QPA3320

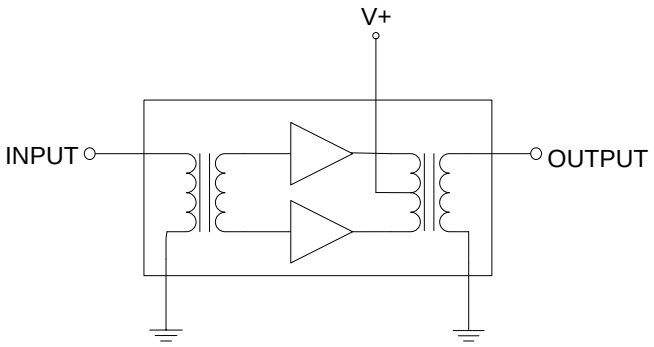
CATV Push Pull Hybrid 1003MHz 34dB

Package: SOT-115J

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



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 100 °C

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

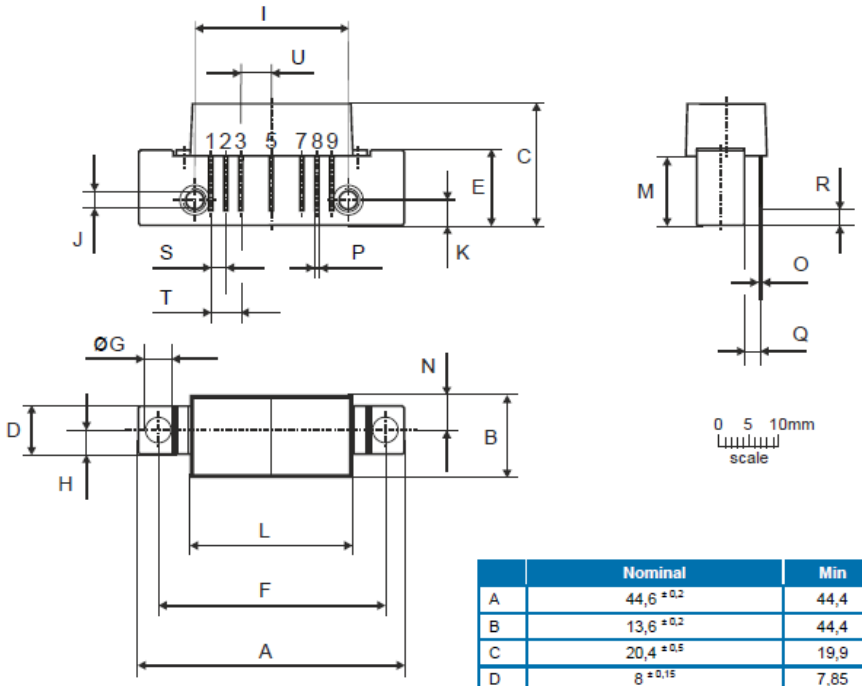
Electrical Specifications

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	Vo=44 dBmV, flat, 110 analog channels [2]		-66	-64	dBc
XMOD			-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.

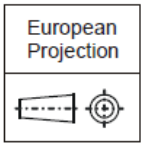
Composite Second Order (CSO) - The CSO parameter (both sum and difference products) is defined by ANSI/SCTE 6. Composite Triple Beat (CTB) The CTB parameter is defined by ANSI/SCTE 6. Cross Modulation (XMOD) - Cross modulation (XMOD) is measured at baseband (selective voltmeter method), referenced to 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:

European Projection



	Nominal	Min	Max
A	44,6 ± 0,2	44,4	44,8
B	13,6 ± 0,2	44,4	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

Pinning:

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

Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	1C	ANSI/ESD/JEDEC JS-001-2012
ESD – Charged Device Model (CDM)	C3	JEDEC JS-002

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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Email: customer.support@qorvo.com

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