DESCRIPTION

MGF7201A is a monolithic microwave integrated circuit for use in 14.0 ~ 14.5GHz band amplifiers.

FEATURES

- High output power
  P_{1dB} = 30mW (TYP.) @ f = 14 ~ 14.5 GHz
- High linear power gain
  G_P = 26dB (TYP.) @ f = 14 ~ 14.5 GHz

APPLICATIONS

14 GHz-band amplifiers

QUALITY GRADE

- IG

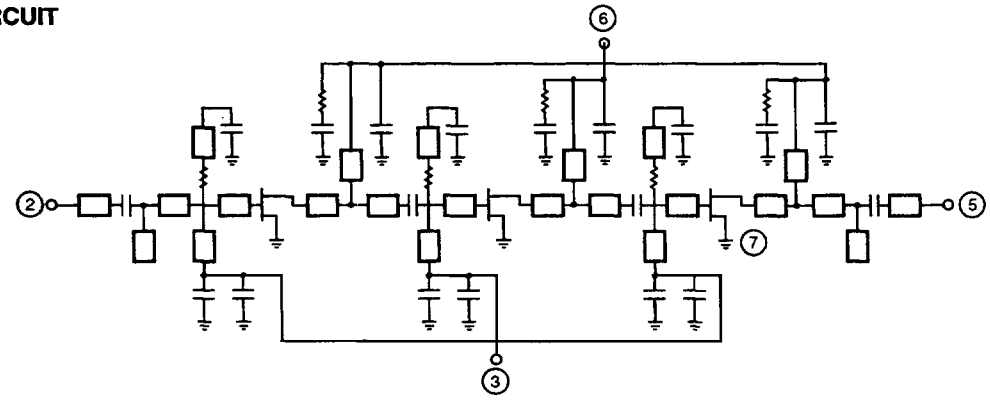
ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

SYMBOL	PARAMETER	RATINGS	UNIT
V_{GDO}	Gate to drain voltage	–10	V
V_{GSO}	Gate to source voltage	–10	V
I_D	Drain current	260	mA
P_T	Total power dissipation	900	mW
T_{ch}	Channel temperature	150	°C
T_{stg}	Storage temperature	–55 ~ +150	°C

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
I_D	Drain operating current	V_{DS} = 3V, V_{GS} = 0V	100	180	260	mA
$V_{GS(OFF)}$	Gate cut-off voltage	V_{DS} = 3V, I_D = 1MA	–0.5		–4	V
G_P	Power gain	V_{DS} = 5V	23	26		dBm
P_{1dB}	Output power at 1dB gain compression	I_D = 90mA	13	15		mW
ρ_{in}	Input VSWR	Z_G = 50Ω		2.0		—
ρ_{out}	Output VSWR	Z_L = 50Ω		2.0		—
η_{add}	Power added efficiency	f = 14.0 ~ 14.5GHz		10		%

EQUIVALENT CIRCUIT

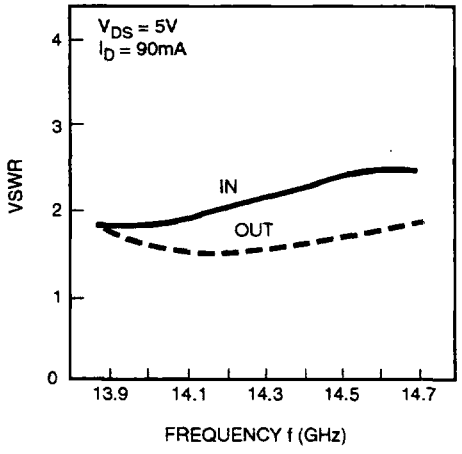


PRECAUTION

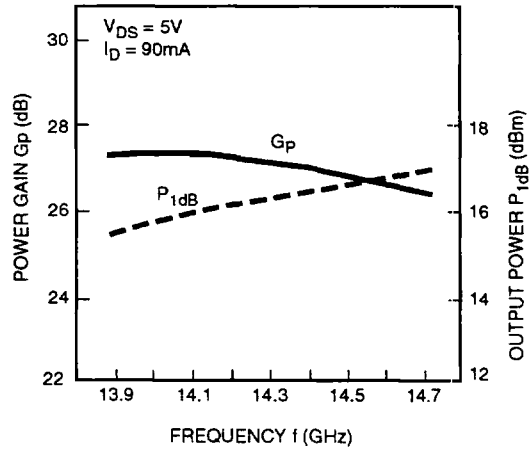
It is recommended to connect DC block capacitors to input and output terminal (② and ⑤) in order to prevent the failure due to surge.

