FAM1
Flexible absorbent material

Features

Provide effective EMI suppression over a wide frequency range (10MHz to 18GHz)
Ultra-thin and extremely flexible, can be easily fitted to a wide range of form-factors
UL approved non-conductive adhesive backing available as an option
Highly effective in preventing resonance and suppressing coupling
High surface resistance (108 -109 ohms) Manufacturing friendly solution
Can be cut to any shape

Applications

Notebooks, PCs, workstations LNBs for satellite systems
Mobile communications equipment
Base stations for mobile phones and handsets Peripheral devices for computers
Wireless equipment Mobile phones
High speed clocks and timing devices
RFID (Radio Frequency Identification) systems NFC (Near field communication) systems Wireless chargers

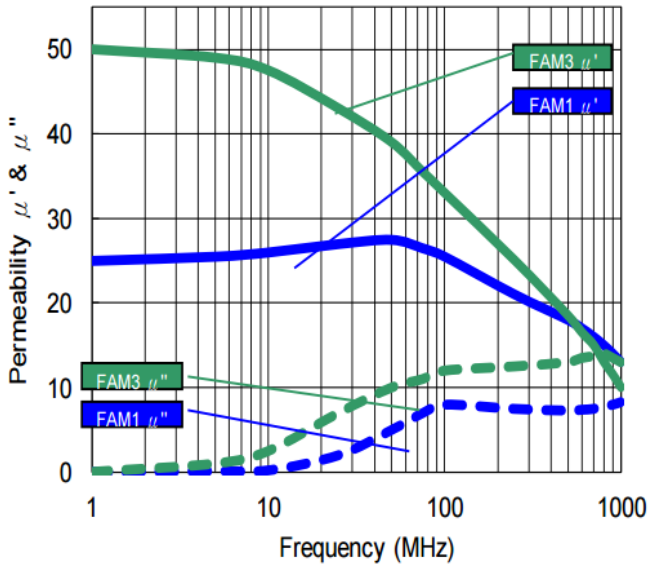
RDIF Applications

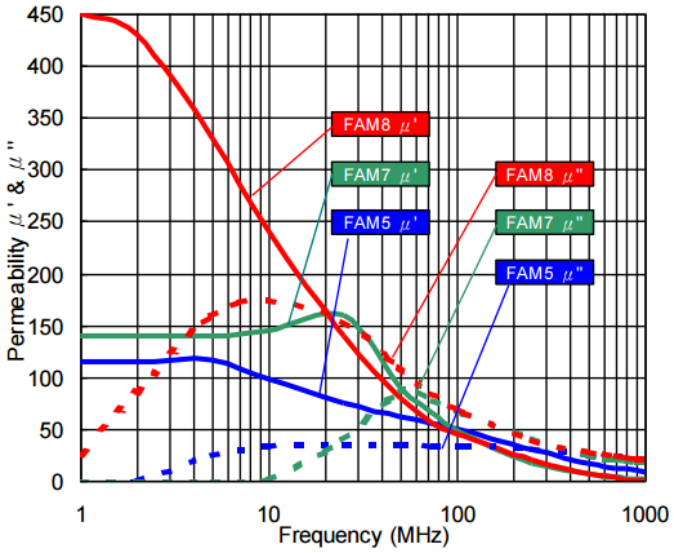
Besides the suppression and control of EMI issues, FAM can be a solution for RFID devices as well. FAM is highly suitable for LF (125 KHz) and HF (13.56 MHz) bands. FAM can deal with complex issues such as when the RFID Reader/Writer or RFID tag is attached to a metal surface. When used in this way FAM can reduce design complexity and significantly lower the total cost of ownership.

Material List

Property	Unit	FAM1	FAM3	FAM5	Test Method
Operating Temperature	˚C	-40 to 85	-40 to 85	-40 to 85	-
Applicable Frequency	GHz	0.01 to 8.0	0.01 to 18.0	0.01 to 18.0	-
Thickness Range	mm	0.12 to 2.50	0.25/0.50/0.75	0.05-0.50	-
Max. Dimension	mm	400 x 400	400 X 400	210 X 197	-
Surface Resistance	ohm	10^6	10^9	10^6	ASTM D257
Specific Gravity	g/cm³	3.6	4.8	2.7	ASTM D792
RoHS Compliance 2002/95/EC	-	Yes	Yes	Yes	-
Halogen-Free	-	No	No	No	-

