TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM5867-15UL

FEATURES

- **LOW INTERMODULATION DISTORTION**
  IM3=-47 dBc at Pout= 31.0dBm
  Single Carrier Level
- **HIGH POWER**
  P1dB=42.0dBm at 5.85GHz to 6.75GHz
- **HIGH GAIN**
  G1dB=9.0dB(min.) at 5.85GHz to 6.75GHz
- **BROAD BAND INTERNALLY MATCHED FET**
- **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=3.2A f= 5.85 to 6.75GHz	dBm	41.0	42.0	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	9.0	10.0	—
Drain Current	IDS1		A	—	3.5	4.0
Gain Flatness	ΔG		dB	—	—	±0.8
Power Added Efficiency	ηadd		%	—	41	—
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po=31.0dBm (Single Carrier Level)	dBc	-42	-47	—
Drain Current	IDS2		A	—	3.5	4.0
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin – P1dB) X Rth(c-c)	°C	—	—	80

Recommended Gate Resistance(Rg): 100 Ω (Max.)

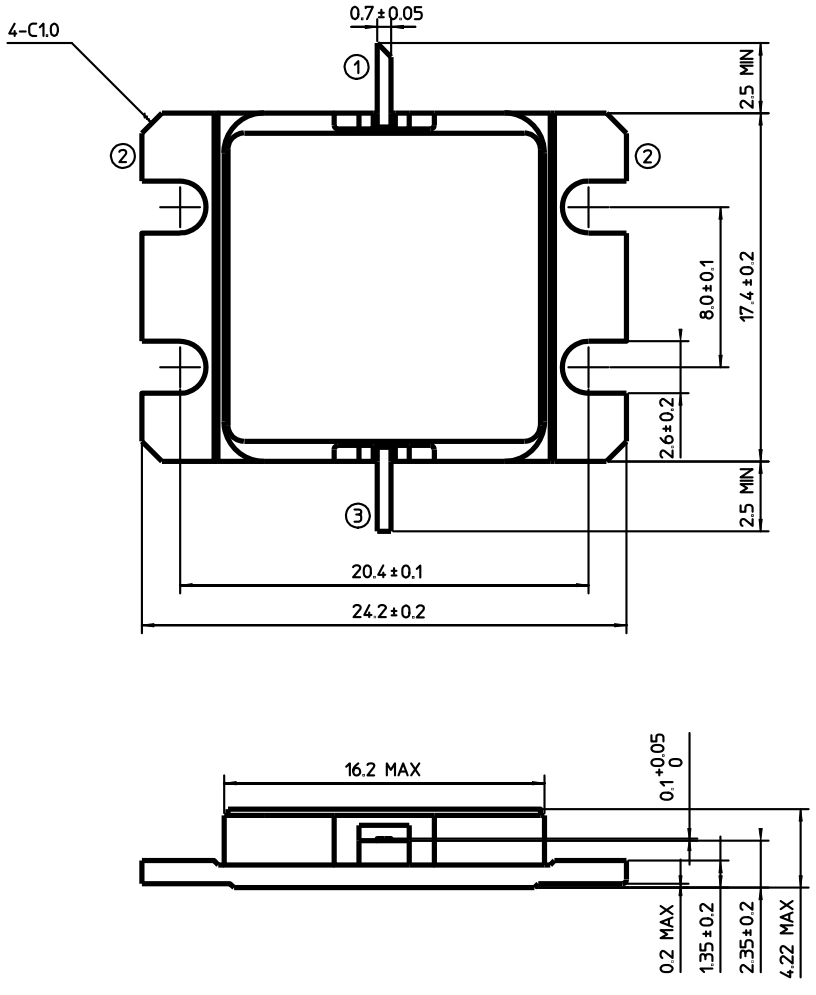
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 5A	S	—	4.0	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 40mA	V	-0.5	-2.0	-3.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	8.0	—
Gate-Source Breakdown Voltage	VGSO	IGS= -120μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	2.0	2.4

ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V_{DS}	V	15
Gate-Source Voltage	V_{GS}	V	-5
Drain Current	I_{DS}	A	12.0
Total Power Dissipation (Tc= 25 °C)	PT	W	62.5
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.