

Aivon Oy

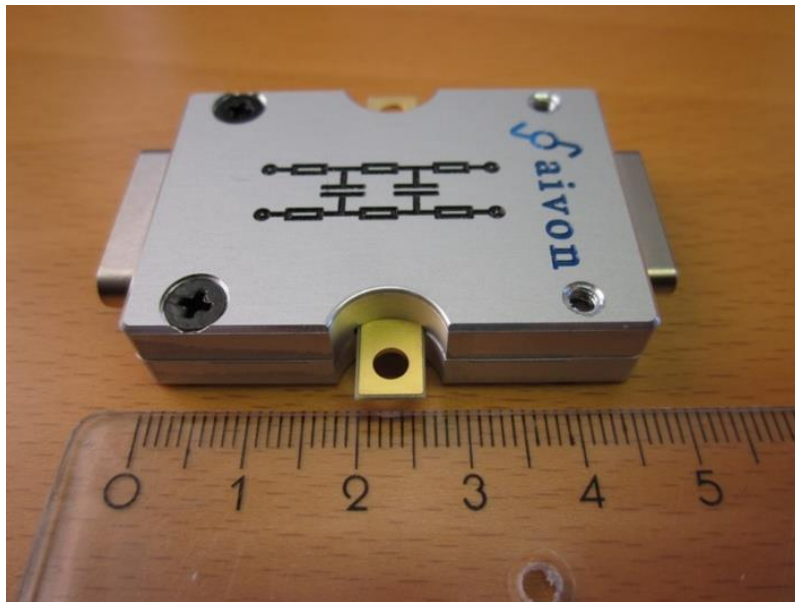
Brochure

Therma-uD

RC-filter and thermalization block

AIVON OY

Therma-uD



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Therma-uD

RC-filter and thermalization block

Aivon Therma-uD is a RC-filter and thermalization block for 24-lines in robust aluminum enclosure. Connection in the block is via 1.27mm D-microminiature 25-contact Cinch connectors, from male to female (or vice-versa due to the symmetry). Enclosure can be easily opened if one wants to replace components or apply epoxy for e.g. rf suppression. The printed circuit board inside the filter has four layers of which the two inner layers form a perfect ground plane for grounding and thermalization purposes.

Aivon Therma-uD-25G / Therma-24G

Therma-uD-25G is a RC-filter and thermalization block for 24 individual lines that are grounded capacitively to ground plane. Aivon Therma-24G is similar except that Cinch connectors are replaced by solder pads. Figure 1 illustrates the equivalent circuit consisting of SMD resistors and capacitors. Ground plane has two small “wings” that can be reached without opening the enclosure for grounding and thermalization purposes. By default, an earthing strap is attached to one of the wings (see Fig. 2).

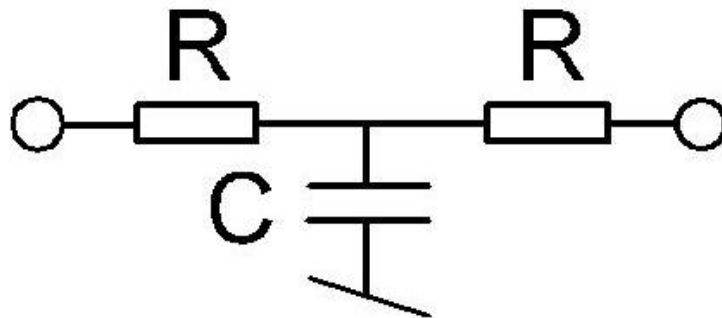


Figure 1: Equivalent circuit for one pair. Values could be e.g. $R = 1 \text{ k}\Omega$, $C = 1 \text{ nF}$. See Table I for possible values.

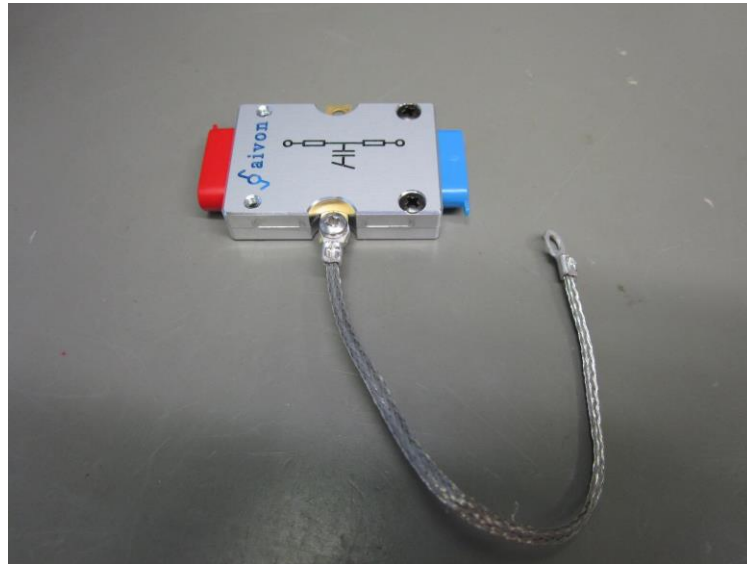


Figure 2: Earthing strap attached to Therma-uD-25G.

