RFMD

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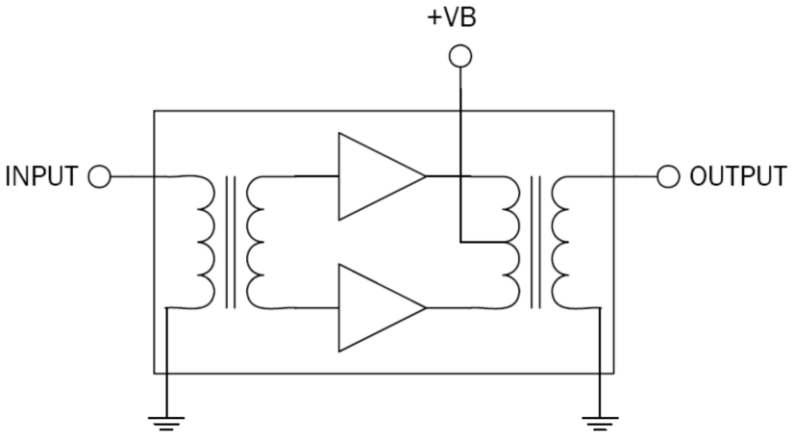
RFPP9850

1GHZ, 28DB GAIN GAAS/GAN PUSH PULL HYBRID

Package: SOT-115J

RoHS



Features

- Excellent Linearity
- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Suitable for PAL D and Flat NTSC Loading
- Unconditionally Stable Under all Terminations
- High Output Capability
- 250mA typ. at 24VDC

Applications

- 40MHz to 1003MHz CATV Amplifier System

Product Description

The RFPD9850 is a Hybrid Push Pull amplifier module. The part employs GaAs MESFET die, GaAs pHEMT die and, GaN HEMT die. RFPP9850 is designed to operate from 40MHz to 1003MHz. It provides excellent linearity and superior return loss performance with low noise. The product is packaged in SOT-115J and uses the latest GaN technology for the output stage.

Optimum Technology Matching® Applied

☐ GaAs HBT	☐ SiGe BiCMOS	☒ GaAs pHEMT	☒ GaN HEMT
☒ GaAs MESFET	☐ Si BiCMOS	☐ Si CMOS	☐ RF MEMS
☐ InGaP HBT	☐ SiGe HBT	☐ Si BJT	☐ LDMOS

Absolute Maximum Ratings

Parameter	Rating	Unit
RF Input Voltage (single tone; on evaluation board)	70	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.

