

## Product Features

- GaAs Push Pull
- Extremely Low Distortion
- Guaranteed Broadband Power Gain
- Heat Sink 99.9% Copper, & Gold Plated
- Excellent Thermal Conductivity
- Single Supply Voltage @ 24V
- Low DC Power Consumption
- Optimal Reliability

## Application

- CATV Trunk Amplifier
- Optical Drive Amplifier



Package Type: SOT-115J

## Description

Hybrid Push Pull amplifier for CATV Systems up to 1000MHz in frequency. This hybrid amplifier module operates with a single voltage supply of 24V(DC), and use GaAs MMIC technology.

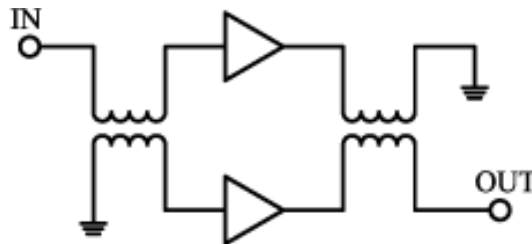
## Quick Reference Data

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$G_p$	Power Gain	F = 45 MHz	18.0	19.0	dB
		F = 1000 MHz	19.5	20.5	dB
$I_{tot}$	Total Current Consumption (DC)	$V_{cc} = 24V$	200	250	mA

## Limiting Values

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
$V_i$	RF Input Voltage (Single Tone)	-	+70	dBmV
V	DC Supply Over Voltage (5 minutes)		28	V
$T_{stg}$	Storage Temperature	-40	+100	°C
$T_{mb}$	Operating Mounting Base Temperature	-20	+100	°C

## Functional Diagram



## CHARACTERISTICS

Bandwidth 45 to 1000MHz;  $V_{CC} = 24V$ ;  $T_{case} = 25^{\circ}C$ ;  $Z_S = Z_L = 75\Omega$

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$G_p$	Power Gain	f = 45 MHz	18.0	-	19.0	dB
		f = 1000 MHz	19.5	-	20.5	dB
$G_v$	Gain Variation	f = 45 to 1000 MHz (Over Operating temperature range)	-	-	$\pm 1$	dB
SL	Slope Cable Equivalent	f = 45 to 1000 MHz	1.0	-	2.0	dB
FL	Flatness of Frequency Response	f = 45 to 1000 MHz	-	-	0.6	dB
$S_{11}$	Input Return Loss Linear de-rating from 45 to 1000MHz (Straight line between endpoints)	f = 45 to 1000 MHz	17.0	-	20.0	dB
$S_{22}$	Output Return Loss Linear de-rating from 45 to 1000MHz (Straight line between endpoints)	f = 45 to 1000 MHz	15.0	-	20.0	dB
2IM	Two tone Test	38dBmV flat (Carrier at 77.25MHz, tones at 924 and 1000MHz)	76	77		dBc
F	Noise Figure	f = 45 MHz	-	5.0	6.0	dB
		f = 1000 MHz	-	5.8	8.0	dB
$I_{tot}$	Total Current Consumption (DC)		200	220	250	mA

## DISTORTION

Bandwidth 45 to 870MHz;  $V_{CC} = 24V$ ;  $T_{case} = 25^{\circ}C$ ;  $Z_S = Z_L = 75\Omega$

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
CTB	Composite Triple Beat	135 channel flat; $V_o = +40dBmV$	-	-59	-57	dBc
XMOD	Cross Modulation	135 channel flat; $V_o = +40dBmV$	-	-57	-53	dBc
CSO	Composite Second Order Distortion	135 channel flat; $V_o = +40dBmV$	-	-60	-58	dBc

Notes;

135 Channels, NTSC frequency raster: 55.25MHz to 859.25MHz, +40dBmV flated output level.

CTB, XMOD, CSO definitions follow NCTA definition

## ESD PROTECTION

Gallium Arsenide Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices. Some of the precautions recommended are;

- Person at a workbench should be earthed via a wrist strap and a resistor.
- All mains-powered equipment should be connected to the mains via an earth-leakage switch.
- Equipment cases should be grounded.
- Relative humidity should be maintained between 40% and 50%.
- An ionizer is recommended.
- Keep static materials, such as plastic envelopes and plastic trays etc. away from the workbench.

