

# TDE050BI

## Power Amplifier Section 100Wpep BI

### Charateristics

- 54-88 MHz
- Pout: 20 W DVB-T Signal
- Pout: 40 W ATSC Signal
- Pout: 60 W ps. Analog Tv
- Gain: 28dB
- 50 Ohm in/out Impedance
- Classe AB Operation
- Device: 2 x MRF6VP150
- Supply: 50 Vdc nominal
- High temperature protection
- Dimension: (LxWxH)  
100x108x35mm  
3,9"x4.2"x1.37"
- Weight: 0.130Kg / 0.29lb

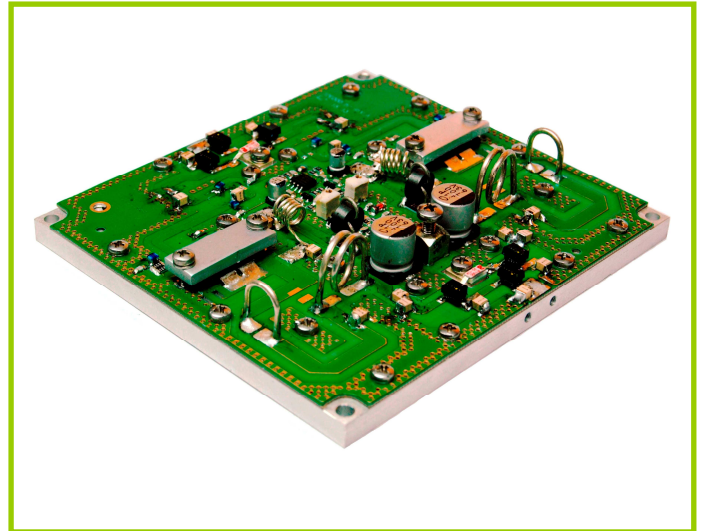
### Applications

- Broadcast transmitter
- Industrial application
- Research & Development
- Test and validation
- Scientific equipments

### Benefits

- Excellent ruggedness
- High power density
- High power gain
- High efficiency
- Low performance spreading unit to unit

**RoHS  
Compliant**



TDE0050BI is an high linear amplifier, designed to work in the entire band 54-88 Mhz, with relevant power level in most common transmission standard.

TDE0050BI using the new technology devices can assure very high tolerance Vs output mismatch.

### Eletrical Specification

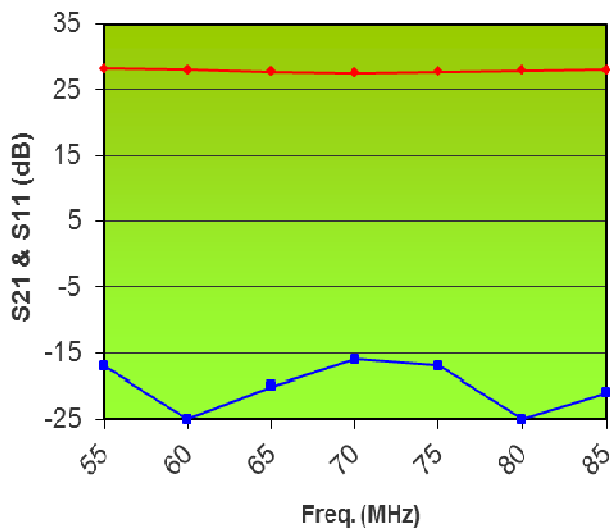
Parameter	Min.	Typ.	Max.	Units.	Note
Frequency Range	54		88	MHz	
Power gain	26	28		dB	
Analog tv power lmd < -50 dBc (G std red field common amp)	50	60		Wps	Without precorrection
DVB-T power Shoulder <-30 dBc	20	25		Wrms	Without precorrection
ATSC Shoulder < 40dBc	30	40		Wrms	Without precorrection
Supply Voltage		48	50	V	
Efficiency 300W DVB-T	15	20		%	
Efficiency 450W ATSC	25	30		%	
Efficiency 600W Analog	40	45		%	
Power Out 1dBc	100	150		W	Note 5
Quiescent Current		1	1.6	Amps	Note 3
Current Consumption DVB-T Signal			2,5	Amps	Pout 20W

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### Gain Low Level

- Test Condition Vcc 50V Idq= 1.5 + 1.5A
- Amplitude vs Frequency
- Return Loss



—●— Low level gain (dB)    —■— Input return loss (dB)

### DVB-T Power

- Test Condition Vcc 50V Idq= 1.5 + 1.5A
- Sholuder @ Pout 20W DVB-T +/- 4.2 MHz
- MER @ Pout 20W DVB-T

Freq. (MHz)	Shoulder (dBc)	MER	Idst (A)	Eff. (%)
55	-35	34	2,5	16
60	-35	34	2,4	16,5
65	-36	35	1,9	21
70	-36	36	2,1	20
75	-38	37	2,1	19
80	-38	38	2	20
85	-38	38	2	20

