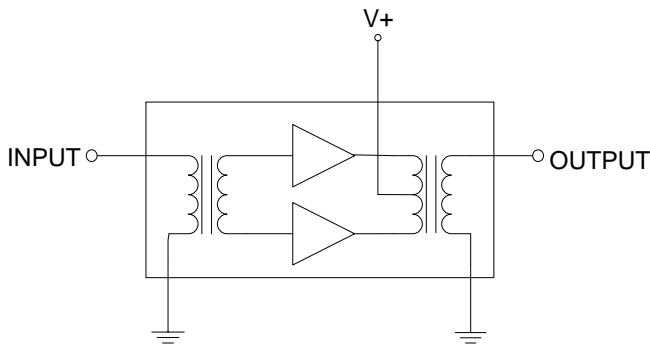


Product Description

The QPA3320 is a Hybrid Push Pull amplifier module. The part employs GaAs/GaN die and is operated from 40 MHz to 1003 MHz. It provides excellent linearity and superior return loss performance with low noise and optimal reliability.

Functional Block Diagram



Package: SOT-115J

Product Features

- Excellent Linearity
- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Extremely Low Noise
- Unconditionally Stable Under all Terminations
- 34.5 dB Min Gain at 1003 MHz
- 280 mA Max. at 24 VDC

Applications

- 40– 1003 MHz CATV Amplifier Systems

Ordering Information

Part No.	Description
QPA3320	Box with 50 pcs

QPA3320 Absolute Maximum Ratings

Parameter	Value / Range
RF Input Voltage (single tone)	70 dBmV
DC Supply over-voltage (5 minutes)	+30 V
Storage Temperature	-40 to 100 °C
Operating Mounting Base Temperature	-30 to 85 °C

Operation of this device outside the parameter ranges given above may cause permanent damage.

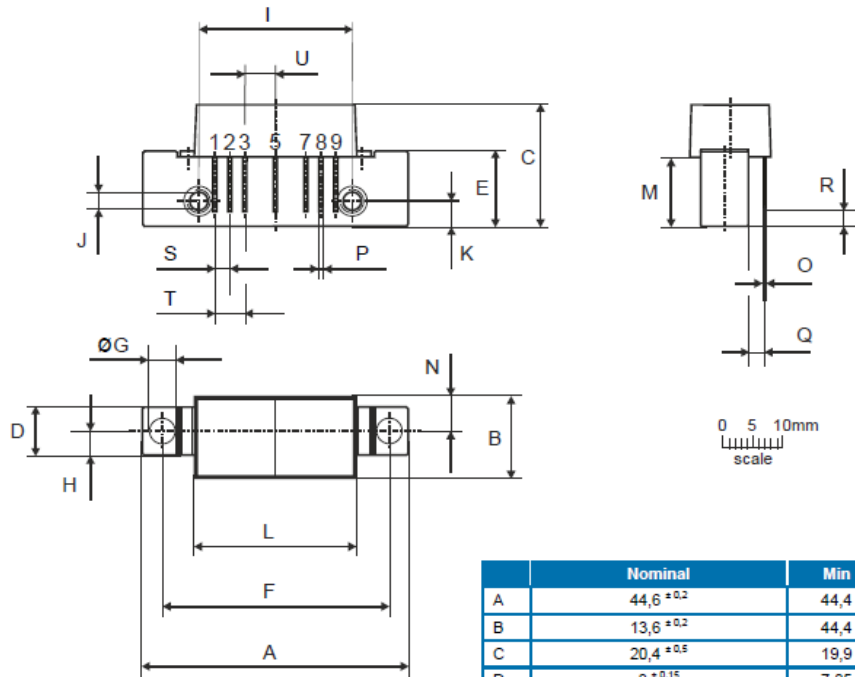
Electrical Specifications

Parameter	Conditions (V+=24V, TMB=30°C, ZS=ZL=75Ω)	Min	Typ	Max	Units
Operational Frequency Range	–	40	–	1003	MHz
Current (I _{DD})	–			280	mA
Gain	f _o = 50 MHz		34.0		dB
Gain	f _o = 1003 MHz	34.5		36.5	
Gain Slope	40 to 1003 MHz ^[1]	0.5		2.5	
Gain Flatness	40 to 1003 MHz			1.0	
Input Return Loss	f _o = 40 to 160 MHz	20		–	dB
	f _o = 160 to 870 MHz	17		–	
	f _o = 870 to 1003 MHz	16		–	
Output Return Loss	f _o = 40 to 160 MHz	20		–	dB
	f _o = 160 to 870 MHz	17		–	
	f _o = 870 to 1003 MHz	16		–	
Noise Figure	f _o = 50 to 1003 MHz	–		4.5	dB
CTB			-66	-64	dBc
XMOD	V _o =44 dBmV, flat, 110 analog channels ^[2]		-60	-58	dBc
CSO			-65	-63	dBc

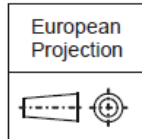
1. The slope is defined as the difference between the gain at the start frequency and the gain at the stop frequency.
2. 110 analog channels, NTSC frequency raster: 55.25MHz to 745.25MHz, +44dBmV flat output level.

Composite Second Order (CSO) - The CSO parameter (both sum and difference products) is defined by ANSI/SCTE 6. Composite Triple Beat (CTB) The CTB parameter is defined by ANSI/SCTE 6. Cross Modulation (XMOD) - Cross modulation (XMOD) is measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested. Carrier to Intermodulation Noise (CIN) - The CIN parameter is defined by ANSI/SCTE 17 (Test procedure for carrier to noise).

Package Drawing (Dimensions in millimeters)



Notes:



Pinning:

Pin	Name
1	Input
2-3	GND
4	
5	+VB
6	
7-8	GND
9	Output

	Nominal	Min	Max
A	44,6 ±0,2	44,4	44,8
B	13,6 ±0,2	13,4	13,8
C	20,4 ±0,5	19,9	20,9
D	8 ±0,15	7,85	8,15
E	12,6 ±0,15	12,45	12,75
F	38,1 ±0,2	37,9	38,3
G	4 +0,2/-0,05	3,95	4,2
H	4 ±0,2	3,8	4,2
I	25,4 ±0,2	25,2	25,6
J	UNC 6-32	-	-
K	4,2 ±0,2	4,0	4,4
L	27,2 ±0,2	27,0	27,4
M	11,6 ±0,5	11,1	12,1
N	5,8 ±0,4	5,4	6,2
O	0,25 ±0,02	0,23	0,27
P	0,45 ±0,03	0,42	0,48
Q	2,54 ±0,3	2,24	2,84
R	2,54 ±0,5	2,04	3,04
S	2,54 ±0,25	2,29	2,79
T	5,08 ±0,25	4,83	5,33
U	5,08 ±0,25	4,83	5,33

Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	1B	ANSI/ESD/JEDEC JS-001-2012



Caution!
ESD-Sensitive Device

RoHS Compliance

This part is compliant with 2011/65/EU RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment) as amended by Directive 2015/863/EU.

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:

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