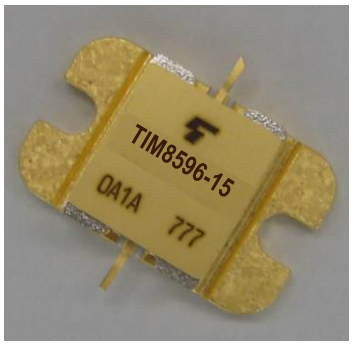
MICROWAVE POWER GaAs FET

TIM8596-15

FEATURES

- **BROAD BAND INTERNALLY MATCHED FET**
- **HIGH POWER**
  P1dB= 42.0dBm at 8.5GHz to 9.6GHz
- **HIGH GAIN**
  G1dB= 7.0dB at 8.5GHz to 9.6GHz
- **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= 9V IDSset= 4.0A f = 8.5 to 9.6GHz	dBm	41.0	42.0	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	6.0	7.0	—
Drain Current	IDS		A	—	4.5	5.5
Power Added Efficiency	ηadd		%	—	31	—
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin – P1dB) X Rth(c-c)	°C	—	—	100

Recommended Gate Resistance(Rg): 100 Ω

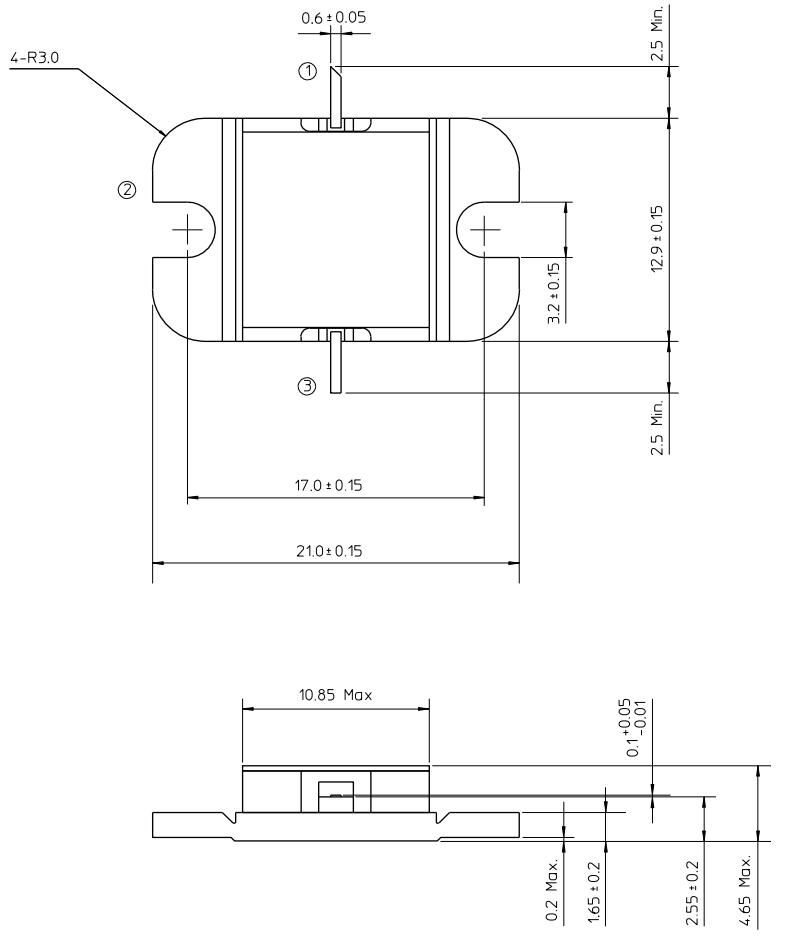
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 4.8A	S	—	3.0	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 145mA	V	-1.5	-3.0	-4.5
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	10.0	—
Gate-Source Breakdown Voltage	VGSO	IGS= --145μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	2.0	2.5

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	10.4
Total Power Dissipation (Tc= 25°C)	PT	W	60
Channel Temperature	Tch	°C	175
Storage	Tstg	°C	-65 to +175

PACKAGE OUTLINE (2-11C1B)



