VHFAMP500-R

480W pep –27dBc min Tetrafet Technology Amplifier

Designed for analog and digital TV transposers and transmitters, this amplifier incorporates microstrip technology and push-pull TETRAFET to enhance ruggedness and reliability.

- **170 - 230 MHz**
- **(28÷32 Volt) 30 Nominal**
- **Input/Output 50 Ohm/50 Ohm**
- **P_{out} : 480W pep –27 dBc min (two-tone test 6MHz spacing)**
- **Pout 250W CW**
- **Gain : 13.5 dB min; 14.5 dB typ**
- **Class AB**
- **Devices: D1030UK or equivalent**
- **Connectorized version available**

Dimensions (LxWxH) 160x5.5x85mm

This picture is a mere example; it does not bind the provided product

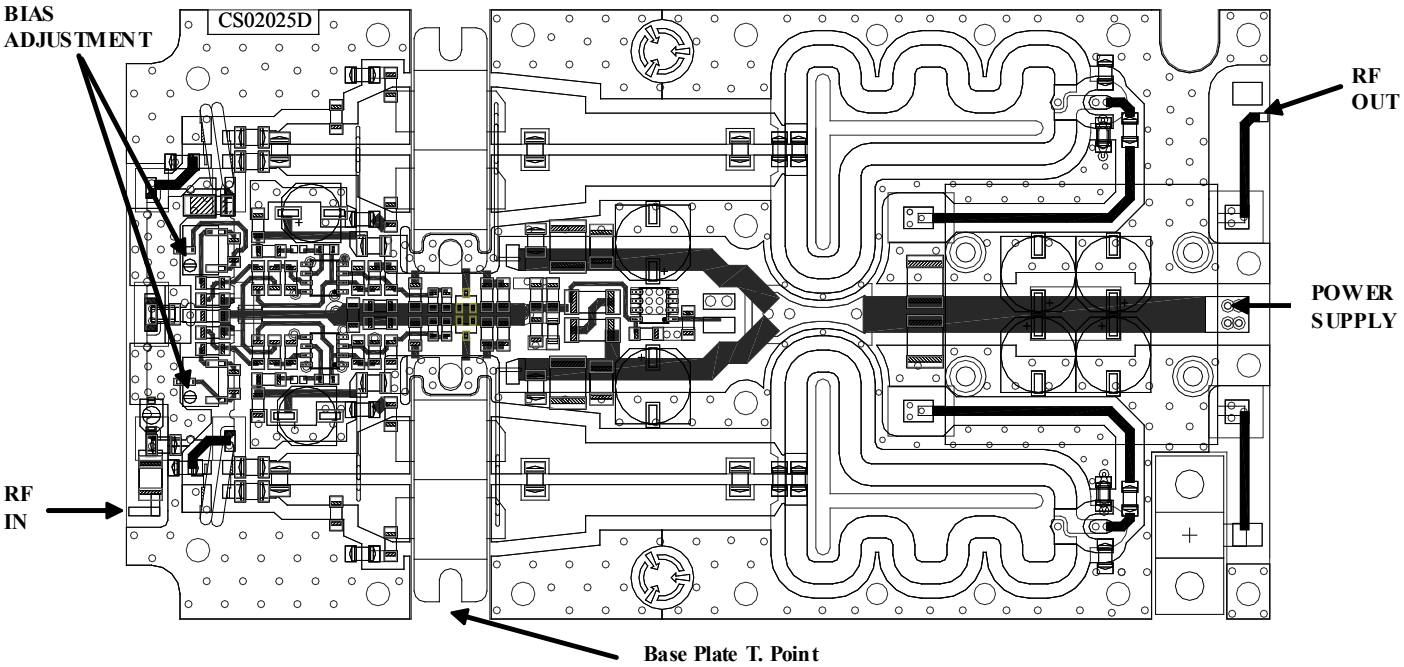
ABSOLUTE MAXIMUM RATINGS (Device Flange T = 70 °C)

