

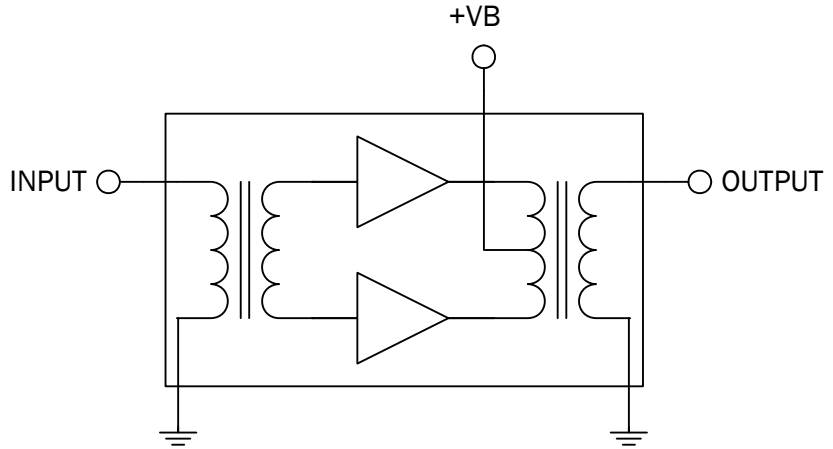


**Features**

- Excellent Linearity
- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Low Noise
- Unconditionally Stable Under all Terminations
- Extremely High Output Capability
- 24.5dB Min. Gain at 1003MHz
- 450mA Max. at 24VDC

**Applications**

- 45MHz to 1003MHz CATV Amplifier Systems



Functional Block Diagram

**Product Description**

The RFPD2710 is a Hybrid Power Doubler amplifier module. The part employs GaAs pHEMT die and GaN HEMT die, has high output capability, and is operated from 45MHz to 1003MHz. It provides excellent linearity and superior return loss performance with low noise and optimal reliability.

**Optimum Technology Matching® Applied**

- |                                      |                                      |  |  |
|--------------------------------------|--------------------------------------|--|--|
| <input type="checkbox"/> GaAs HBT    | <input type="checkbox"/> SiGe BiCMOS | <input checked="" type="checkbox"/> GaAs pHEMT | <input checked="" type="checkbox"/> GaN HEMT |
| <input type="checkbox"/> GaAs MESFET | <input type="checkbox"/> Si BiCMOS   | <input type="checkbox"/> Si CMOS               | <input type="checkbox"/> BiFET HBT           |
| <input type="checkbox"/> InGaP HBT   | <input type="checkbox"/> SiGe HBT    | <input type="checkbox"/> Si BJT                | <input type="checkbox"/> LDMOS               |

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## Absolute Maximum Ratings

Parameter	Rating	Unit
RF Input Voltage (single tone)	60	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.

