RFPP2590

45MHz to 1200MHz GaAs PUSH PULL HYBRID

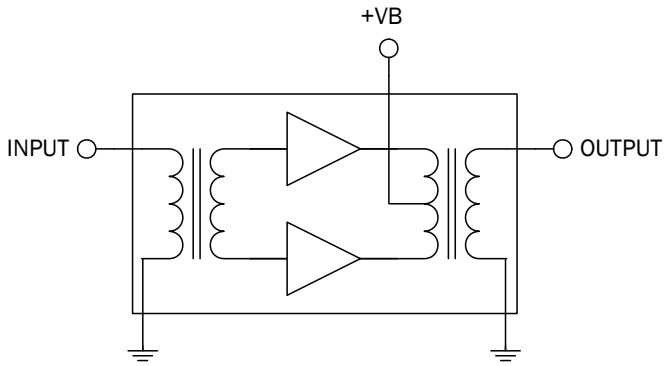
Package: SOT-115J

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_{DC}

Applications

- 45MHz to 1200MHz CATV Amplifier Systems



Functional Block Diagram

Product Description

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	45MHz to 1200MHz GaAs Push Pull Hybrid

Optimum Technology Matching® Applied

☐ GaAs HBT	☐ SiGe BiCMOS	☐ GaAs pHEMT	☐ GaN HEMT
☑ GaAs MESFET	☐ Si BiCMOS	☐ Si CMOS	☐ BiFET HBT
☐ InGaP HBT	☐ SiGe HBT	☐ Si BJT	☐ LDMOS

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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

Caution! ESD sensitive device.

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.

RoHS status based on EUDirective2002/95/EC (at time of this document revision).

Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Overall					V_B= 24V, T_{MB}=30°C, Z_S=Z_L=75Ω
Power Gain	21.5	22	22.5	dB	f=45MHz
	22.5	23.5	24.0	dB	f=1200MHz
Slope [1]	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_B= 24V, T_{MB}=30°C, Z_S=Z_L=75Ω, **79 ch. flat,** Vo=44dBmV at 550MHz, plus 75 digital channels (-6dB offset)[2]
CTB		-64	-60	dBc	
XMOD		-60	-56	dBc	
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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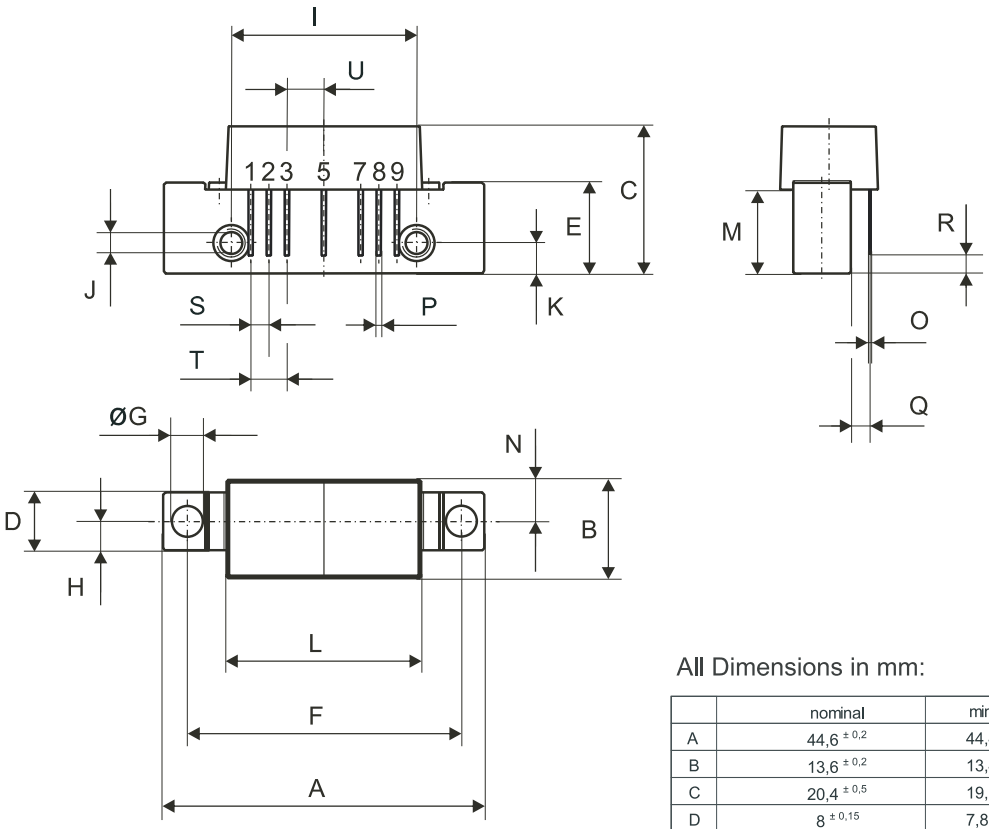
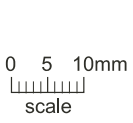
Package Drawing





Pinning:

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

Notes:

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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