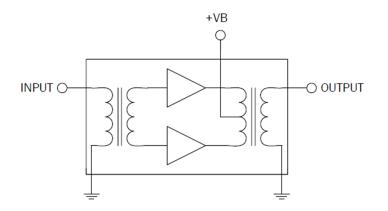


# **RFPP2590**

GaAs Push Pull Hybrid 45MHz to 1200MHz

The RFPP2590 is a Hybrid Push Pull amplifier module. The part employs GaAs die and operates from 45MHz to 1200MHz. It provides excellent linearity and superior return loss performance with low noise and optimal reliability.



## **Ordering Information**

RFPP2590

Box with 50 Pieces

### **Absolute Maximum Ratings**

Parameter	Rating	Unit
RF Input Voltage (single tone)	75	dBmV
DC Supply Over-Voltage (5 minutes)	30	V
Storage Temperature	-40 to +100	°C
Operating Mounting Base Temperature	-30 to +100	°C



#### Package: SOT-115J

#### **Features**

- Excellent Linearity
- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Low Noise
- Unconditionally Stable Under All Terminations
- 22.5dB Min. Gain at 1200MHz
- 240mA Max. at 24V<sub>DC</sub>

#### **Applications**

 45MHz to 1200MHz CATV Amplifier Systems



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.

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## **Nominal Operating Parameters**

Deremeter	Specification		Unit	Condition		
Parameter	Min	Тур	Max	Unit	Condition	
General Performance					V+ = 24V; T <sub>MB</sub> = 30°C; Z <sub>S</sub> = Z <sub>L</sub> = 75Ω	
Power Gain	21.5	22	22.5	dB	f = 45MHz	
Power Gain	22.5	23.5	24.0	dB	f = 1200MHz	
Slope <sup>[1]</sup>	1.0	1.5	2.0	dB	f = 45MHz to 1200MHz	
Flatness of Frequency Response			0.8	dB	f = 45MHz to 1200MHz	
Input Return Loss	-20			dB	f = 45MHz to 320MHz	
	-19			dB	f = 320MHz to 640MHz	
	-18			dB	f = 640MHz to 870MHz	
	-18			dB	f = 870MHz to 1000MHz	
	-17			dB	f = 1000MHz to 1200MHz	
Output Return Loss	-20			dB	f = 45MHz to 320MHz	
	-19			dB	f = 320MHz to 640MHz	
	-18			dB	f = 640MHz to 870MHz	
	-17			dB	f = 870MHz to 1000MHz	
	-16			dB	f = 1000MHz to 1200MHz	
Noise Figure		5.5	6.5	dB	f = 50MHz to 1200MHz	
Total Current Consumption (DC)		230.0	240.0	mA		
Distortion Data 40MHz to 550MHz					$V_{+} = 24V; T_{MB} = 30^{\circ}C; Z_{S} = Z_{L} = 75\Omega$	
СТВ		-64	-60	dBc		
XMOD		-60	-56	dBc	79 ch. flat, $V_0$ = 44dBmV at 550MHz, plus 75 digital channels (-6dB offset) <sup>[2]</sup>	
CSO		-70	-65	dBc		
CIN	62	66		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, +44dBmV flat output level, plus 75 digital channels, -6dB offset relative to the equivalent analog carrier.

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.

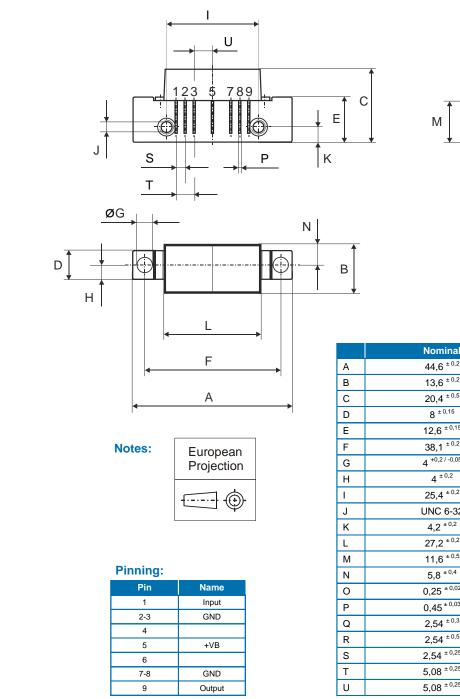
Cross Modulation (XMOD) - Cross modulation (XMOD) is measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested.

Carrier to Intermodulation Noise (CIN) - The CIN parameter is defined by ANSI/SCTE 17 (Test procedure for carrier to noise).

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## Package Drawing (Dimensions in millimeters)



0 5 10mm

	Nominal	Min	Max
А	44,6 <sup>± 0,2</sup>	44,4	44,8
В	13,6 <sup>± 0,2</sup>	13,4	13,8
С	20,4 <sup>± 0,5</sup>	19,9	20,9
D	8 <sup>± 0,15</sup>	7,85	8,15
Е	12,6 <sup>± 0,15</sup>	12,45	12,75
F	38,1 <sup>±0,2</sup>	37,9	38,3
G	4 +0,2 / -0,05	3,95	4,2
н	4 <sup>± 0,2</sup>	3,8	4,2
T	25,4 <sup>± 0,2</sup>	25,2	25,6
J	UNC 6-32	-	-
К	4,2 <sup>± 0,2</sup>	4,0	4,4
L	27,2 <sup>± 0,2</sup>	27,0	27,4
М	11,6 <sup>± 0,5</sup>	11,1	12,1
Ν	5,8 <sup>± 0,4</sup>	5,4	6,2
0	0,25 <sup>± 0,02</sup>	0,23	0,27
Р	0,45 <sup>±0,03</sup>	0,42	0,48
Q	2,54 <sup>± 0,3</sup>	2,24	2,84
R	2,54 <sup>± 0,5</sup>	2,04	3,04
S	2,54 <sup>± 0,25</sup>	2,29	2,79
Т	5,08 <sup>± 0,25</sup>	4,83	5,33
U	5,08 <sup>± 0,25</sup>	4,83	5,33

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