TDE800UHF

Power Amplifier Section 800W UHF

RoHS Compliant

Charateristics

- 470 – 860 MHz
- Pout: 200 W DVB-T Signal
- Pout: 500 W ps. Analog Tv
- Gain: 19dB
- 50 Ohm in/out Impedance
- Classe AB Operation
- Device: 2 x NXP BLF888A
- Supply: 50 Vdc nominal
- High temperature protection
- Dimension: (LxWxH)
  115x85x23mm
  4.52”x3.34”x0.90”
- Weight: 0.130Kg / 0.29lb

Applications

- Broadcast transmitter
- Industrial application
- Research & Development
- scientific equipmets
- Test and validation

Benefits

- This amplifier is suitable for use with or without carrier. Carrier removal mean a lower devices temperature, since one thermal junction is avoided.
- Excellent ruggedness
- High power density
- High power gain
- High efficiency
- Low performance spreading, unit to unit

TDE800UHF is an high linear amplifier, designed to work in the entire band 470-860Mhz, with relevant power level in most common transmission standard.
TDE800UHF incorporates a fully printed network with Microstrip and Stripline technology that match the latest generation of LDMOS power devices, making this amplifier the technology state of art.

Eletrical Specification

Parameter	Min.	Typ.	Max.	Units.	Note
Frequency Range	470		862	MHz	
Power gain	17	19		dB	
Analog tv power Imd < -50 dBc (G std red field common amp)	450	500		Wps	Without precorrection
DVB-T/ DVB-H power Shoulder <-30 dBc	180	200		Wrms	Without precorrection
ATSC DTV Shoulder < -40dBc from carrier	200	250		Wrms	Without precorrection
Supply Voltage		50		V	
Efficiency 200W DVB-T	21	26		%	
Efficiency 300W CW	40	48		%	
Efficiency 500W Analog	45	55		%	
Power Out pep	600	800		W	Note 5
Quiescent Current		2.8	3.2	Amps	Note 3
Current Consumption Analog Tv (blak field)			25	Amps	Pout 500W p.s

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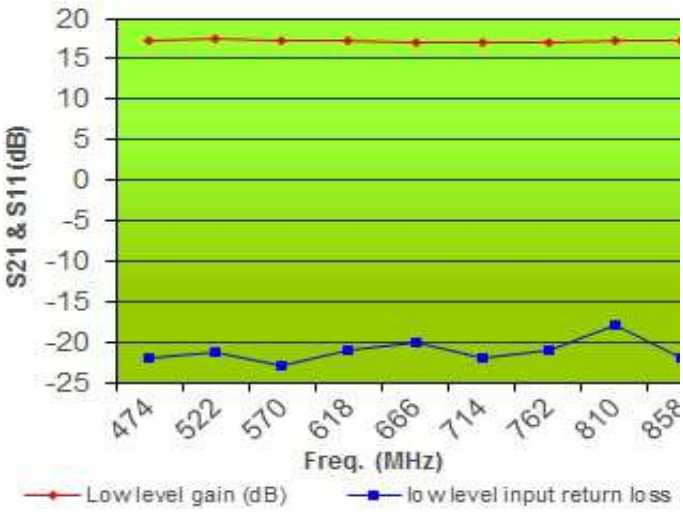
Gain Low Level

- Test Condition — Vcc 50V Idq= 1.4 + 1.4A
- Amplitude vs Frequency
- Return Loss



DVB-T Power

- Test Condition — Vcc 50V Idq= 1.4 +1.4A
- Sholuder @ Pout 180W DVB-T — +/- 4.2 MHz
- MER @ Pout 180W DVB-T

CH.	Freq. (MHz)	Shoulder (dBc)	MER	Idst (A)	Eff. (%)
21	474	-33	30	12.7	28.3
27	522	-34	31	14	25.7
33	570	-35	31	14.5	24.8
39	618	-33.5	30.8	15.6	23
45	666	-34.5	31.1	16	22.5
51	714	-35.5	31.2	16.2	22.2
57	762	-35	32.4	16	22.5
63	810	-35	32.2	14.9	24.2
69	858	-31.5	30	13.7	26.2

ANALOG Power

- Test Condition — Vcc 50V Idq= 1.4 + 1.4A
- IMD @ Pout 500W ps. Red Field Without Precorrection

CH.	Freq. (MHz)	IMD	Idst (A)	Eff. (%)	
21	474	-54	18	55.5	
27	522	-54	19.3	51.8	
33	570	-54	19.2	52	
39	618	-56	19	52.6	
45	666	-56	19.2	52	
51	714	-56	19.5	51.3	
57	762	-57	19.3	51.8	
63	810	-54	18.5	54	
69	858	-52	18.5	54	