TYPICAL CHARACTERISTICS (T_a = 25°C)

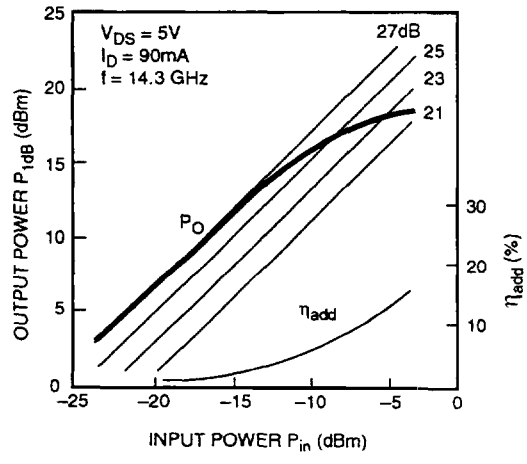
VSWR vs. f



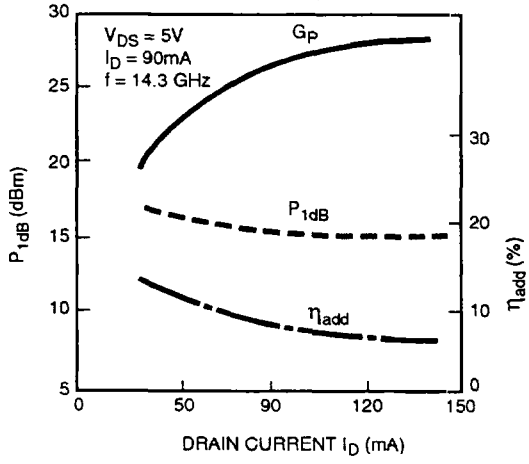
G_P & P_{1dB} vs. f



P_O & η_{add} vs. P_{IN}

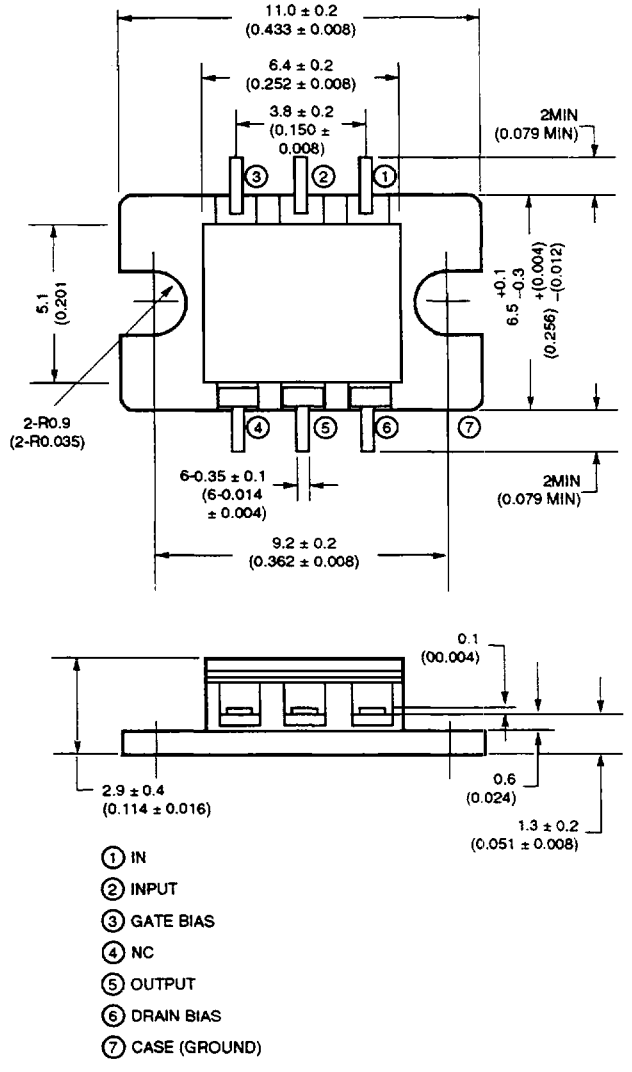


G_P, P_{1dB} & η_{add} vs. I_D



OUTLINE DRAWING

Unit: mm (inches)



① IN
② INPUT
③ GATE BIAS
④ NC
⑤ OUTPUT
⑥ DRAIN BIAS
⑦ CASE (GROUND)

ORDERING INFORMATION

Part Number	Grade	Tested at	P_{1dB}	Notes
MGF7201A-01	Industrial	14.0 – 14.5 GHz	30 mW	