

TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM6472-35SL

FEATURES:

■ LOW INTERMODULATION DISTORTION

IM₃ = -45 dBc at P_o 35.0 dBm

■ HIGH POWER

P_{1dB} = 45.5 dBm at 6.4 to 7.2 GHz

■ HIGH EFFICIENCY

η_{add} = 37% at 6.4 to 7.2 GHz

■ HIGH GAIN

G_{1dB} = 8.0dB at 6.4 to 7.2 GHz

■ BROAD BAND INTERNALLY MATCHED

■ HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1 dB Compression Point	P _{1dB}	V _{DS} = 10V f = 6.4~7.2GHz	dBm	45.0	45.5	-
Power Gain at 1 dB Compression Point	G _{1dB}		dB	7.0	8.0	-
Drain Current	I _{DS}		A	-	8.0	9.0
Gain Flatness	ΔG		dB	-	-	±0.8
Power Added Efficiency	η_{add}		%	-	37	-
3rd Order Intermodulation Distortion	IM ₃	Note 1	dBc	-42	-45	-
Channel Temperature Rise	ΔT_{ch}	V _{DS} × I _{DS} × R _{th(c-c)}	°C	-	-	100

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Trans-conductance	gm	V _{DS} = 3V I _{DS} = 10.5A	mS	-	6500	-
Pinch-off Voltage	V _{GSoff}	V _{DS} = 3V I _{DS} = 140mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	I _{DSS}	V _{DS} = 3V V _{GS} = 0V	A	-	20	26
Gate-Source Breakdown Voltage	V _{GS0}	I _{GS} = -420 μ A	V	-5	-	-
Thermal Resistance	R _{th(c-c)}	Channel to Case	°C/W	-	1.0	1.3

Note 1: 2 tone Test Pout = 35dBm Single Carrier Level.

Recommended Gate Resistance(R_g) : R_g = R_{g1}(10 Ω) + R_{g2}(18 Ω) = 28 Ω (MAX.)

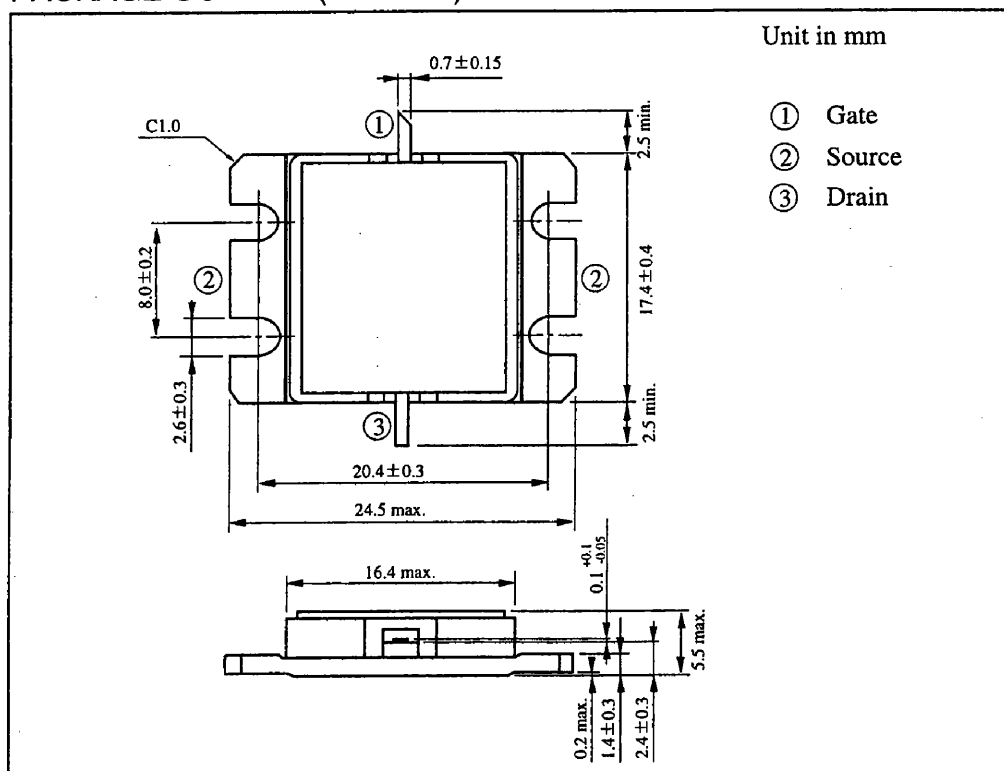
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ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V _{DS}	V	15
Gate-Source Voltage	V _{GS}	V	-5
Drain Current	I _{DS}	A	26
Total Power Dissipation (Tc=25°C)	P _T	W	115
Channel Temperature	T _{ch}	°C	175
Storage Temperature	T _{stg}	°C	-65~175