Symbol	Parameter	Value	Unit
V_S	**Voltage Supply**	35	**V dc**
I_S	**Current Supply**	25	**A dc**
Tstg	**Storage Temperature Range**	-20 + 80	**°C**
Tc	**Operating Base Plate Temperature**[1]	0 + 75[2]	**°C**
ψ	**VSWR max**	3:1 all phase angle	**-**
	Max input power	See note[3]	**-**
	Max cw output power (continuous work)	250	**Wattt**

ELECTRICAL SPECIFICATIONS (Base Plate T. = 45 °C, 50 Ohm loaded, Vd = 30 V)

Symbol	Parameter	Test Conditions	Value Min	Typ.	Max	Unit
BW	**Bandwidth**	P_{out} = 250 W (CW)	170		230	**MHz**
Gp	**Power gain**	P_{ref} = 250 W (CW)	13.5	14.5	-	**dB**
P_{out} – 1dB	**Power Output @ 1dB Compression**	Referred to P_{out} = 60W (CW)	450	500	-	**W**
I_q *	**Quiescent Current**	P_{out} = 0 W – Total *[4]	-	-	6.0	**A**
I_{tot}	**@ P_{Max}**	350W Ps Black Level Audio + Video	-	-	22	**A**
Irl	**Input return loss**	P_{out} = 250 W CW	16	20	-	**dB**
	Load mismatch	Pref = 250 W CW, f= 230MHz, load VSWR = 2:1, all phase angles		No degradation in Pout		
Gr	**Gain Flatness**	Pref = 250 W CW, BW: 170-230MHz		±0.5	±1	**dB**
η	**Drain Efficiency**	P_{out} = 300 W[5] (CW)	40	45	-	**%**
	Pout separate ampl.	Sync. Compression < 1dB without correction	400	450		**Wps**
	Pout common ampl.	Red field IMD < -45 dBc without correction	360	380		**Wps**
	Pout DVB-T	Shoulder < -27 dB	80	100		**Wrms**
	Pout DAB	Pout 170Wrms without precorrection	-27	-30		

[1] A temperature sensor is mounted on the circuit to have an immediate working temperature measurement. The temperature can be measured by a Voltmeter on the pin 1 (see picture on pag. 3), 1mV = 1 °C. **Warning**: the measured temperature refers to the Printed Circuit Board and not to the device flanges.
[2] **Warning**: The base plate temperature must be 75 °C max, using an appropriate Heatsink.
[3] The input power must not exceed +6dB, for 1 microsec. , the nominal input power referred to the 1dBcp power output.
[4] The Quiescent Current is set at typical value, in factory. This parameter can be adjusted by the final user depending on the applied signal and/or frequency and output power. (**Warning:** Do not exceed the specified max Iq value).
* Depending of handling signal (analog /digital)
[5] Do not keep the amplifier working at this Pout for more than one minute

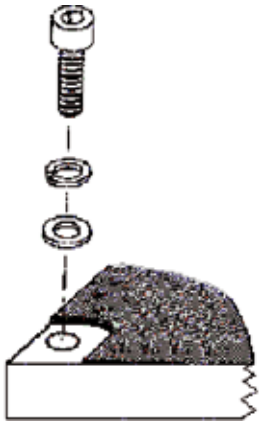


HEATSINK MOUNTING/HARDWARE

1. HEATSINK TOOLING
-Planarity: typical value 0.8
-Roughness: better than 0.03 mm

2. THERMAL COMPOUND
-Paste with silicones
-Thickness: optimum between 0.06 mm and 0.15 mm, on the whole back surface of the amplifier.