### ANALOG Power

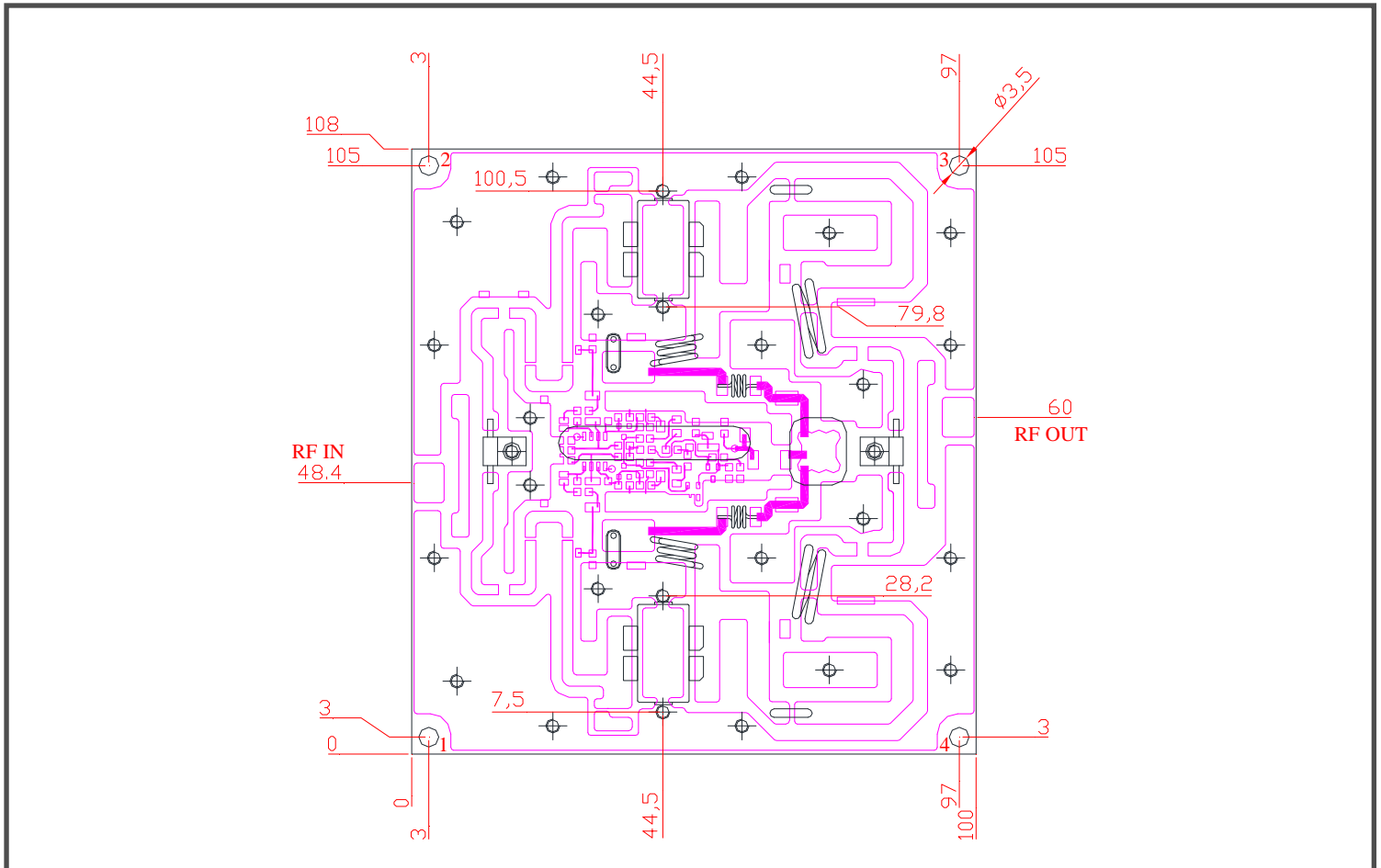
- Test Condition Vcc 50V Idq= 1.5 + 1.5A
- IMD @ Pout 50W ps. Red Field Without Precorrection

Freq. (MHz)	IMD	Idst (A)	Eff. (%)
55	-56	2,3	48
60	-57	2,2	48
65	-58	1,8	51
70	-60	1,9	51
75	-59	1,9	51
80	-60	2	50
85	-58	2	50

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### Mechanical Specifications



### Screws Type

Screws point 1-2-3-4 4 screw M3 + 4 split lock washers WZ  $\varnothing 3.5$  + 4 flat washers WZ  $\varnothing 3.5$

### Recommendend Torque

The recommended Torque is: 0,8 N/m for Devices On carrier fixing.

### Thermal Compound

Recommended Dow Corning 340 ( thermal compound ) or equivalent

### Ordering Information

Product Name (standard version with a carrier)

TDE0050BI

# *TDE050BI*

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## Application Note

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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 recommend 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 heatsink 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 1 amps (0,5A 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 50W of continuous work.

On request TDE can provide a special version to improve the power on your application.

## Important Note

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