MICROWAVE POWER GaN HEMT
TGI1414-50L

FEATURES

·BROAD BAND INTERNALLY MATCHED HEMT

·HIGH POWER

Pout= 47.0dBm at Pin= 42.0dBm

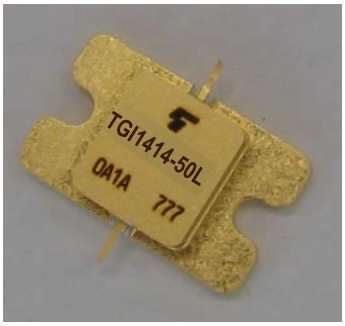
·HIGH GAIN

GL= 8.0dB at 14.0GHz to 14.5GHz

·LOW INTERMODULATION DISTORTION

IM3(Min.)= –25dBc at Po=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= 14.0 to 14.5 GHz @Pin= 42.0dBm	dBm	46.0	47.0	—
Gain flatness	ΔG		dB	—	—	±0.8
Drain Current	IDS1		A	—	5.0	6.0
Power Added Efficiency	ηadd		%	—	31	—
Gate Current	IgRF		dB	-40		+100
Linear Gain	GL	@Pin= 20dBm	dB	7.0	8.0	—
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po= 40.0dBm, Δf= 5MHz (Single Carrier Level)	dBc	-25	—	—
Drain Current	IDS2		A	—	5.0	6.0
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin – P1dB) X Rth(c-c)	°C	—	130	150

Recommended Gate Resistance(Rg): 13.3 Ω (TYP.)

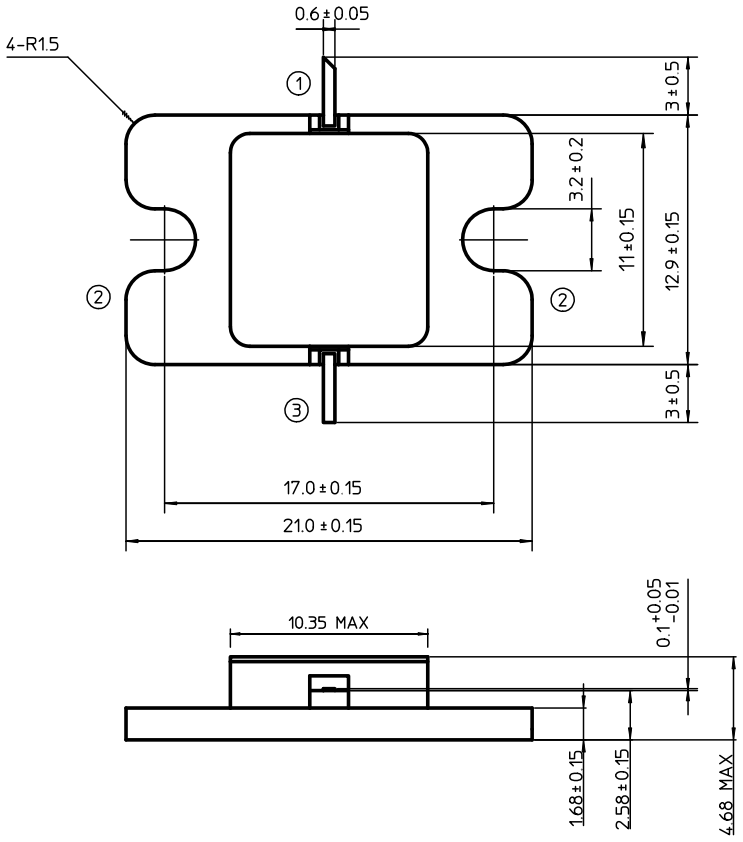
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

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	—	15.0	18.0
Gate-Source Breakdown Voltage	VGSO	IGS= -10mA	V	-10.0	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	1.4	1.6

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-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.