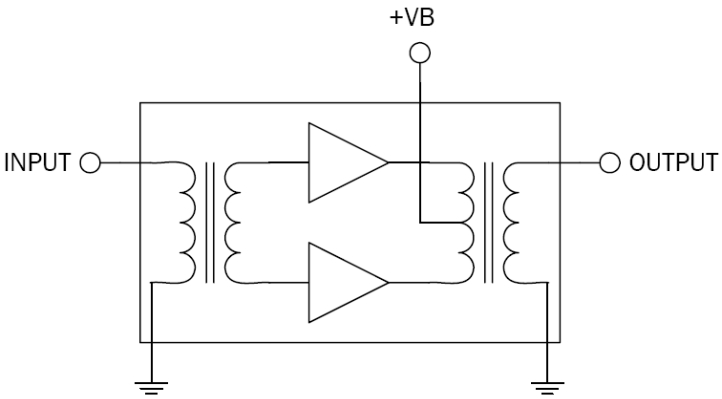
RFRP2241

5MHZ TO 100MHZ 30DB REVERSE HYBRID (LOW CURRENT, LOW NOISE)

Package: SOT-115J

The RFRP2241 is a hybrid reverse amplifier. The part employs a silicon die. It has extremely low distortion and superior return loss performance. The part also provides optimal reliability with low noise and is well suited for 5MHz to 100MHz CATV amplifiers for reverse channel systems.



Functional Block Diagram

Features

- Excellent Linearity
- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Low Noise
- Unconditionally Stable Under All Terminations
- 30.1dB Typical Gain at 100MHz
- 135mA Max. at 24VDC

Applications

- Broadband/CATV
- 5MHz to 100MHz CATV Amplifier For Reverse Channel Systems

Ordering Information

RFRP2241	Box with 50 pieces

RF Micro Devices Inc. 7628 Thorndike Road, Greensboro, NC 27409-9421
For sales or technical support, contact RFMD at +1.336.678.5570 or customerservice@rfmd.com.

DS130906

Absolute Maximum Ratings

Parameter	Rating	Unit
RF Input Voltage (single tone)	65	dBmV
DC Supply Over-Voltage (5 minutes)	30	V
Storage Temperature	-40 to +100	°C
Operating Mounting Base Temperature	-30 to +100	°C

Caution! ESD sensitive device.

RoHS (Restriction of Hazardous Substances): Compliant per EU Directive 2011/65/EU.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

Nominal Operating Parameters

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
General Performance					**VB= 24V; TMB=30°C; ZS=ZL=75Ω**
Operating Frequency Range	5		100	MHz	
Power Gain	29.5	30.0	30.5	dB	f=5MHz
	29.3	30.1		dB	f=100MHz
Slope [1]	-0.2	0.1	0.5	dB	f=5MHz to 100MHz
Flatness of Frequency Response			±0.3	dB	f=5MHz to 100MHz
Input Return Loss	-20			dB	f=5MHz to 100MHz
Output Return Loss	-20			dB	f=5MHz to 100MHz
Noise Figure		2.5	3.0	dB	f=100MHz
Total Current Consumption (DC)	125.0	130.0	135.0	mA	
Distortion data 5MHz to 100MHz					**VB= 24V; TMB=30°C; ZS=ZL=75Ω**
CTB		-66	-64	dBc	7 ch. flat; V_O=50dBmV [2]
			-61	dBc	12 ch. flat; V_O=50dBmV [3]
XMOD		-57	-55	dBc	7 ch. flat; V_O=50dBmV [2]
			-51	dBc	12 ch. flat; V_O=50dBmV [3]
CSO		-70	-68	dBc	7 ch. flat; V_O=50dBmV [2]
			-68	dBc	12 ch. flat; V_O=50dBmV [3]

