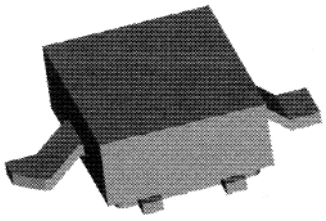
TriQuint SEMICONDUCTOR

ASMA-301

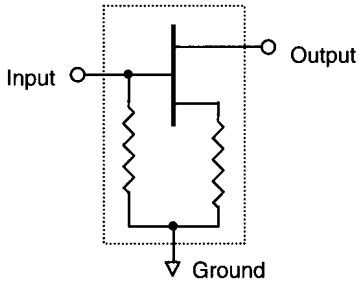
Thin Film Surface Mount Amplifier
1 to 1000 MHz

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.

Package Style
Ceramic Power Pack



Schematic



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 °C

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

ELECTRICAL SPECIFICATIONS V_D = 11.0 Vdc

SYMBOL	Characteristics	T_C = +25 °C TYPICAL	T_C = 0 to +50 °C MINIMUM	T_C = 0 to +50 °C MAXIMUM	UNITS
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 Output	2.3:1 3.0:1		2.5:1 3.5:1	---
REV. ISOL.	Reverse Isolation	22	---	---	dB
I_{P2}	Two Tone 2nd Order Intercept Point	+54	---	---	dBm
I_{P3}	Two Tone 3rd Order Intercept Point	+42	---	---	dBm
H_{P2}	Single Tone 2nd Harmonic Intercept Point	+60	---	---	dBm
I_D	Device Current	200	---	240	mA

PEAK DEVICES

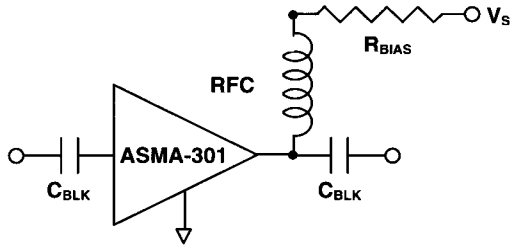
ASMA203
26dBm, 50 Ohm Amplifier 1-300MHz

Electrical Specifications I_D = 250 mA

SYMBOL	CHARACTERISTICS	T_C = 25°C TYPICAL	T_C = 0 to 50°C MINIMUM	T_C = 0 to 50°C MAXIMUM	UNITS
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/ Output	2.0:1 2.2:1		2.5:1 2.5:1	---
REV ISO.	Reverse Isolation	19	---	---	dB
I_{P2}	Two Tone 2nd Order Intercept Point	+53	---	---	dBm
I_{P3}	Two Tone 3rd Order Intercept Point	+41	---	---	dBm
H_{P2}	Single Tone 2nd Harmonic Intercept Point	+59	---	---	dBm
V_D	Device Voltage	12.5	11.5	13.5	V

ASMA-301

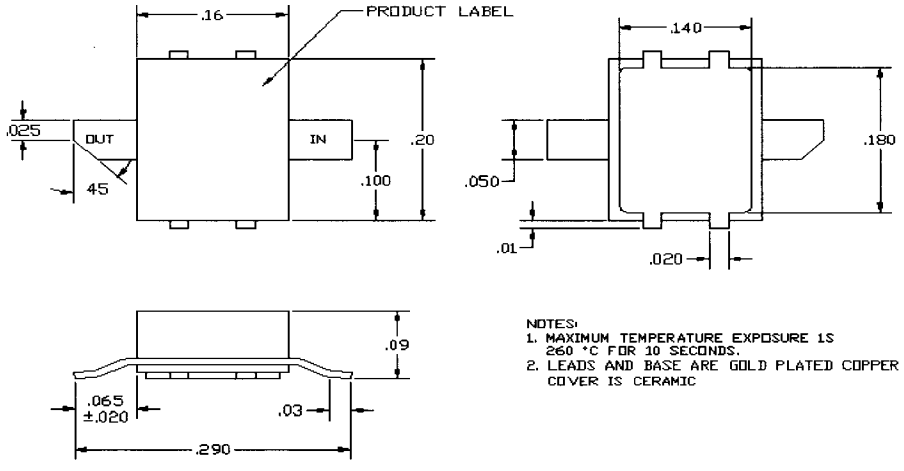
Typical Bias Configuration



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