Property	Unit	FAM7	FAM8	Test Method
Operating Temperature	˚C	-30 to 120	-30 to 120	-
Applicable Frequency	GHz	0.01 to 1.0	0.01 to 1.0	-
Thickness Range	mm	0.08/0.12	0.12/0.22	-
Max. Dimension	mm	130 x 130	130 X 130	-
Surface Resistance	ohm	10^9	10^9	ASTM D257
Specific Gravity	g/cm³	3.8	3.8	ASTM D792
RoHS Compliance 2002/95/EC	-	Yes	Yes	-
Halogen-Free	-	Yes	Yes	-





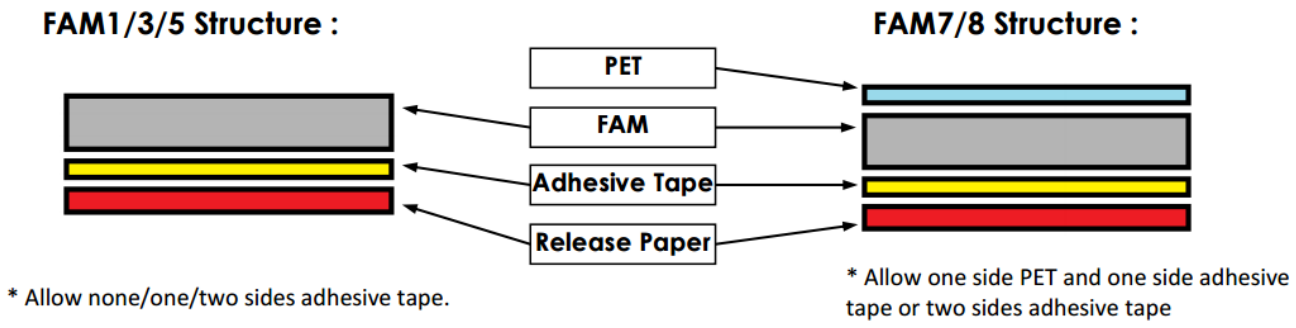
Part Number

Our standard part numbers are built as follows:

NAME OF THE PRODUCT – LENGTH – WIDTH – THICKNESS – ADHESIVE ***All measurements in mm**

E.g: FAM1 – 150 – 150 – 0.20 – 1A FAM1 Product with a length of 150 mm a width of 150 mm, thickness of 0.20 mm and 1 side adhesive

FAM1 – 150 – 150 – 0.20 FAM1 Product with a length of 150 mm a width of 150 mm, thickness of 0.20 mm and NO ADHESIVE

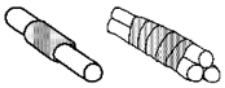


Common Weights

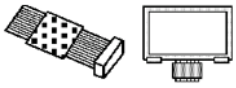
Thickness		0.12	0.20	0.25	0.33	0.50	0.60	1.00	1.50	2.00	2.50
Size	100x100	4.80	8.00	10.00	13.20	20.00	30	40.00	60.00	80.00	100.00
	200x200	19.20	32.00	40.00	52.80	80.00	120	160.00	240.00	320.00	400.00
	400x400	76.80	128.00	160.00	211.20	320.00	480	640.00	960.00	1280.00	1600.00