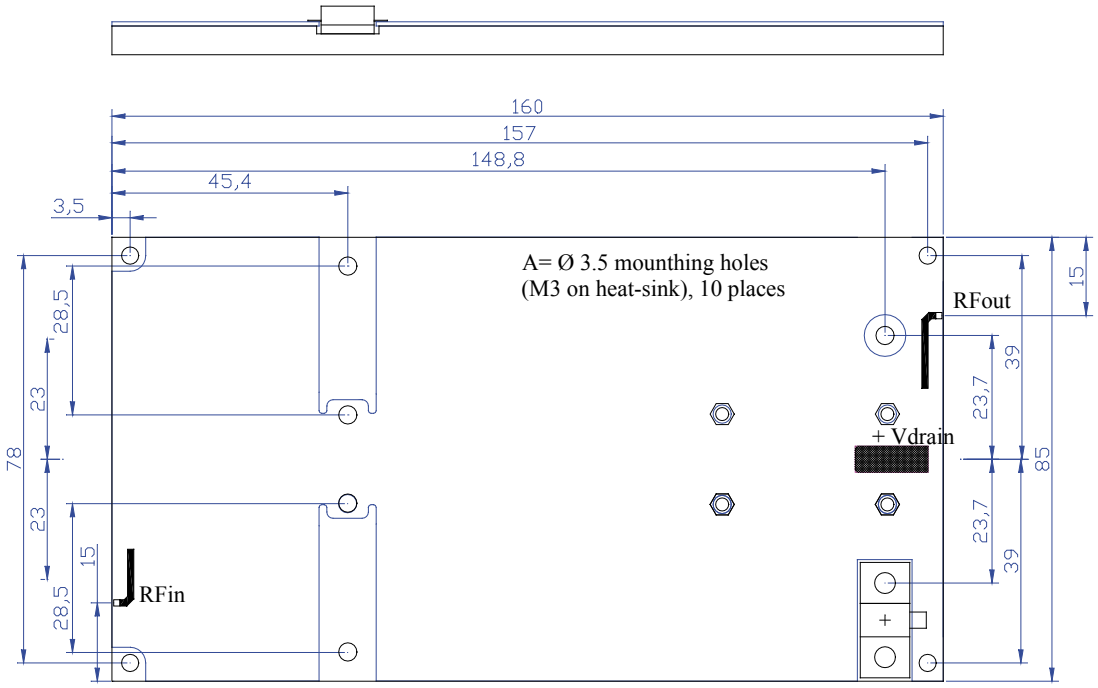
3. SCREWS
-8 x M3 - Socket head cap screws.
-8 Split lock washers WZ ∅3 + 8 Flat washers ZU ∅3.
- The recommended Torque is 12 Kg/cm for M3 type screws and 10 Kg/cm for M2.5 type screws.



4. TIGHTENING ORDER
-See next figure:

[6] ONAIR provides the pallet without unbalance load resistors (input 50 Ohm 20W/output 50 Ohm 100W. Dimensions: 13 x 6.3mm, about, 1 hole).

VHFAMP500-R


160
157
148,8
45,4
3,5
A= Ø 3.5 mounthing holes
(M3 on heat-sink), 10 places
RFout
+ Vdrain
RFin
78
28,5
23
23
28,5
15
15
39
23,7
85
23,7
39

VHFAMP500-R

IMPORTANT NOTICE

ONAIR RESERVE THE RIGHT TO MAKE CHANGES TO THE PRODUCT(S) OR INFORMATION CONTAINED HEREIN WITHOUT NOTICE. ONAIR ASSUMES NO RESPONSIBILITY FOR ANY ERRORS WHICH MAY APPEAR IN THIS DOCUMENT.

WARRANTY INFORMATION APPLICABLE TO THE PRODUCT IDENTIFIED HEREIN IS AVAILABLE UPON REQUEST. NOTHING CONTAINED HEREIN SHALL CONSTITUTE A WARRANTY, REPRESENTATION OR GUARANTEE OF ANY KIND. ONAIR EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND/OR IMPLIED INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY, AND OF FITNESS FOR A PARTICULAR PURPOSE, USE OR APPLICATION.

WARNING

ONAIR PRODUCTS ARE NOT INTENDED FOR USE IN LIFE SUPPORT APPLIANCES, DEVICES OR SYSTEMS. USE OF ONAIR PRODUCT IN ANY SUCH APPLICATION WITHOUT WRITTEN CONSENT IS PROHIBITED.