Unit in mm

(1) Gate

(2) Source

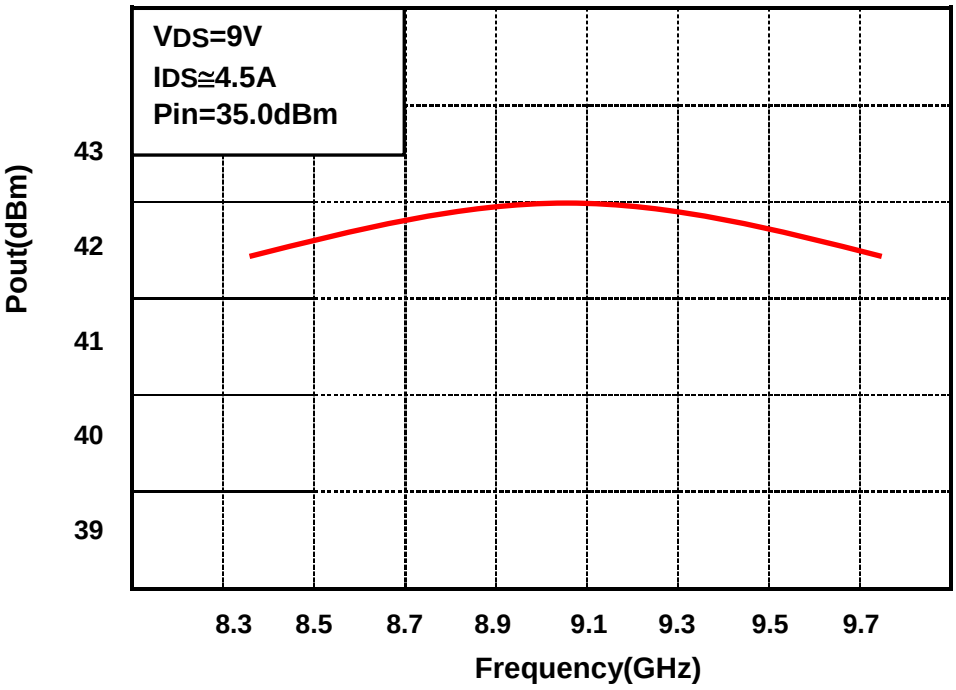
(3) Drain

HANDLING PRECAUTIONS FOR PACKAGE MODEL

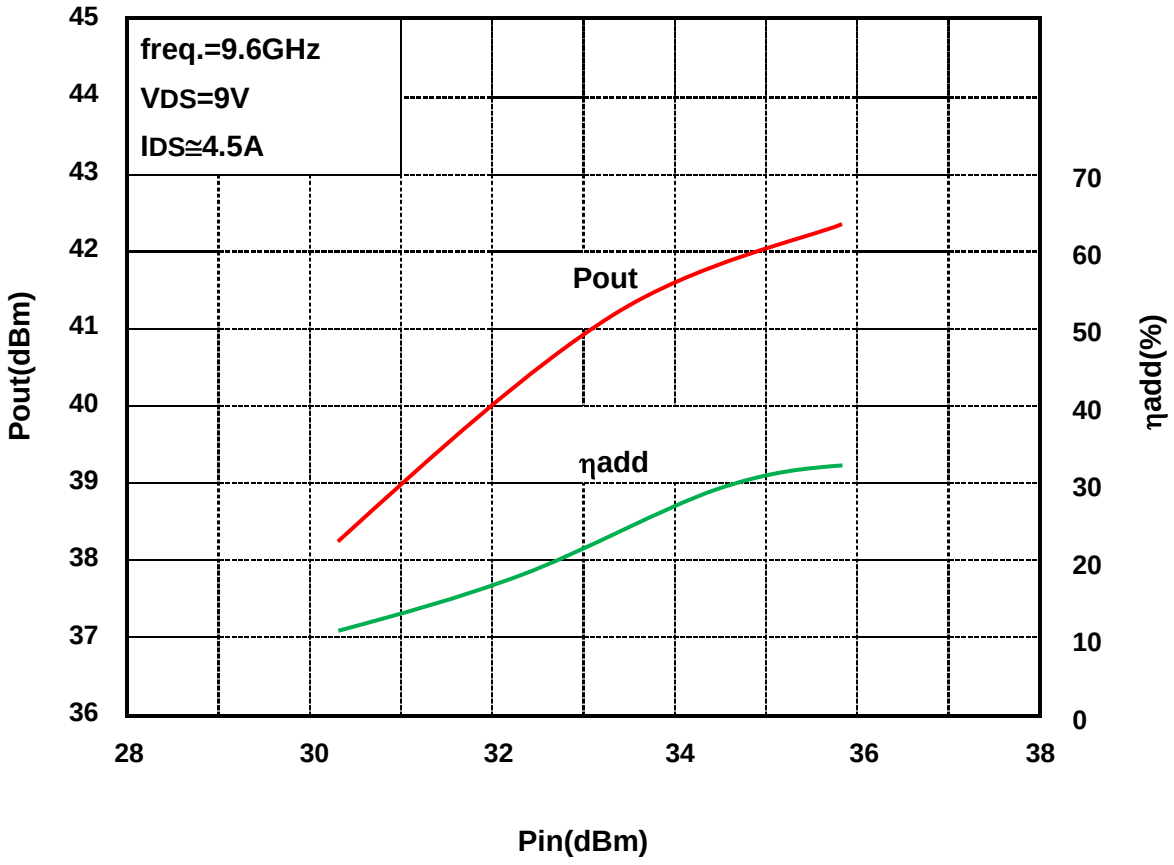
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C or 3 seconds at 350°C.

RF PERFORMANCE

Output Power (Pout) vs. Frequency



Output Power(Pout) vs. Input Power(Pin)



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