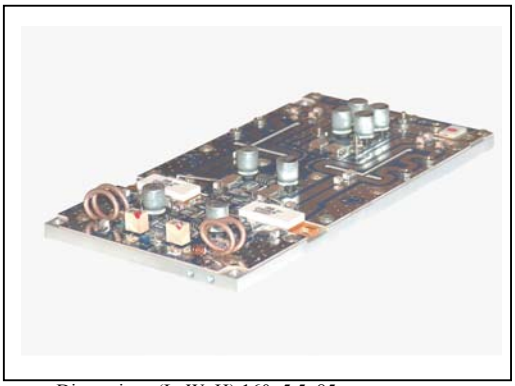
THV450C

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 50Ω - 50Ω**
- **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	**Watt**

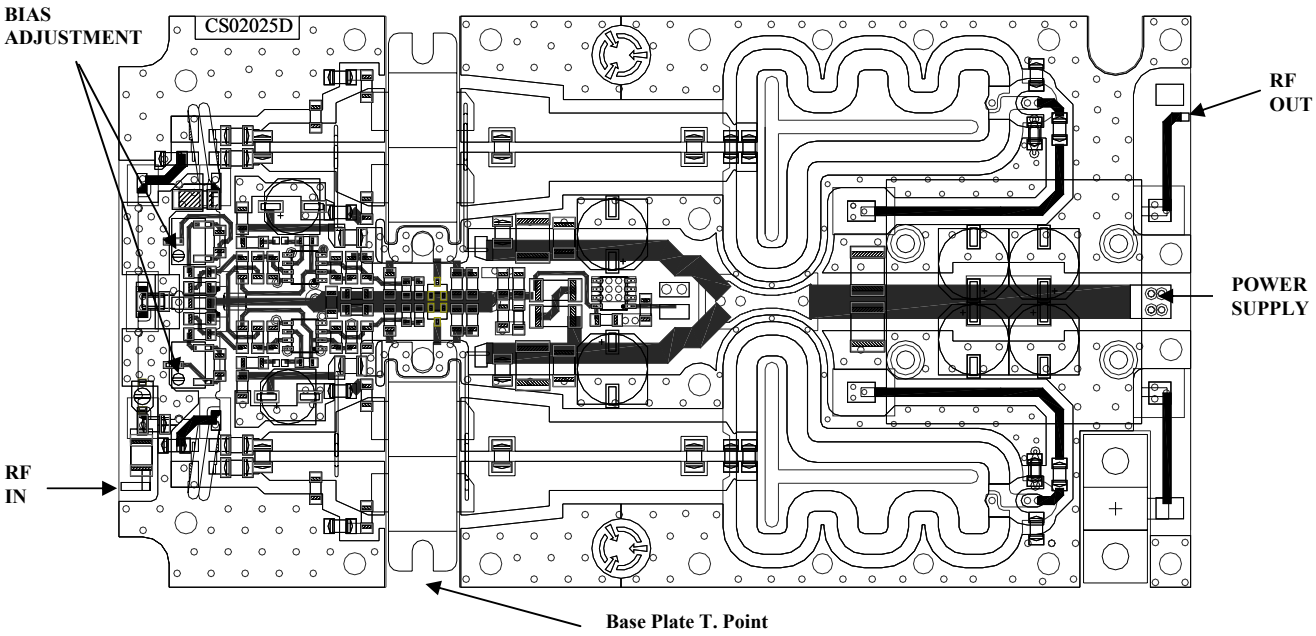
ELECTRICAL SPECIFICATIONS (Base Plate T. = 45 °C, 50Ω loaded, Vd = 30 V)

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**
Ψ	**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 (See Application note ING01). (**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

Conctat Res-Ingenium, +39 0763 316333 Fax +39 0763316002- or visit www.res-ingenium.com for a complete listing.

THV450C Layout and Connections[6]



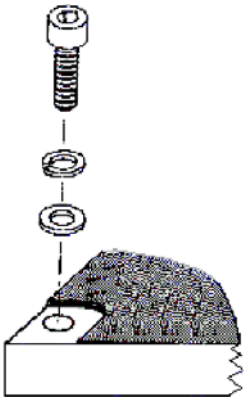
HEATSINK MOUNTING/HARDWARE

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

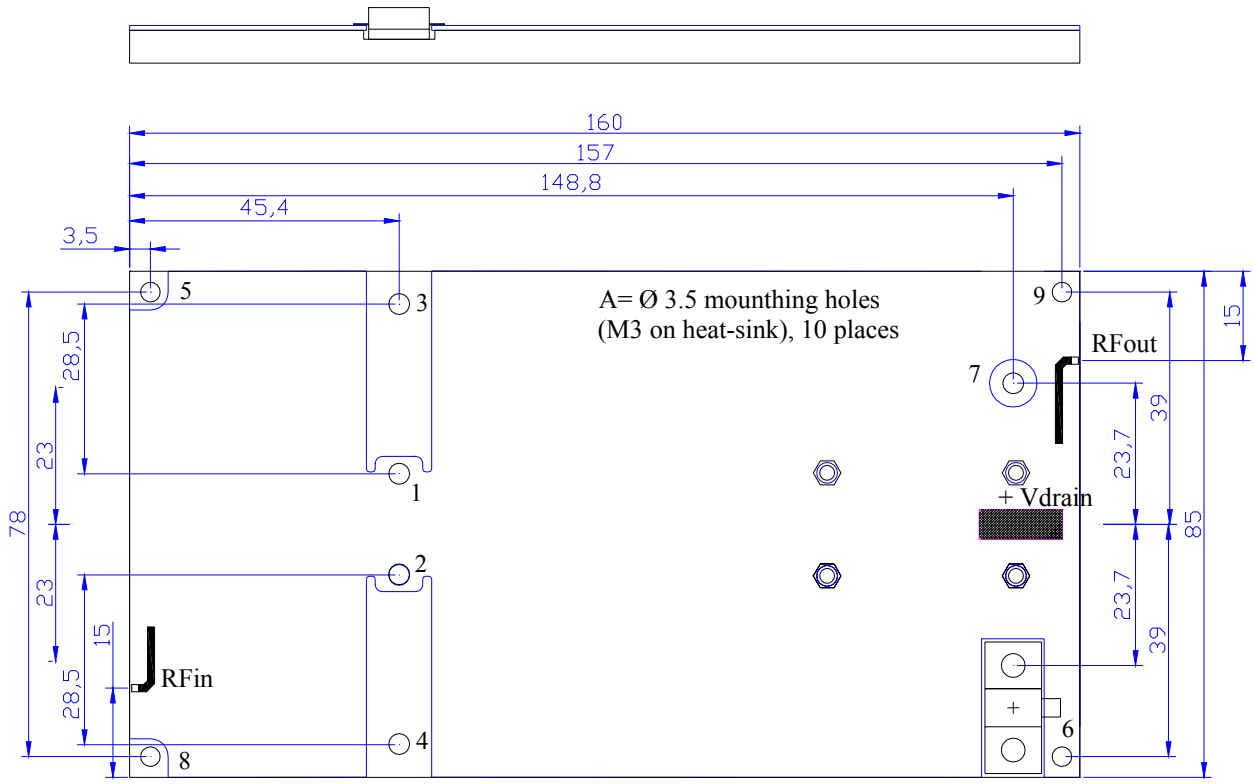
2.THERMAL COMPOUND
-Paste with silicones
-Thickness: optimum between 0.06 mm and 0.15 mm, on the whole back surface of the amplifier.

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



*Dimensions in mm.

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