PACKAGE OUTLINE (2-16G1B)

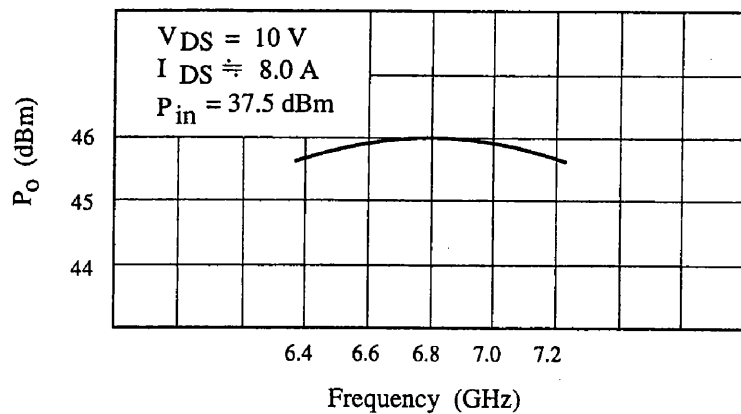


HANDLING PRECAUTIONS FOR PACKAGED TYPE

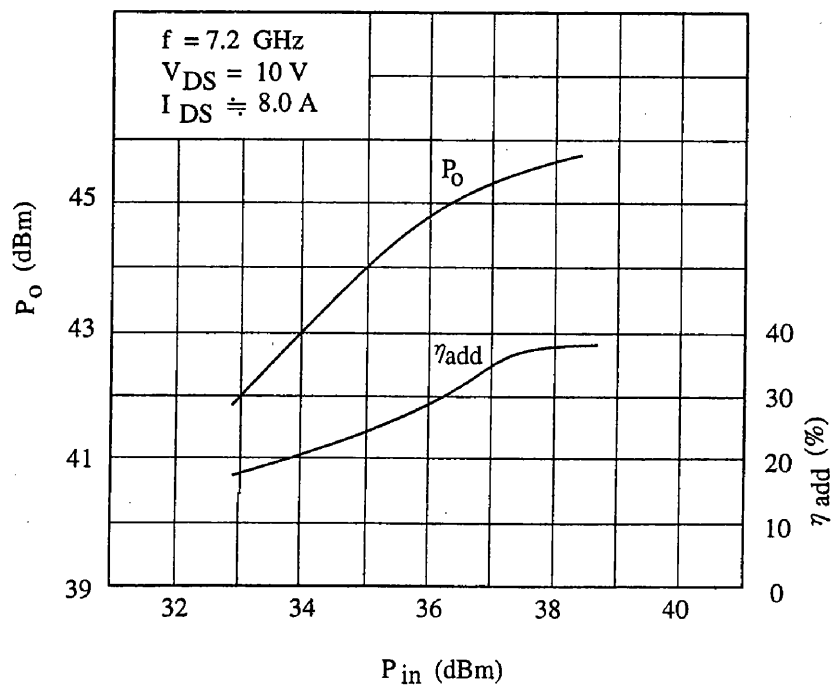
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES

Output Power vs. Frequency

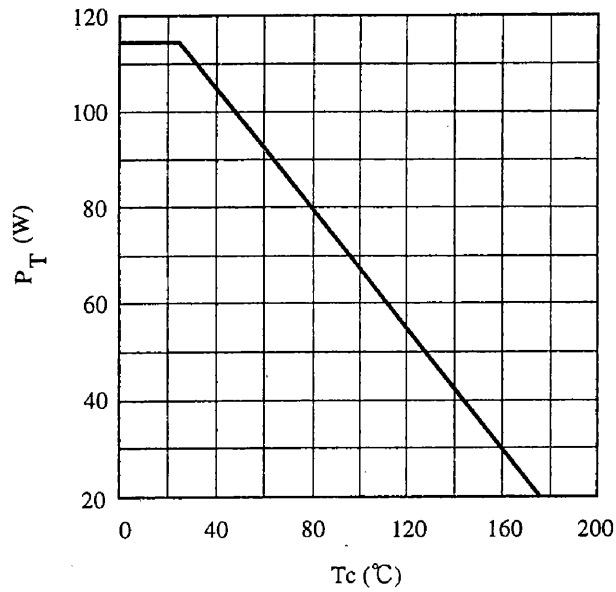


Output Power vs. Input Power



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POWER DISSIPATION VS. CASE TEMPERATURE



IM₃ VS. OUTPUT POWER CHARACTERISTICS