* All weights are in gr
** All sizes are in mm

Sheet shape examples

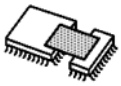


Cable wrap

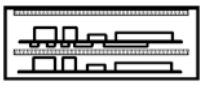


Flat cables

IC covers

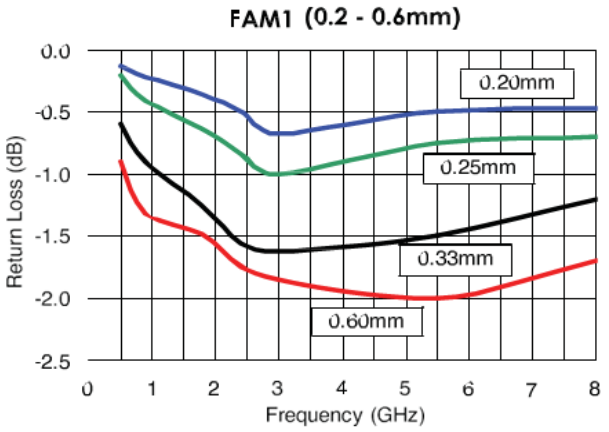


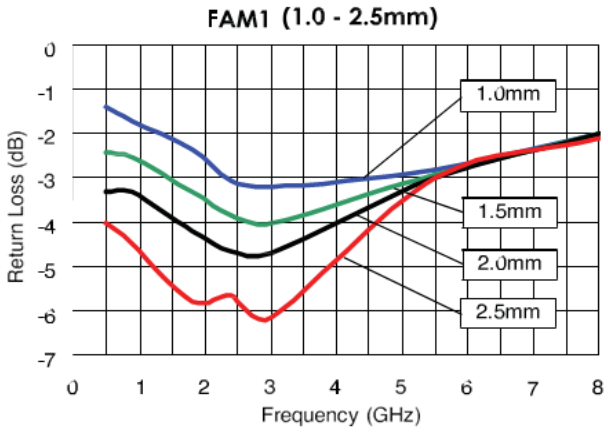
IC interface

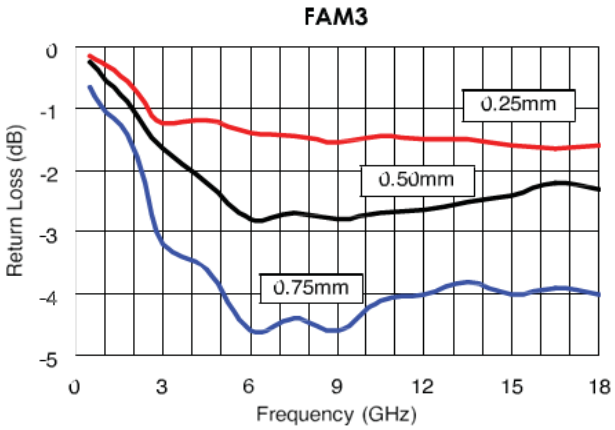


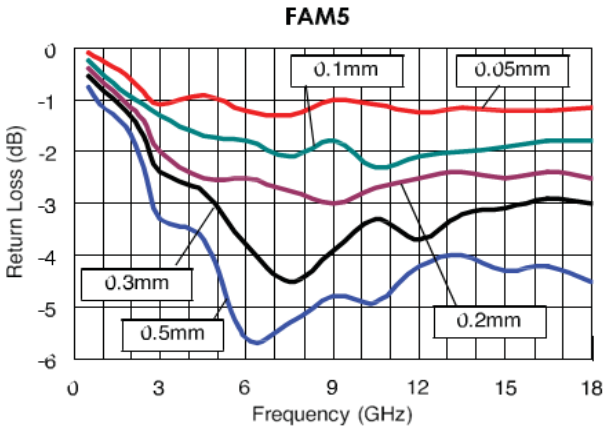
Interface between case and board

Return Loss- Frecuency









Return Loss (dB)	0.5	1	2	3	4	5	6	7	8	9	10	20	30
Absorb Rate (%)	11	21	37	50	60	69	75	80	86	89	90	99	99.9

LH/HF RDIF on metal application

When a RFID tag or RFID reader/writer is attached to a metal surface, the read distance will become much shorter than expected. The traditional solution is to increase the space between the RFID antenna and the metal but this can be detrimental when a thin device is desired. FAM can be an excellent solution to improve the read distance for both LF (125/134.2KHz) and HF (13.56MHz) bands. FAM is inserted between the RFID antenna and the metal surface to give an improvement of read distance of up to 80%. This can significantly improve the device footprint and overall efficiency.

Frequently asked questions

How to use FAM with an RFID tag?

Place the cut FAM pad into the cavity and ensure good adhesion. When attaching to a metal surface FAM should not be attached to the antenna side

How to use FAM for RFID reader/writer applications?

Insert the pre-cut FAM pad between the antenna and PCB. The antenna side should not be attached to the metal surface directly.

Can I use FAM for UHF RFID applications?

FAM works well in LF/HF RFID applications but is not suitable for UHF RFID (Electric-field) applications

How do I select the correct FAM thickness?

FAM is available in a number of standard thicknesses. T-Global engineers can offer application advice for design and engineering applications

What FAM dimension should I use?

The FAM pad should cover the entire RFID antenna area for optimum performance

Are the faces of FAM the same?

Unless an adhesive is applied there is no need to mount the FAM pad in a specific orientation.