Aivon Therma-uD-25 / Therma-24

Therma-uD-25 is a RC-filter and thermalization block for 12-pairs. Connection in the block is via 1.27mm D-microminiature 25-contact Cinch connectors, from male to female (or vice-versa due to the symmetry). Aivon Therma-24 is similar except that Cinch connectors are replaced by solder pads. Figure 3 illustrates the equivalent circuit consisting of SMD resistors and capacitors. Otherwise the structure is similar to Therma-uD-25G.

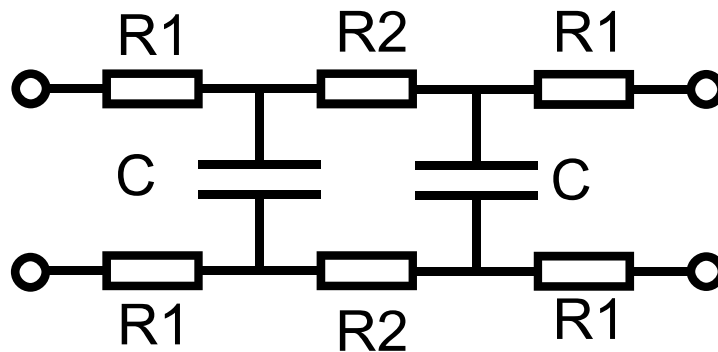
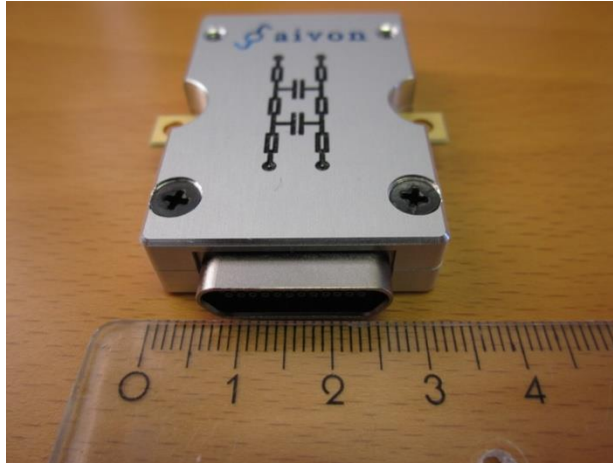


Figure 3: Equivalent circuit for one pair. Values could be e.g. R1=1 kΩ, R2=10 kΩ, C=1 nF. See Table I for possible values.



Specifications

Data for the components is following:

- R1: values see Table I, thin film 0603 resistor
 - RN73 series
 - Specs at room temperature:
 - $\pm 10\text{ppm}/^\circ\text{C}$
 - $\pm 0.1\%$
 - 63mW
- R2 and R: values see Table I, thin film 1206 resistor
 - RP73 series
 - Specs at room temperature:
 - $\pm 15\text{ppm}/^\circ\text{C}$
 - $\pm 0.1\%$
 - 250mW
- C: values see Table I, COG / NPO, 50V 0603 capacitor
 - Specs at room temperature:
 - 5%

R1 (Ohm)	R2 and R (Ohm)	C(nF)
10	10	0.01
100	20	0.033
200	100	0.1
1k	200	0.33
2k	1k	1
10k	2k	3.3
	10k	6.8
	20k	10

Table I: Possible component values for R1, R2, R and C. The chosen values do not need to be from the same row. More values from TE Connectivity/Holsworthy catalog.

Enclosure

Material	Anodized aluminum.
Male connector plug	Cinch DCDM-25PSBN-LF
Female connector socket	Cinch DCDM-25SSBN-LF

Physical dimensions

Enclosure dimensions (Width x height x depth)	46 mm x 32 mm x 10 mm (no connectors) 54.2 mm x 32 mm x 10 mm (with connectors)
Weight (with earth strap)	28 g

Document revision history

Date	Version	Description	Author
3.6.2016	0.1	Initial draft	JSP