



QPA3359

CATV Push Pull Hybrid 1218MHz 28dB

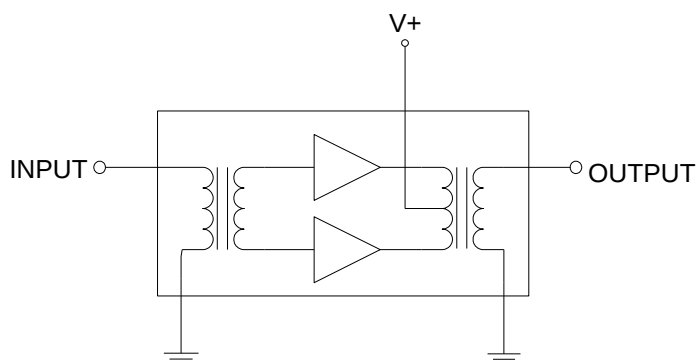
Product Description

The QPA3359 is a Push Pull amplifier module. The part employs GaAs pHEMT/MESFET die and is operated from 47 MHz to 1218 MHz. It provides excellent linearity and superior return loss performance with low noise and optimal reliability.



Package: SOT-115J

Functional Block Diagram



Product Features

- High Gain: 28dB at 1218MHz
- Excellent Linearity
- Superior Return Loss Performance
- Optimal Reliability
- Low Noise: 4.5dB
- Unconditionally Stable Under all Terminations
- 270 mA typ. at 24 VDC

Applications

- 47 – 1218 MHz CATV Amplifier Systems
- DOCSIS 3.1 Applications

Ordering Information

Part No.	Description
QPA3359	Box with 50 pcs

QPA3359 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

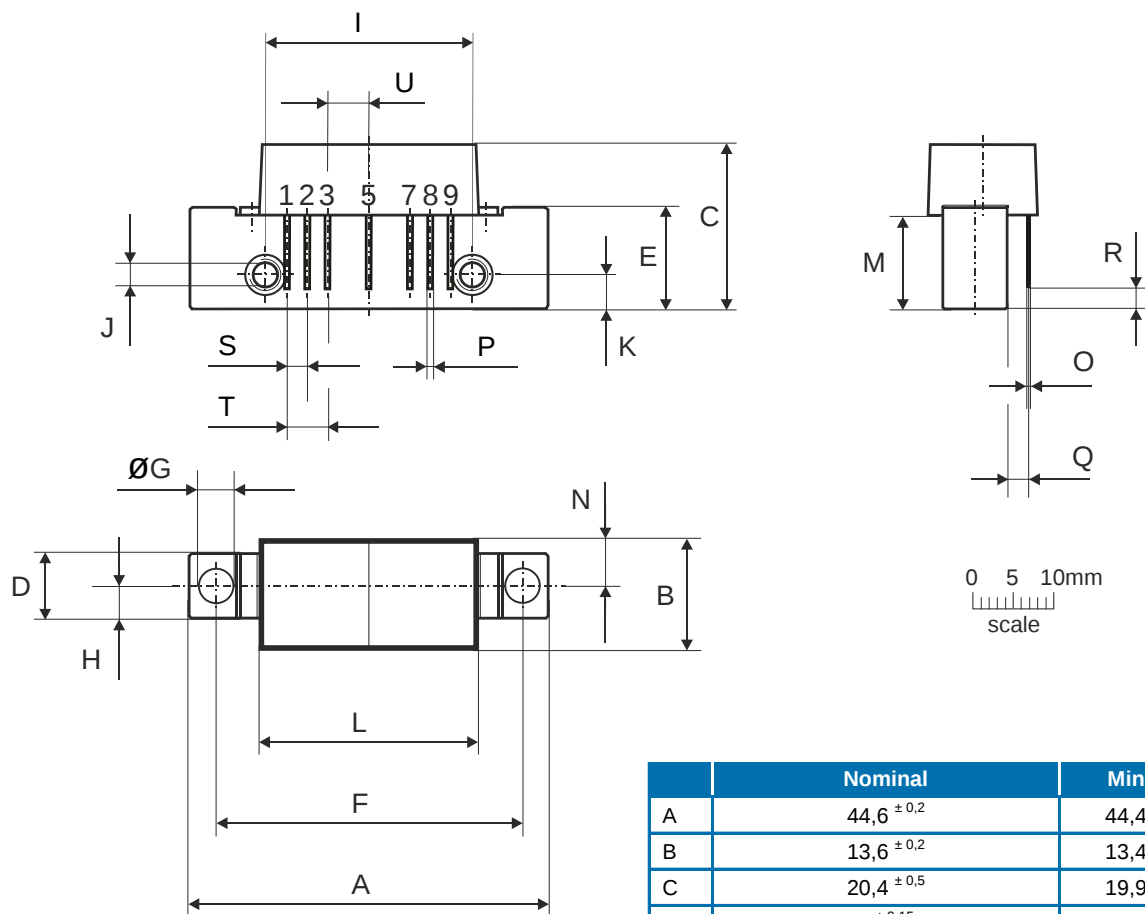
Operation of this device outside the parameter ranges given above may cause permanent damage.

Electrical Specifications

Parameter	Test Conditions: $V_+ = 24V$, $T_{MB} = 30^\circ C$, $Z_S = Z_L = 75\Omega$	Min	Typ	Max	Unit
Operational Frequency Range		47		1218	MHz
Gain	$f_o = 1218$ MHz		28.0		dB
Gain Slope	47 to 1218 MHz ^[1]		1.0		
Gain Flatness	47 to 1218 MHz		± 0.5		
Input Return Loss	$f_o = 47$ to 1003 MHz		20		dB
	$f_o = 1003$ to 1218 MHz		18		
Output Return Loss	$f_o = 47$ to 1218 MHz		18		dB
Noise Figure	$f_o = 50$ to 1218 MHz		4.5		dB
IDC			270		mA
CTB			-70		dBc
XMOD	$V_o = 44$ dBmV, flat, 79 analog channels plus 111 digital channels (-6dB offset) ^{[2][3]}		-70		dBc
CSO			-76		dBc
CCN			64		dB

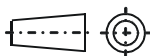
1. The slope is defined as the difference between the gain at the start frequency and the gain at the stop frequency.
2. 79 analog channels, NTSC frequency raster: 55.25MHz to 547.25MHz, +44.0dBmV flat output level, plus 111 digital channels, -6dB offset relative to the equivalent analog carrier.
3. Composite Triple Beat (CTB) - The CTB parameter is defined by ANSI/SCTE 6.
Composite Second Order (CSO) - The CSO parameter (both sum and difference products) is defined by ANSI/SCTE 6.
Cross Modulation (XMOD) - Cross modulation (XMOD) is defined by ANSI/SCTE 58, measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested.
Carrier to Composite Noise (CCN) - The CCN parameter is defined by ANSI/SCTE 17 (Test procedure for carrier to noise).

Package Drawing (Dimensions in millimeters)



Notes:

European
Projection



Pinning:

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

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

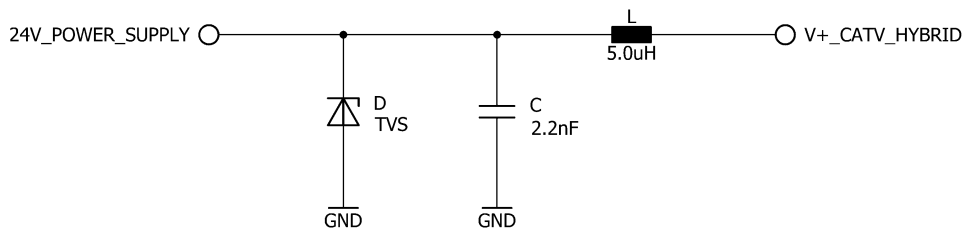
Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	2	ANSI/ESD/JEDEC JS-001-2012
ESD – Charged Device Model (CDM)	C3	JEDEC JS-002



Caution!
ESD-Sensitive Device

Application Recommendation (V+)



TVS Diode PTVS28VS1UR is recommended in V+ Line for Transient Surge Protection

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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