TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TPM2828-9

FEATURES

- **HIGH POWER**
  P2dB=39.0dBm at 2.8GHz to 2.9GHz
- **HIGH GAIN**
  G2dB=11.0dB at 2.8GHz to 2.9GHz
- **PARTIALLY MATCHED TYPE**
- **HERMETICALLY SEALED PACKAGE**

RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power at 2dB Gain Compression Point	P2dB	VDS= 12V IDSset≅2.0A f = 2.8GHz to 2.9GHz	dBm	39.0	39.5	—
Power Gain at 2dB Gain Compression Point	G2dB		dB	11.0	11.5	—
Drain Current	IDS		A	—	2.3	2.6
Power Added Efficiency	ηadd		%	—	30	—
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin – P1dB) X Rth(c-c)	°C	—	—	100

Recommended gate resistance (Rg) : Rg = 150 Ω (Max.)

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 1.5A	S	—	3.3	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 15mA	V	-1.0	-1.9	-3.3
Saturated Drain Current	IDSS	VDS= 2V VGS= 0V	A	—	4.5	—
Gate-Source Breakdown Voltage	VGSO	IGS= -150μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	3.2	4.8

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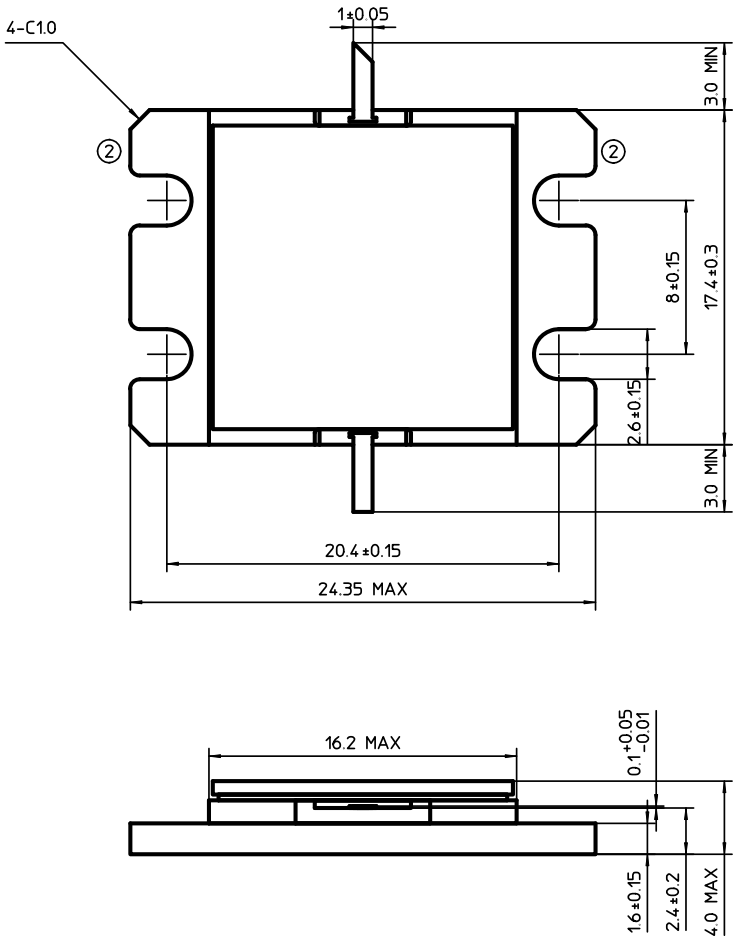
ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	15
Gate-Source Voltage	VGS	V	-5
Drain Current	IDS	A	7.0
Total Power Dissipation (Tc= 25 °C)	PT	W	31.25
Channel Temperature	Tch	°C	175
Storage	Tstg	°C	-65 ~ +175

PACKAGE OUTLINE (2-16G6A)



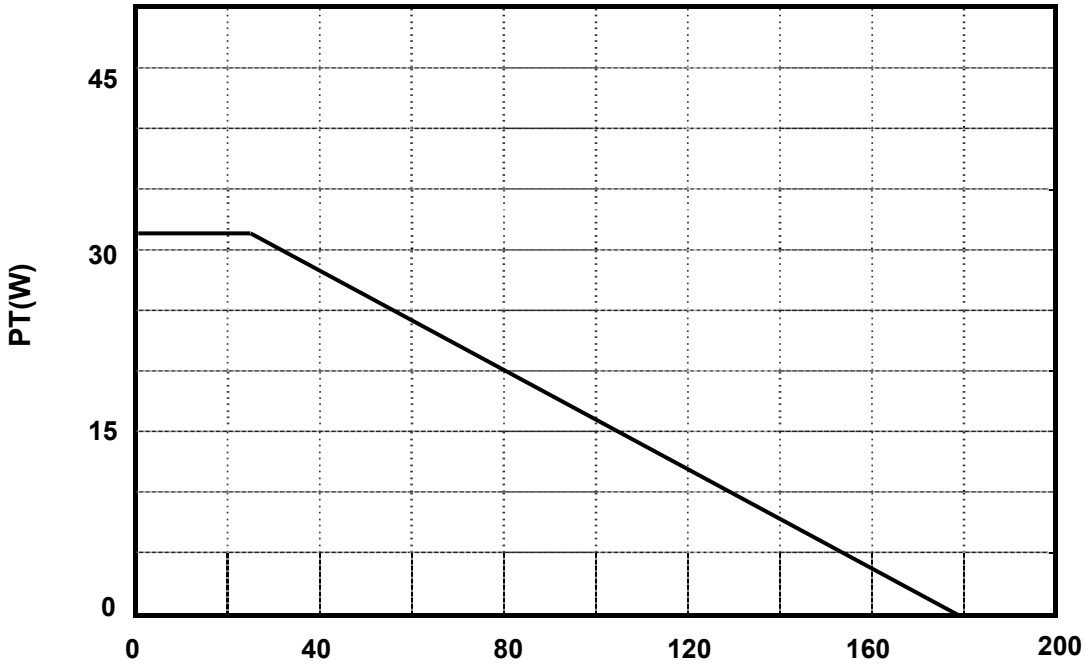
Unit in mm

① Gate
② Source
③ Drain

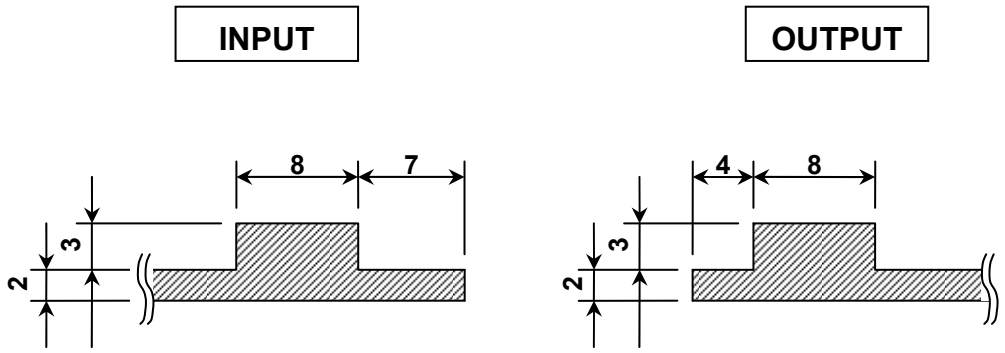
HANDLING PRECAUTIONS FOR PACKAGE MODEL

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

Power Dissipation(PT) vs. Case Temperature(Tc)



DRAWING OF RECOMMENDABLE MATCHING NETWORK



Unit: mm

Substrate Material: Teflon (Er=2.8)

Thickness: 0.8 mm