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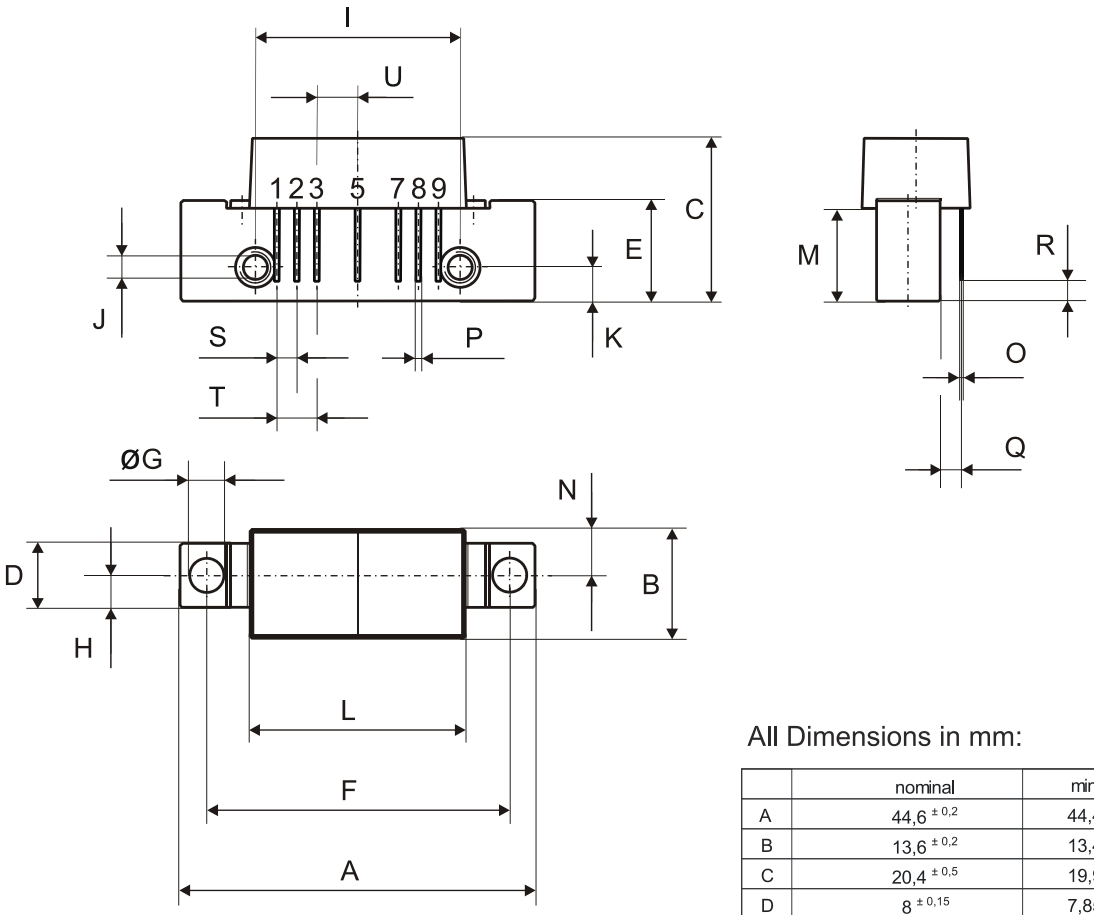
Notes:

1. The slope is defined as the difference between the gain at the start frequency and the gain at the stop frequency.
2. 7 channels, NTSC frequency raster: T7-T13 (7.0MHz to 43MHz), +50dBmV flat output level.
3. 12 channels NTSC frequency raster: T7-T13 (7.0MHz to 43MHz), 2-6 (55.25MHz to 83.25MHz), +50dBmV flat output level.

Composite Second Order (CSO) - The CSO parameter (both sum and difference products) is defined by the NCTA. Composite Triple Beat (CTB) - The CTB parameter is defined by the NCTA. Cross Modulation (XMOD) - Cross modulation (XMOD) is measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested.

Package Outline and Pin Out



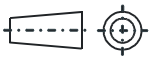
0 5 10mm
scale

Pinning:

1	2	3	4	5	6	7	8	9
INPUT	GND	GND		+VB		GND	GND	OUTPUT

Notes:

European Projection



All Dimensions in mm:

	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

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