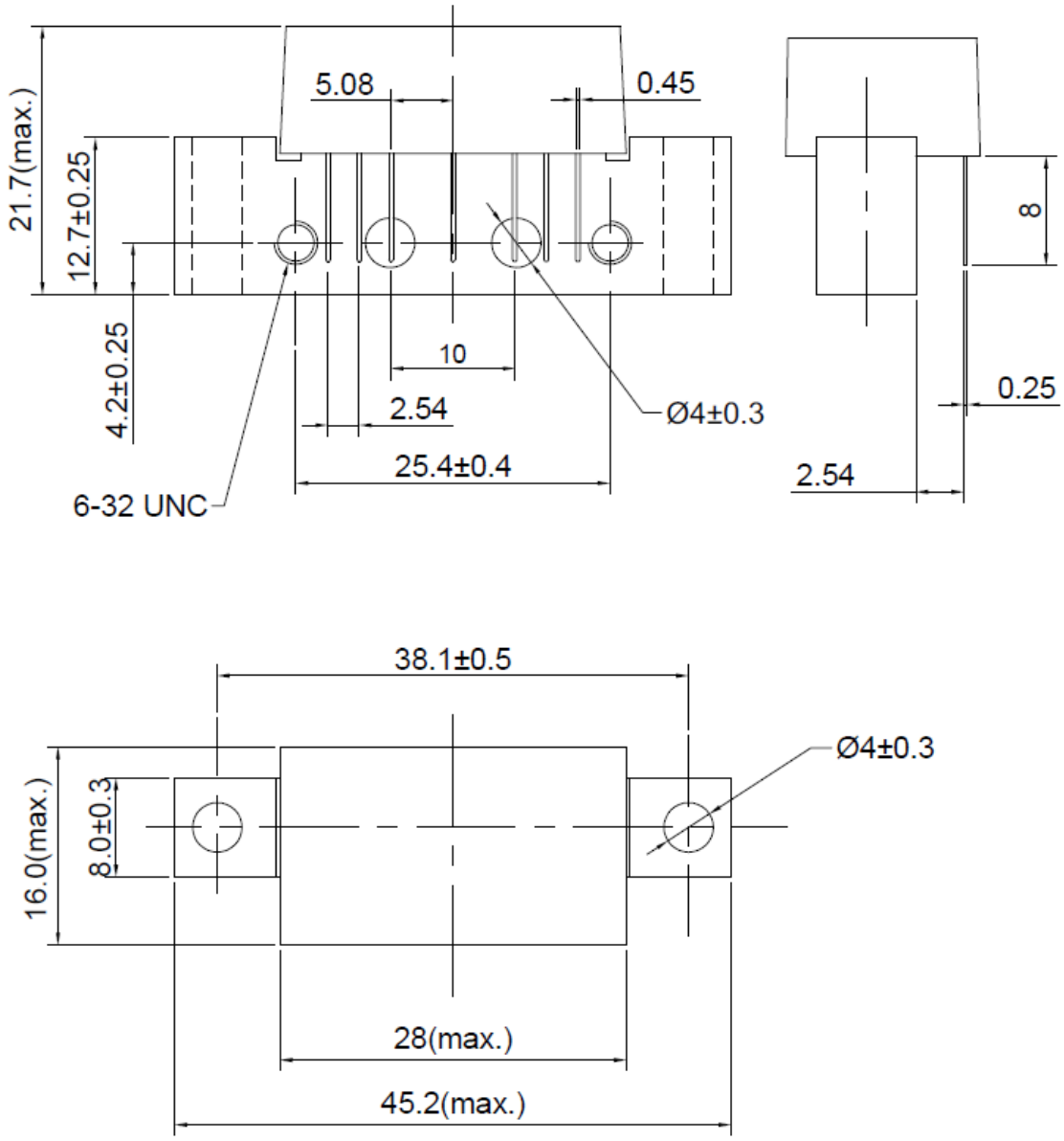
Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute 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+= 24V; TMB=30°C; ZS=ZL=75Ω
Power Gain		27.0		dB	f=50MHz
		28.0			f=870MHz
	27.5	28.5	29.0	dB	f=1003MHz
Slope[1]	0.5	1.0	2.0	dB	f=40MHz to 1003MHz
Flatness of Frequency Response			0.8	dB	f=40MHz to 1003MHz
Input Return Loss	-20			dB	f=40MHz to 320MHz
	-18			dB	f=320MHz to 640MHz
	-17			dB	f=640MHz to 870MHz
	-16			dB	f=870MHz to 1003MHz
Output Return Loss	-20			dB	f=40MHz to 320MHz
	-19			dB	f=320MHz to 640MHz
	-17			dB	f=640MHz to 870MHz
	-16			dB	f=870MHz to 1003MHz
Noise Figure		4.5	5.0	dB	f=50MHz to 1003MHz
Total Current Consumption (DC)		250.0	270.0	mA	
Distortion					V+= 24V; TMB=30°C; ZS=ZL=75Ω, PAL D Raster
CTB[4]		68	63	dBc	V_O=44 dBmV at 862MHz, flat, 98 analog channels[2]
XMOD[5]		67		dBc	V_O=44 dBmV at 862MHz, flat, 98 analog channels[2]
CSO[6]		66	61	dBc	V_O=44 dBmV at 862MHz, flat, 98 analog channels[2]
Distortion					V+= 24V; TMB=30°C; ZS=ZL=75Ω, NTSC Raster
CTB[4]		-68		dBc	V_O=46dBmV, 79 analog channels plus 75 digital channels (-6dB offset)[3]
XMOD[5]		-64		dBc	V_O=46dBmV, 79 analog channels plus 75 digital channels (-6dB offset)[3]
CSO[6]		-75		dBc	V_O=46dBmV, 79 analog channels plus 75 digital channels (-6dB offset)[3]
CIN[7]		65		dB	V_O=46dBmV, 79 analog channels plus 75 digital channels (-6dB offset)[3]

1. The slope is defined as the difference between the gain at the start frequency and the gain at the stop frequency.
2. 98 analog channels, PAL D raster: 47.25MHz to 862.25MHz, 44 dBmV flat output level
3. 79 analog channels, NTSC frequency raster: 55.25MHz to 547.25MHz, +46dBmV flat output level, plus 75 digital channels, -6dB offset relative to the equivalent analog carrier.
4. Composite Triple Beat (CTB) - The CTB parameter is defined by the NCTA.
5. Cross Modulation (XMOD) - Cross modulation (XMOD) is measured at baseband (selective voltmeter method), referenced to 100% modulation of the carrier being tested.
6. Composite Second Order (CSO) - The CSO parameter (both sum and difference products) is defined by the NCTA.
7. Carrier to Intermodulation Noise (CIN) - The CIN parameter is defined by ANSI/SCTE 17 (Test procedure for carrier to noise).

Package Drawing



Unit: mm

Pinning:

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