

Thin Film Surface Mount Amplifier 1 to 1000 MHz

Description

The **ASMA-301** is a 50 Ohm GaAs FET amplifier featuring internal biasing and feedback networks. The **ASMA-301** will find application in RF/Microwave systems up to 2.0 GHz requiring superior broadband, high linearity and excellent stability.

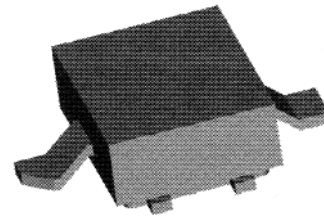
Features

- Unconditionally Stable 50 Ohm Gain Block
- Cascadable Broadband Performance
- Single Positive Supply Operation
- Usable to 2 GHz with Simple External Matching

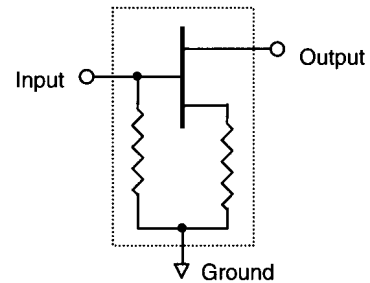
Maximum Ratings $T_c = 25\text{ }^\circ\text{C}$

SYMBOL	RATING	UNITS
V_D	15	V
P_{IN}	+25	dBm
T_{Ch}	+175	$^\circ\text{C}$
T_{SOLDER}	+260 $^\circ\text{C}$ for 10 Seconds	$^\circ\text{C}$
T_{STG}	-65 to +150	$^\circ\text{C}$

Package Style Ceramic Power Pack



Schematic



ELECTRICAL SPECIFICATIONS $V_D = 11.0\text{ Vdc}$

SYMBOL	Characteristics	$T_c = +25\text{ }^\circ\text{C}$ TYPICAL	$T_c = 0\text{ to }+50\text{ }^\circ\text{C}$		UNITS
			MINIMUM	MAXIMUM	
BW	Frequency Range	---	1	1,000	MHz
G_p	Small Signal Power Gain	10.5	10		dB
ΔG_p	Gain Flatness	± 0.6		± 1.0	dB
NF	Noise Figure (100 MHz)	5.0		6.5	dB
P_{1dB}	Power Output at 1dB Compression	+28	+27		dBm
VSWR	Input	2.3:1		2.5:1	---
	Output	3.0:1		3.5:1	
REV. ISOL.	Reverse Isolation	22	---	---	dB
I_{P2}	Two Tone 2 nd Order Intercept Point	+54	---	---	dBm
I_{P3}	Two Tone 3 rd Order Intercept Point	+42	---	---	dBm
H_{P2}	Single Tone 2 nd Harmonic Intercept Point	+60	---	---	dBm
I_D	Device Current	200	---	240	mA



ASMA203
26dBm, 50 Ohm Amplifier 1-300MHz

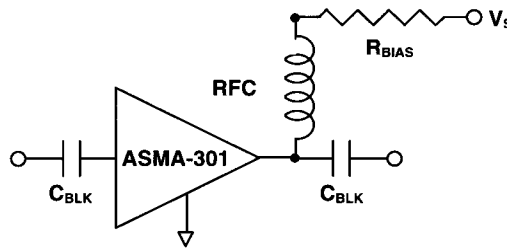
Electrical Specifications

$I_D = 250 \text{ mA}$

SYMBOL	CHARACTERISTICS	$T_C = 25^\circ\text{C}$ TYPICAL	$T_C = 0 \text{ to } 50^\circ\text{C}$		UNITS
			MINIMUM	MAXIMUM	
BW	Frequency Range	---	1	300	MHz
G_P	Small Signal Power Gain	13.0	12.0		dB
ΔG_P	Gain Flatness	± 0.2		± 0.5	dB
NF	Noise Figure (100 MHz)	6.0			dB
P_{1dB}	Power Output at 1 dB Compression	+27	+26.0		dBm
VSWR	Input/	2.0:1		2.5:1	---
	Output	2.2:1		2.5:1	
REV ISO.	Reverse Isolation	19	---	---	dB
I_{P2}	Two Tone 2 nd Order Intercept Point	+53	---	---	dBm
I_{P3}	Two Tone 3 rd Order Intercept Point	+41	---	---	dBm
H_{P2}	Single Tone 2 nd Harmonic Intercept Point	+59	---	---	dBm
V_D	Device Voltage	12.5	11.5	13.5	V

ASMA-301

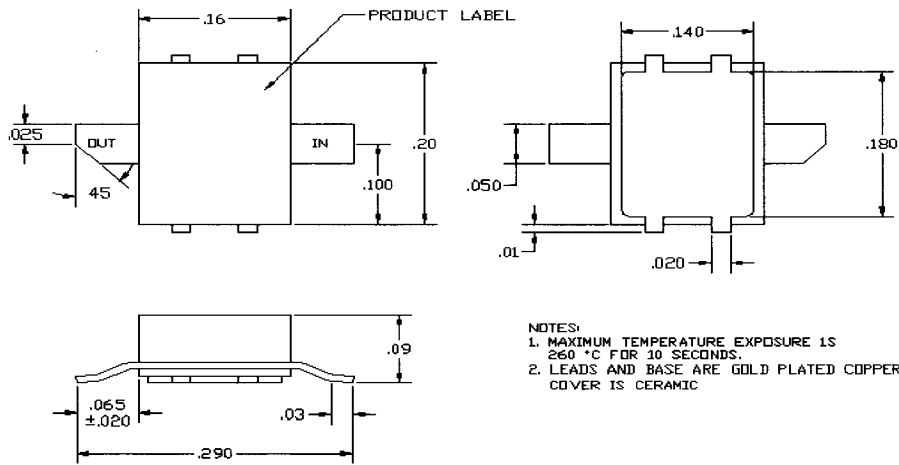
Typical Bias Configuration



Typical Component Values

Frequency MHz	C _{BLK} pF	RFC μH	R _{BIAS} Ω	V _S V
100	1,500	75	5	12
500	330	15	20	15
1000	180	0.075	65	24

Outline Drawing



- NOTES:
1. MAXIMUM TEMPERATURE EXPOSURE IS 260 °C FOR 10 SECONDS.
 2. LEADS AND BASE ARE GOLD PLATED COPPER COVER IS CERAMIC