CW Power

- Test Condition — Vcc 50V Idq= 1.4 + 1.4A

Freq. (MHz)	Pout@1dBc (W)	Idst@1dBc (A)	Eff. (%)		NOTE
474					
666					
858					

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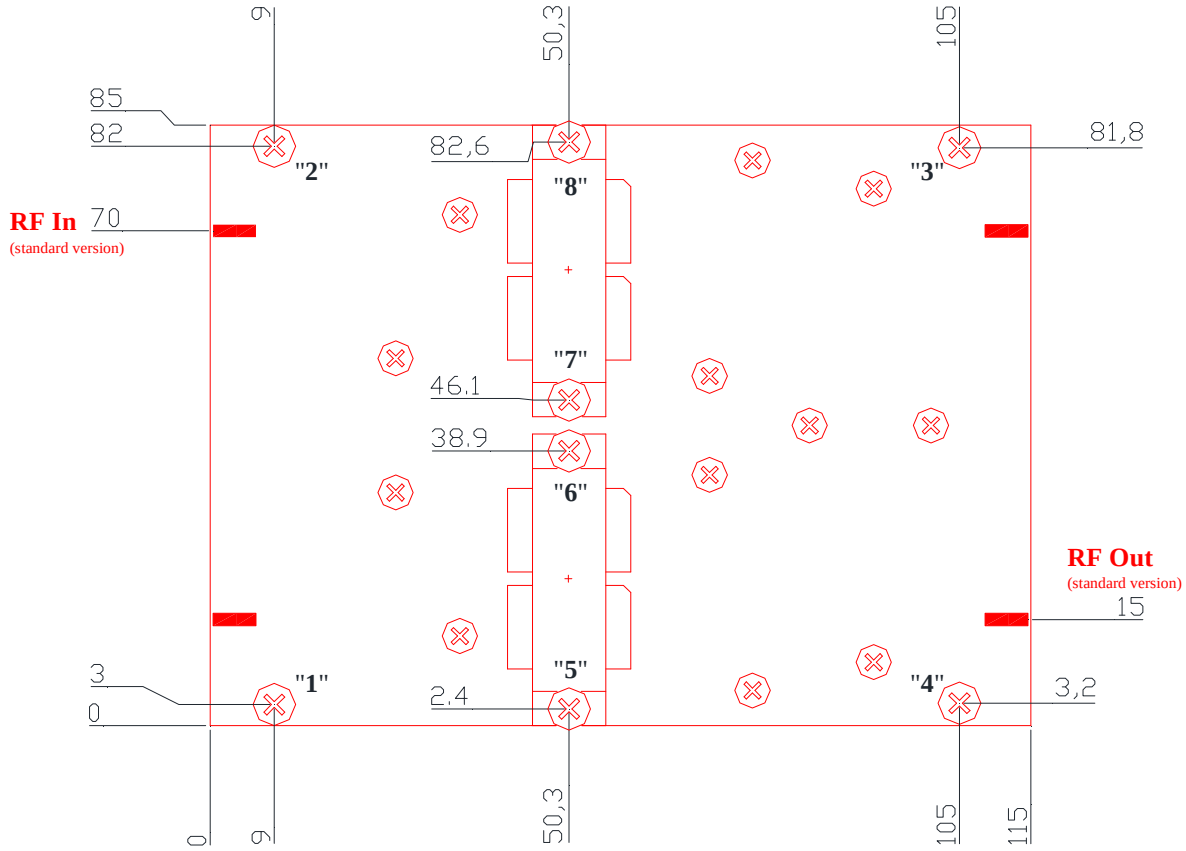
Mechanical Specifications



Application without carrier need an heatsink milling,TDE can provide a DXF File contact: tde@tdeitaly.com

Screws Type

Screws point 1-2-3-4-5-6-7-8 M3 Socket head cap screws + 8 split lock washers WZ ø 3.5 + 8 flat washers WZ ø 3.5

Recommendend Torque

The recommended Torque is: 0.9 N/m for Devices Fixing (4 places) and 1 N/m for other screws.

Thermal Compound

Recommended Dow Corning 340 (thermal compound) or equivalent

Ordering Information

Product Name (standard version without a carrier copper)	TDE800UHF
Product Name (invert RF Out without a carrier copper	TDE800UHFSX
Product Name (standard version with carrier copper)	TDE800UHF/CC
Product Name (invert RF Out with carrier copper)	TDE800UHFCC/SX

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Application Note

Read carefully Application note before use. For any additional information or suggestion please contact TDE technical staff.

Note 1 cooling system requirements
Cooling system must assure that amplifier will work in safety conditions. This amplifier is self protected against high temperature, however we raccomand to use the amplifier at lower temperature as possible, this because lower temperature means a better MTBF.
Please be sure that heatsink surface is cleaned and very smoothed, be also sure to use a good quality thermal compound between flange and heatsink.
TDE can provide a draw of heatsynk milling to use the amplifier without carrier.

Note 2 (load matching)
This amplifier use the rugged RF device on the market, it can work without power reduction on a load with 3:1 of VSWR.
Anyway we recommend to foresee an appropriate protection system able to switch off the power in case of excessive power reflection.

Note 3 (quiescent current)
Quiescent current is set in factory at about 2.8 amps (1.4A for device), a little adjustment of current can improve performances on a particular standard or frequency. Factory value is a compromise between analog and digital applications.

Note 4 (shielding)
Due to the High gain of this pallet, is required a good isolation between output power and any driver stage.
Please foresee a good shielding and RF coche on the feeder cable.

Note 5 (CW applications)
This amplifier is designed to work with amplitude modulation signal, where the max power is achieved for short time. In case of CW application don't exceed 300W of continuous work.
On request TDE can provide a special version to improve the power on your application.

Important Note

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