TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaN HEMT

TGI8596-50

FEATURES

■ **HIGH POWER**
Pout=47.0dBm at Pin=41.0dBm

■ **HIGH GAIN**
GL=9.0dB at 8.5GHz to 9.6GHz

■ **BROAD BAND INTERNALLY MATCHED HEMT**
HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power	Pout	VDS= 24V IDSset≅1.5A f = 8.5 to 9.6GHz @Pin = 41dBm	dBm	46.0	47.0	—
Drain Current	I_{DS1}		A	—	5.0	6.0
Power Added Efficiency	η_{add}		%	—	31	—
Linear Gain	GL	@Pin = 20dBm	dB	7.0	9.0	—
Channel Temperature Rise	ΔTch	(VDS X IDS1 + Pin – Pout)X Rth(c-c)	°C	—	130	150

Recommended gate resistance(Rg) : Rg= 13.3 Ω(TYP.)

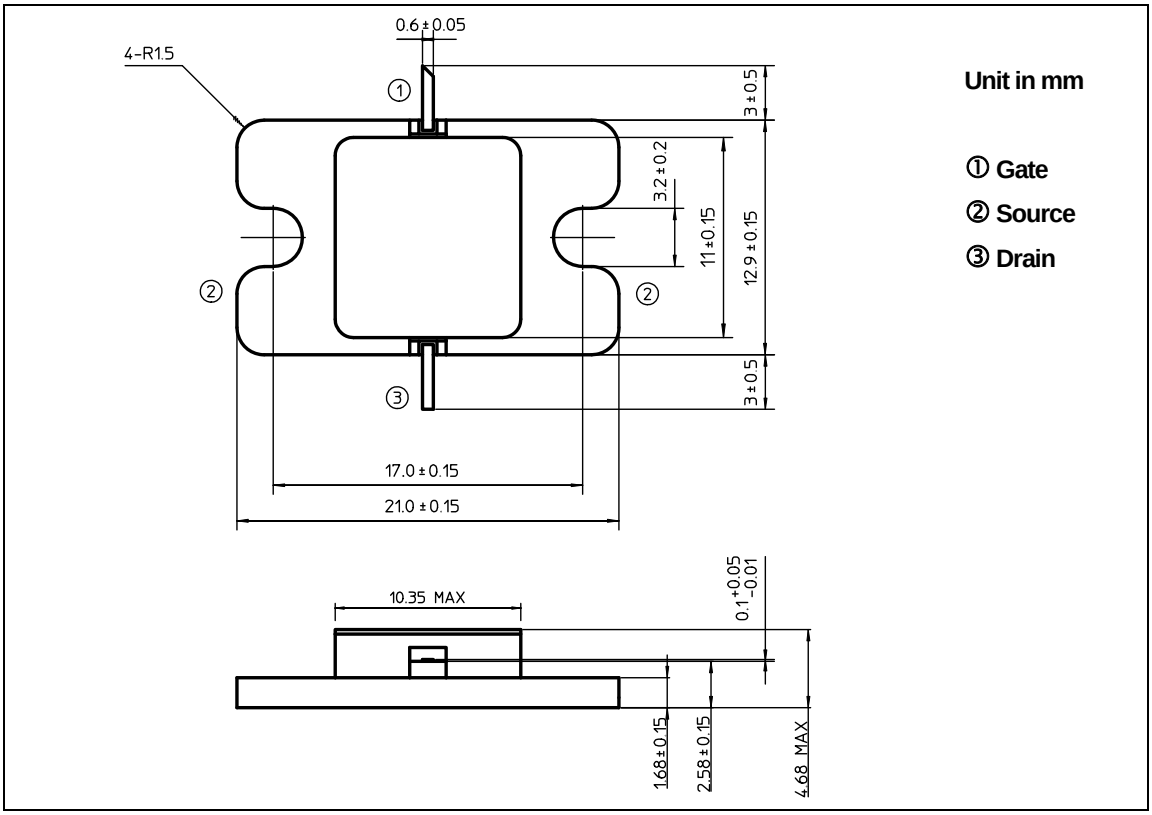
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

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	-4	-6
Saturated Drain Current	IDSS	VDS= 5V VGS= 0V	A	—	15	—
Gate-Source Breakdown Voltage	VGSO	IGS= -10mA	V	-10	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	—	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
Total Power Dissipation (Tc= 25 °C)	PT	W	140
Channel Temperature	Tch	°C	250
Storage	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.