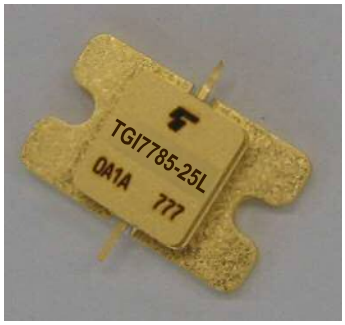
MICROWAVE POWER GaN HEMT
TGI7785-25L



FEATURES

·BROAD BAND INTERNALLY MATCHED HEMT

·HIGH POWER

Pout= 44.5dBm at Pin= 35.0dBm

·HIGH GAIN

GL= 12.0dB at 7.7GHz to 8.5GHz

·LOW INTERMODULATION DISTORTION

IM3= -40dBc(Min.) at Po=29.0dBm (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= 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	ηadd		%	—	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, Δf= 5MHz (Single Carrier Level)	dBc	-40	-42	—
Drain Current	IDS2		A	—	—	2.0
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin – Pout) X Rth(c-c)	°C	—	130	150

Recommended Gate Resistance(Rg): 60 Ω

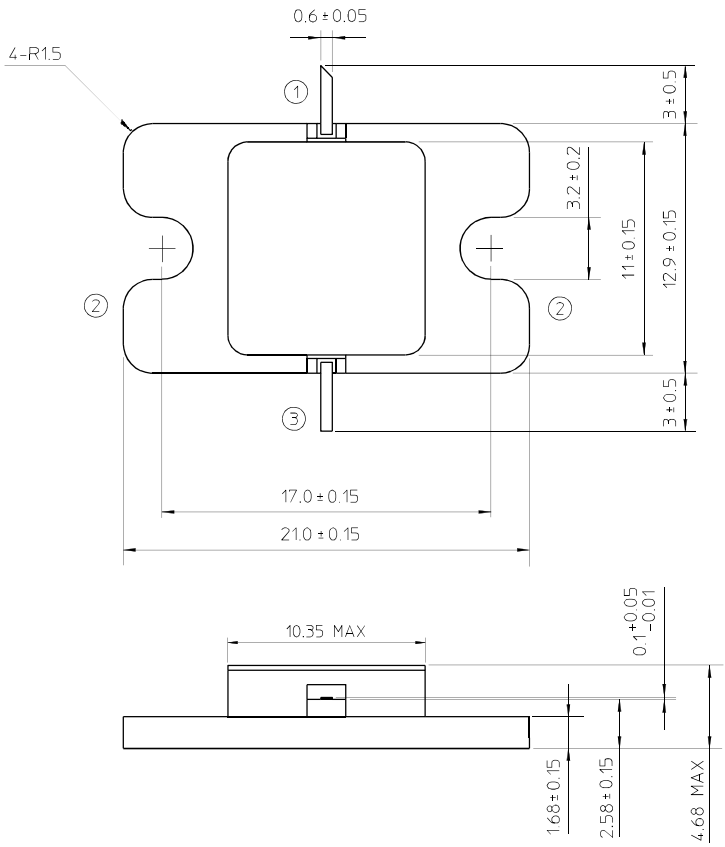
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

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	-2.0	-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

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)



Unit in mm

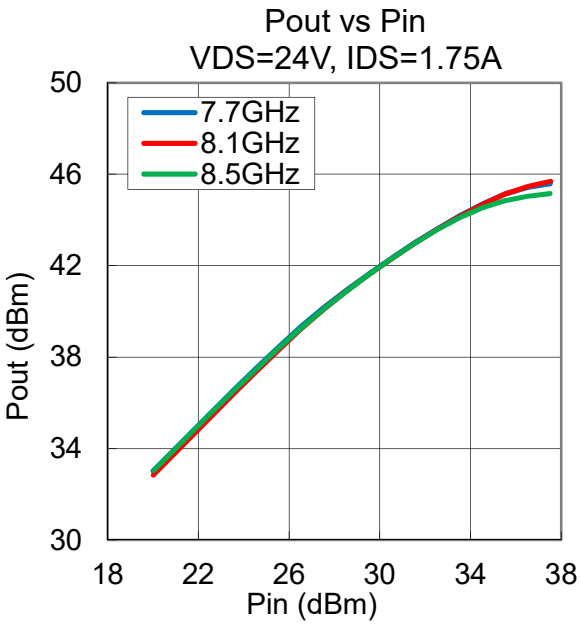
① Gate
② Source
③ Drain

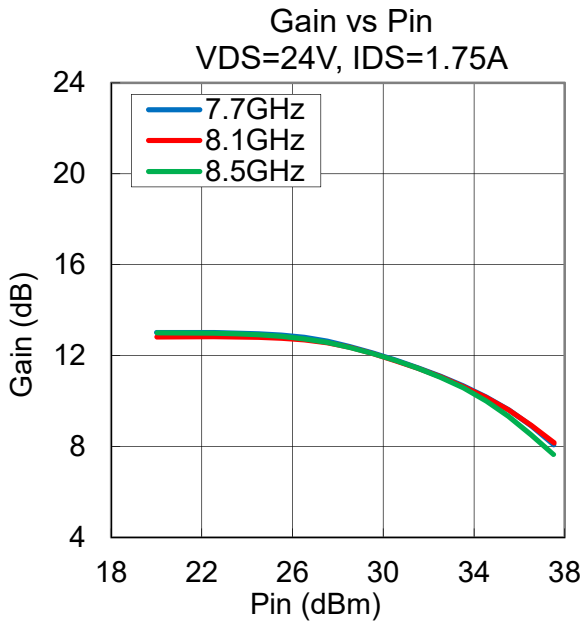
HANDLING PRECAUTIONS FOR PACKAGE MODEL

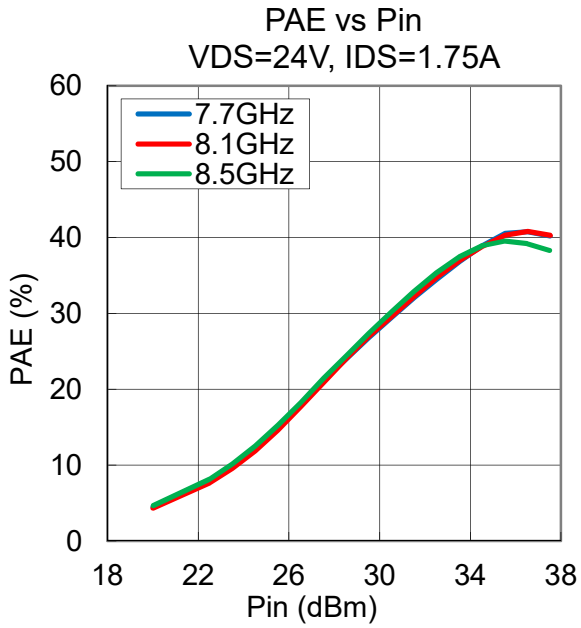
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C or 3 seconds at 350°C.

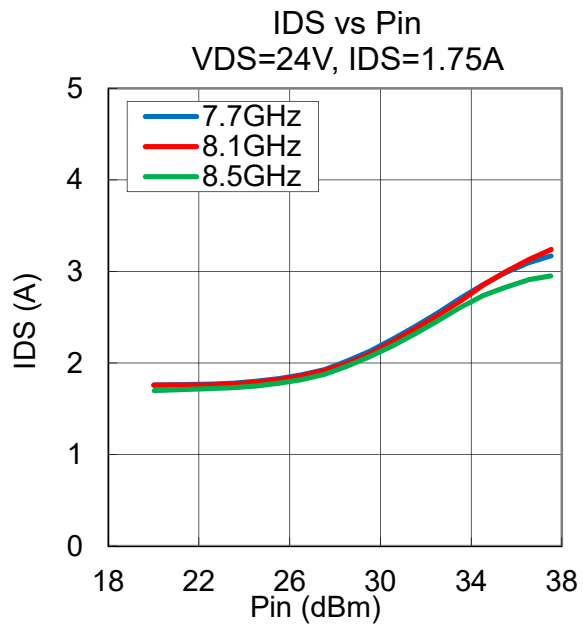
·Pout , Gain , PAE , IDS vs. Pin

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



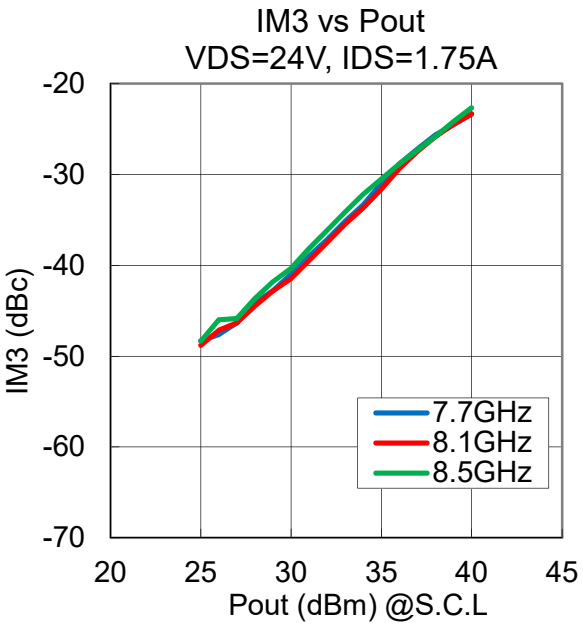


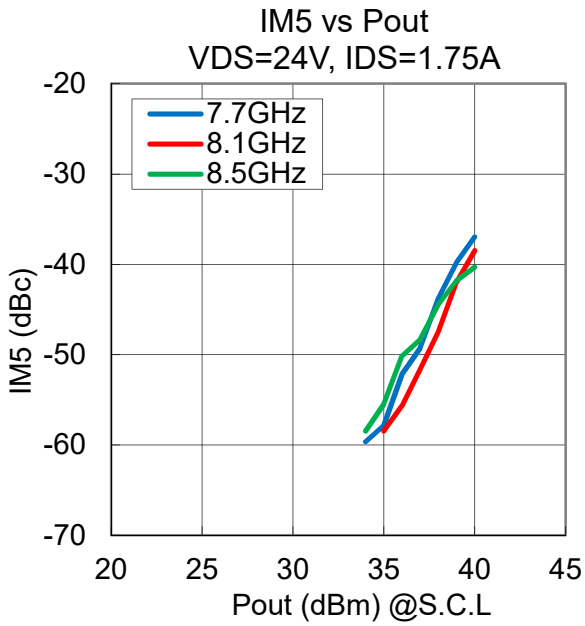




·IM3, IM5 vs. Pout

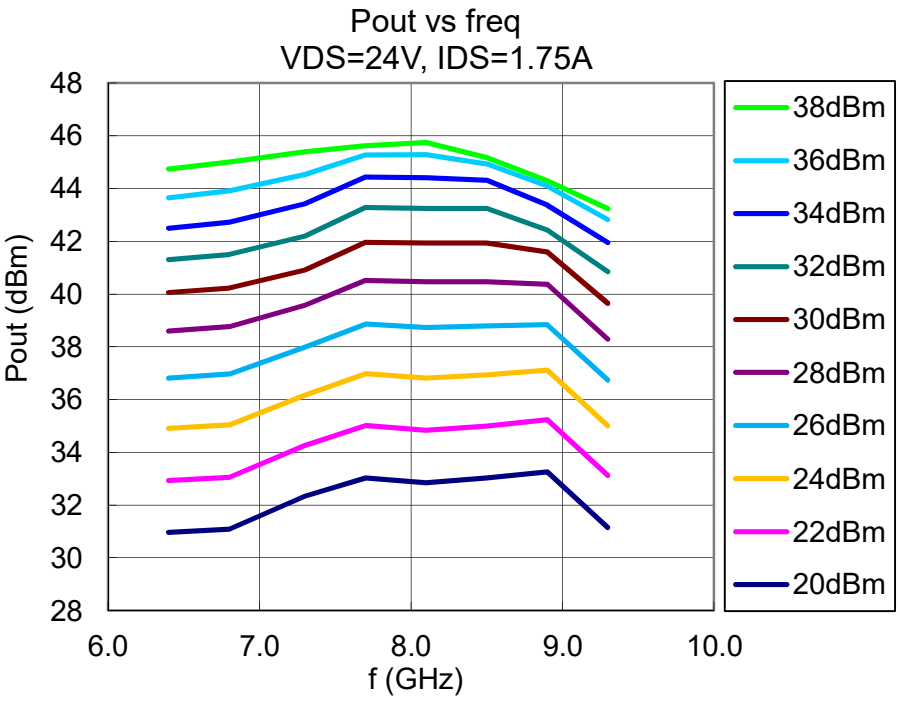
VDS= 24 V, IDSset= 1.75 A, f= 7.7, 8.1, 8.5 GHz, Δf= 5 MHz , Ta= +25 ℃





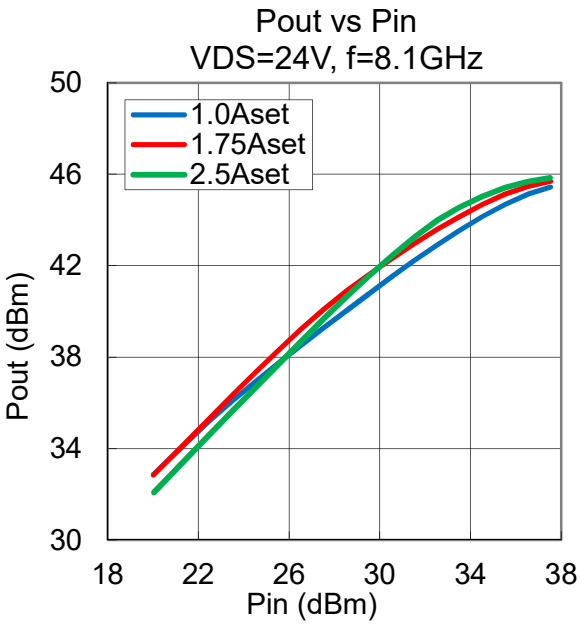
·Pout vs. Frequency

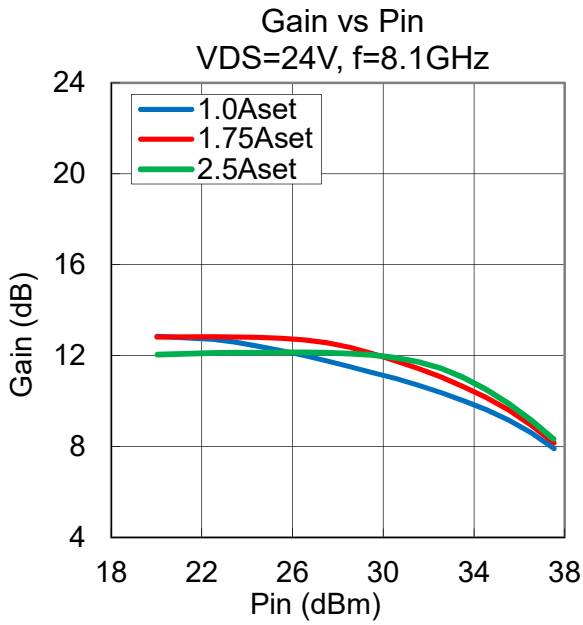
VDS= 24 V, IDSset= 1.75 A, Ta= +25 ℃

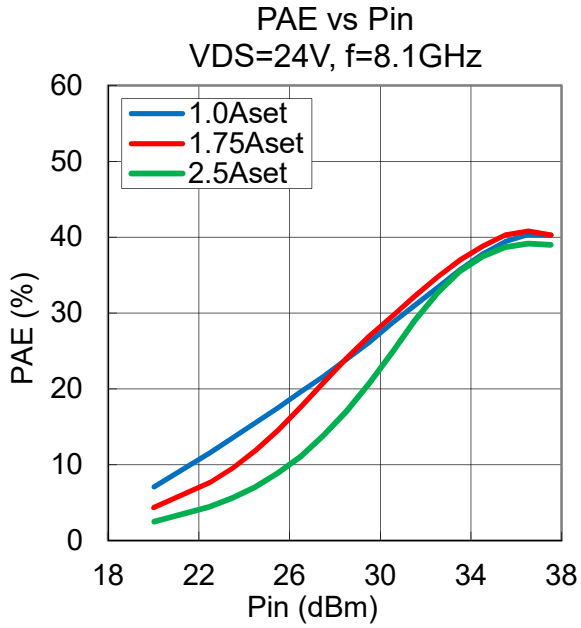


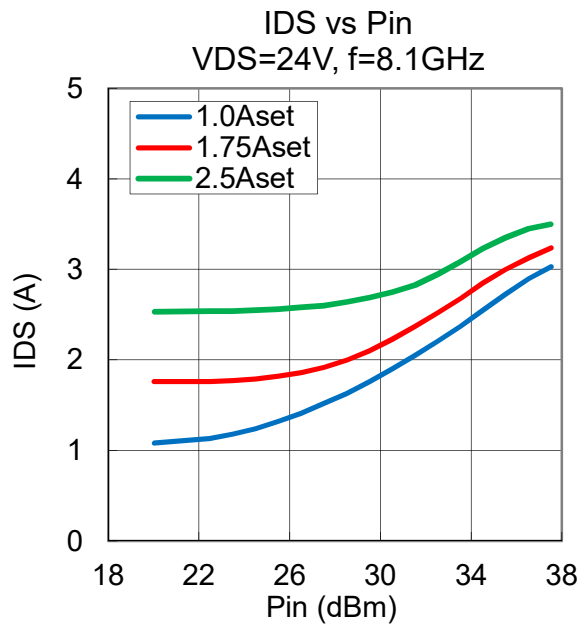
·Pout , Gain , PAE , IDS vs. Pin vs. IDSset

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



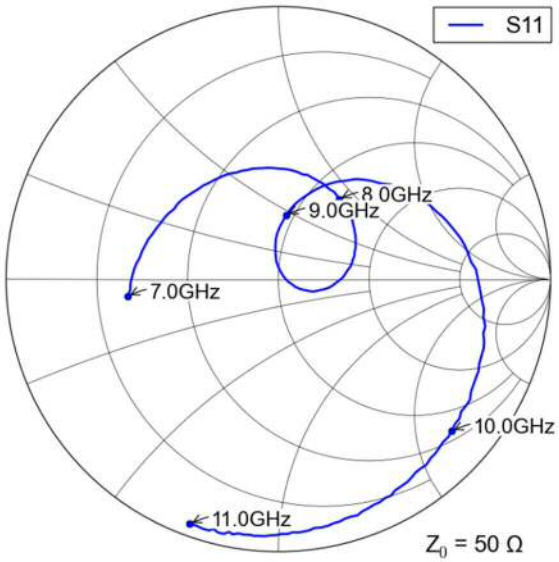


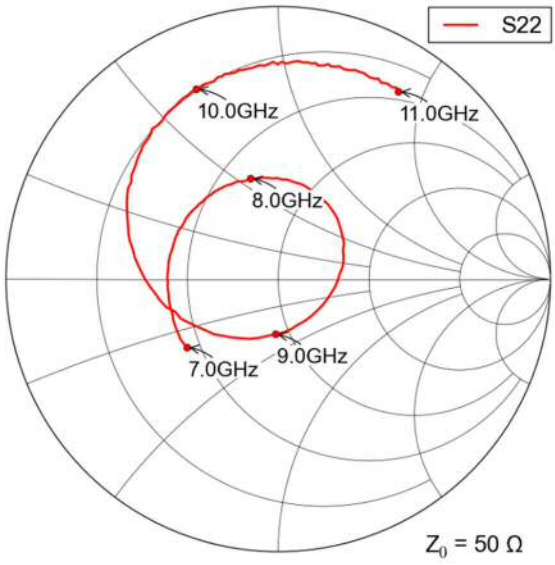


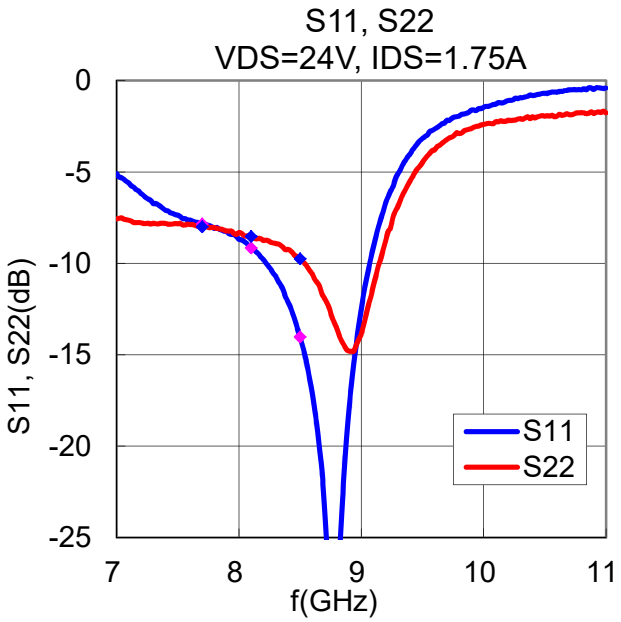


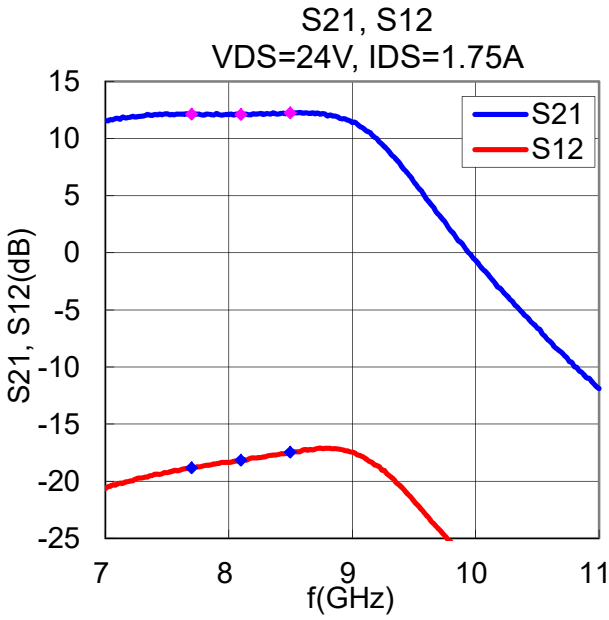
·S-Parameters

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









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