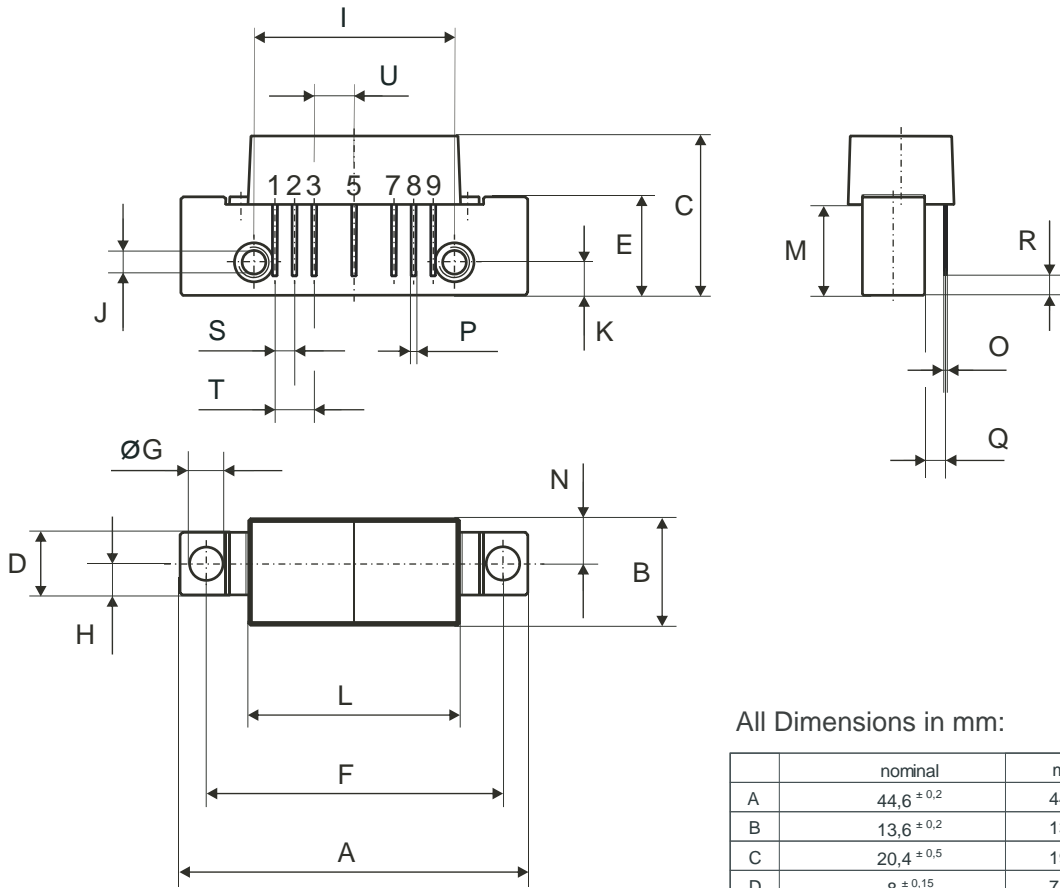
RoHS status based on EUDirective2002/95/EC (at time of this document revision).

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Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
<b>Overall</b>					VB= 24V; TMB=30 °C; ZS=ZL=75Ω
Power Gain	23.3	23.8	24.3	dB	f=45MHz
	24.5	25.0	26.0	dB	f=1003MHz
Slope <sup>[1]</sup>	0.5	1.0	2.0	dB	f=45MHz to 1003MHz
Flatness of Frequency Response			0.8	dB	f=45MHz to 1003MHz
Input Return Loss	-20			dB	f=45MHz to 320MHz
	-19			dB	f=320MHz to 640MHz
	-18			dB	f=640MHz to 870MHz
	-16			dB	f=870MHz to 1003MHz
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 1003MHz
Noise Figure		3.0	4.0	dB	f=50MHz to 1003MHz
Total Current Consumption (DC)		420.0	450.0	mA	
<b>Distortion data 40MHz to 550MHz</b>					VB= 24V; TMB=30 °C; ZS=ZL=75Ω
CTB		-77	-74	dBc	V <sub>O</sub> =56.4dBmV at 1000MHz, 13.4dB extrapolated tilt, 79 analog channels plus 75 digital channels (-6dB offset) <sup>[2]</sup>
XMOD		-71	-68	dBc	V <sub>O</sub> =56.4dBmV at 1000MHz, 13.4dB extrapolated tilt, 79 analog channels plus 75 digital channels (-6dB offset) <sup>[2]</sup>
CSO		-71	-68	dBc	V <sub>O</sub> =56.4dBmV at 1000MHz, 13.4dB extrapolated tilt, 79 analog channels plus 75 digital channels (-6dB offset) <sup>[2]</sup>
CIN	63	66		dB	V <sub>O</sub> =56.4dBmV at 1000MHz, 13.4dB extrapolated tilt, 79 analog channels plus 75 digital channels (-6dB offset) <sup>[2]</sup>

[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, +43dBmV to +50dBmV tilted 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).

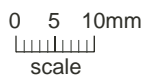


All Dimensions in mm:

	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

Pinning:

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



Notes:

