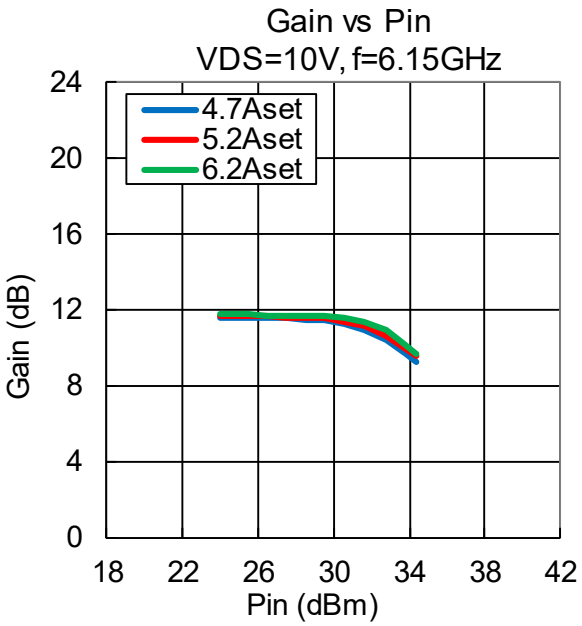


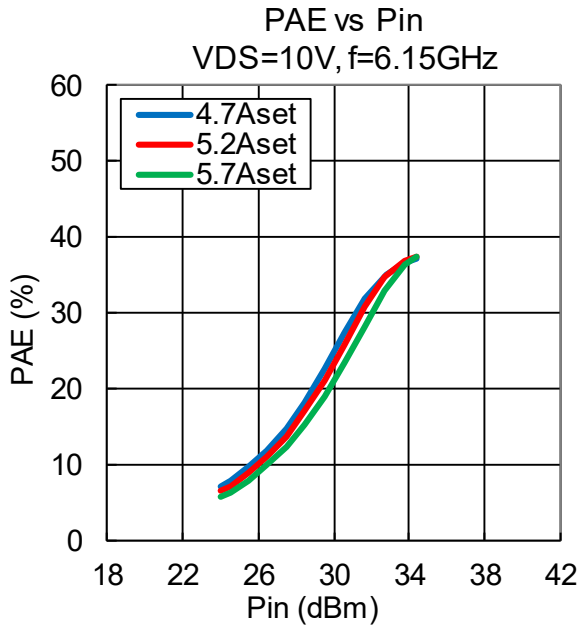


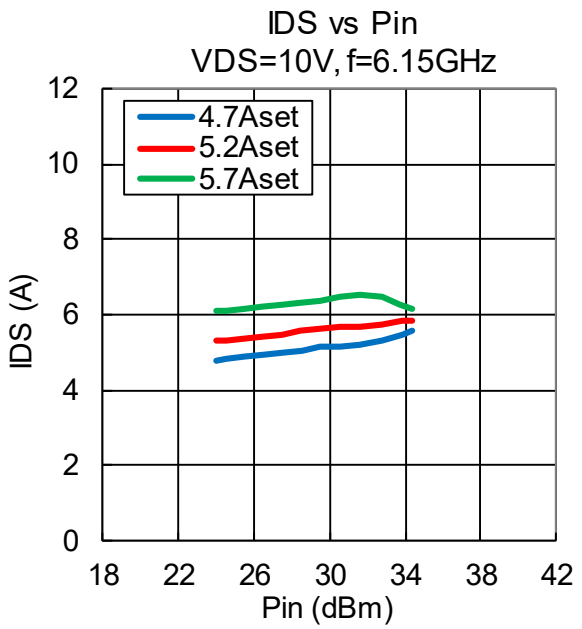
·Pout , Gain , PAE , IDS vs. Pin vs. IDSset

VDS= 10 V, IDSset= 4.7, 5.2, 6.2 A, f= 6.15 GHz, Ta= +25 ℃



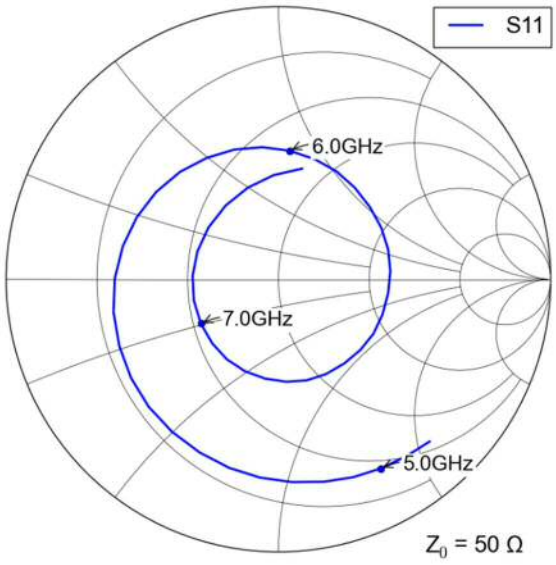


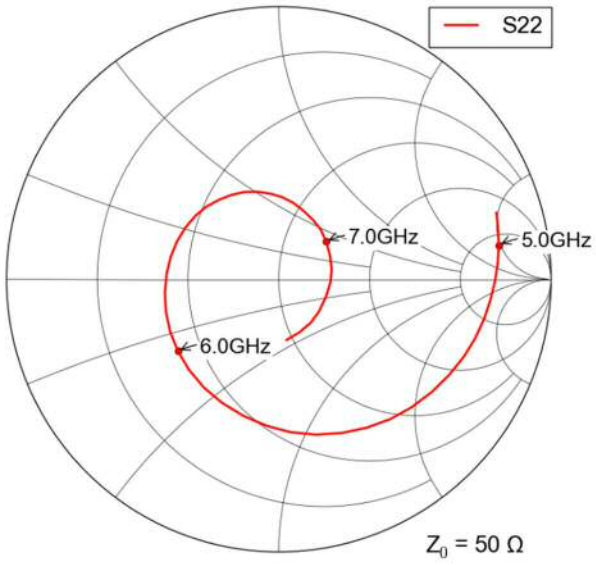


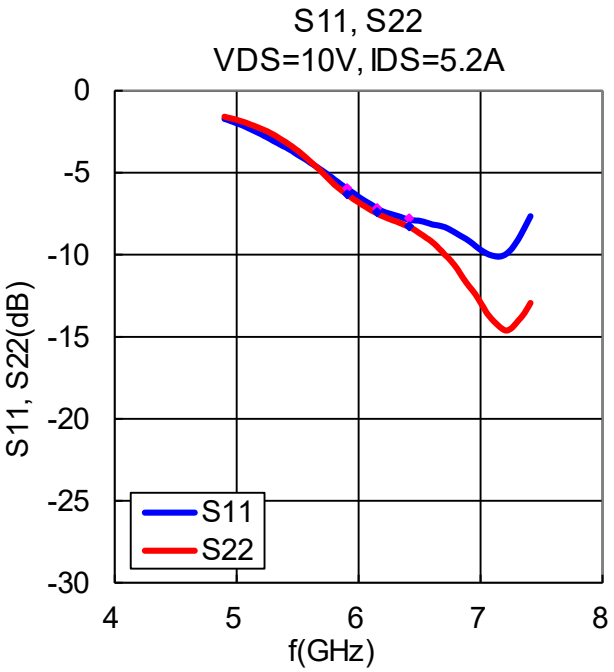


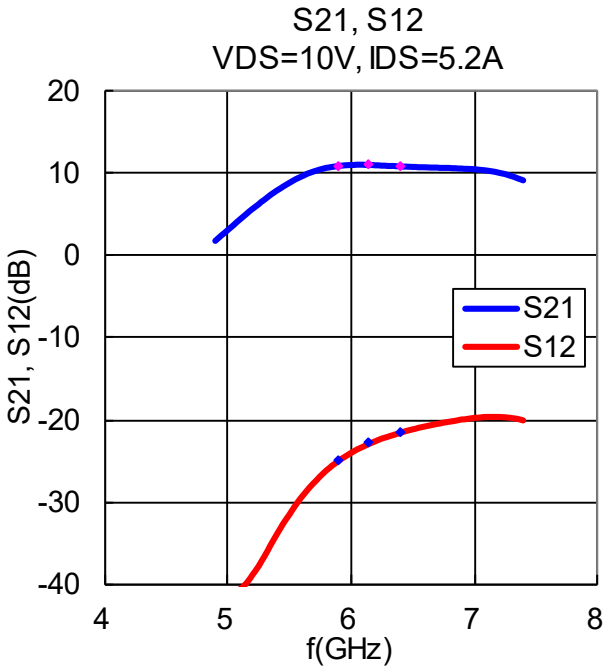
·S-Parameters

VDS= 10 V, IDSset= 5.2 A, f= 4.9 to 7.4 GHz, Ta= +25 ℃









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