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 (10^8 -10^9 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

RFID Applications

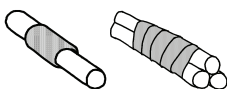
Besides the suppression and control of EMI issues, FAM can be a solution for RFID devices as well.

FAM is highly suitable for LF(125KHz) and HF(13.56MHz) 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.

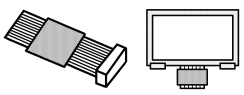
Material List

Property	Unit	FAM1	Test Method
Operating temperature	°C	-20 to +80	-
Applicable frequency	GHz	0.01 to 8	-
Thickness range	mm	0.20 to 2.50	-
Max. dimension	mm	400 x 400	-
Surface resistance	ohm	10^6	ASTM D257
Hardness	Shore A	90	ASTM D2240
Specific gravity	g/cm^3	3.6	ASTM D792
Elongation	%	10.4	ASTM D412
Tensile strength	Kgf/cm^2	25	ASTM D412
Thermal conductivity	W/mk	1.2	ASTM D5470
RoHS compliance 2002/95/EC -	-	Yes	-
Halogen-free	-	No	-
Flame retardant	-	UL94V-0	-

Sheet Shape Examples

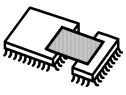


Cable wrap

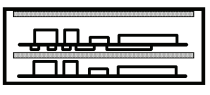


Flat cables

IC covers



IC interface



Interface between case and board

Tel: +44 20 8133 2062 Email: sales@tglobaltechnology.com Web: www.tglobaltechnology.com Skype: tglobal.technology

Material List

Item		0.9 GHz	1.8 GHz	2.4 GHz	Application Examples
FAM1	0.20mm	-0.22dB (4.9%)	-0.35dB (7.7%)	-0.50dB (10.9%)	[Shielding Box] [Power Supply] [Mobile Phone] [GPS] [Battery] [IC] [NB] [NFC] [RFID tag/reader] [Wireless Charger]
	0.25mm	-0.40dB (8.8%)	-0.63dB (13.5%)	-0.84dB (17.6%)	
	0.33mm	-0.90dB (18.7%)	-1.25dB (25.0%)	-1.56dB (30.2%)	
	0.60mm	-1.32dB (26.2%)	-1.49dB (28.9%)	-1.75dB (33.2%)	
	1.0mm	-1.70dB (32.7%)	-2.35dB (41.8%)	-3.04dB (50.3%)	
	1.5mm	-2.51dB (43.9%)	-3.32dB (53.4%)	-3.85dB (58.8%)	
	2.0mm	-3.31DB (53.3%)	-4.21DB (62.1%)	-4.66DB (65.8%)	
	2.5mm	-4.46dB (64.2%)	-5.79dB (73.6%)	-5.64dB (73.4%)	

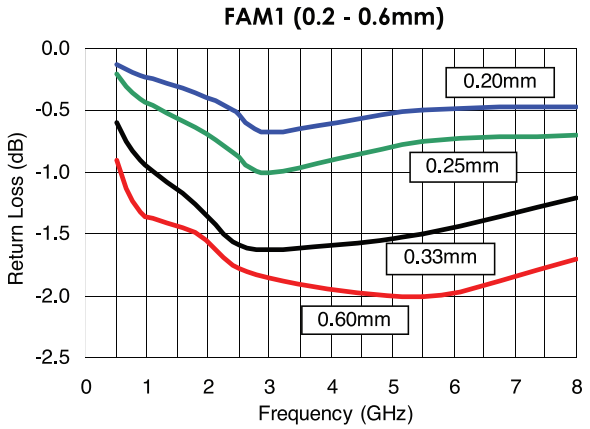
*Test results may vary from application to application

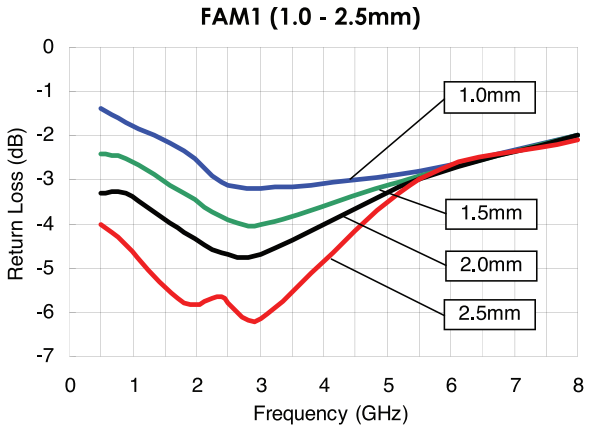
Tube Shape

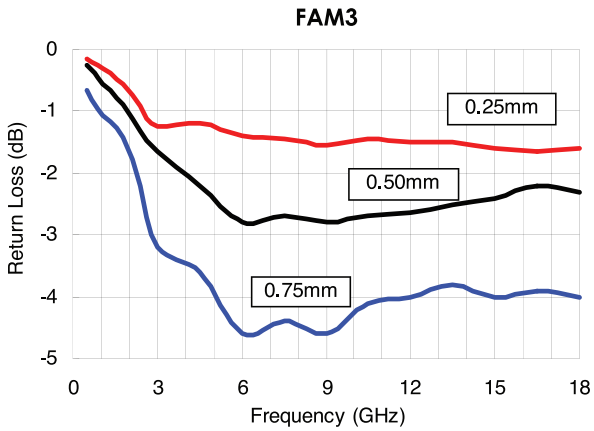
Item	FT0302	FT0504	FT0705	FT0906	FT1107	FT1309	FT1510
OD (mm)	3.0	5.0	7.0	9.0	11.0	13.0	15.0
ID (mm)	2.0	4.0	5.0	6.0	7.0	9.0	10.0

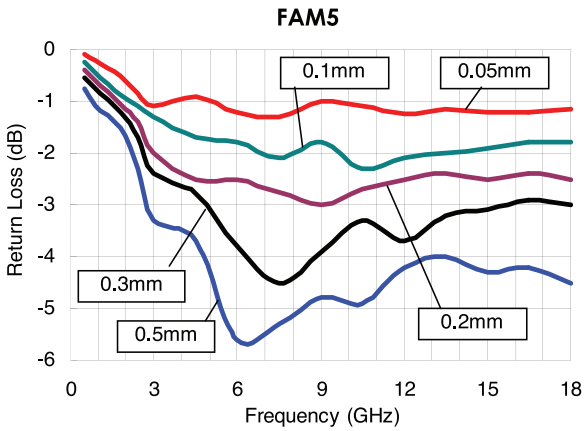
Return Loss – Frequency:

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





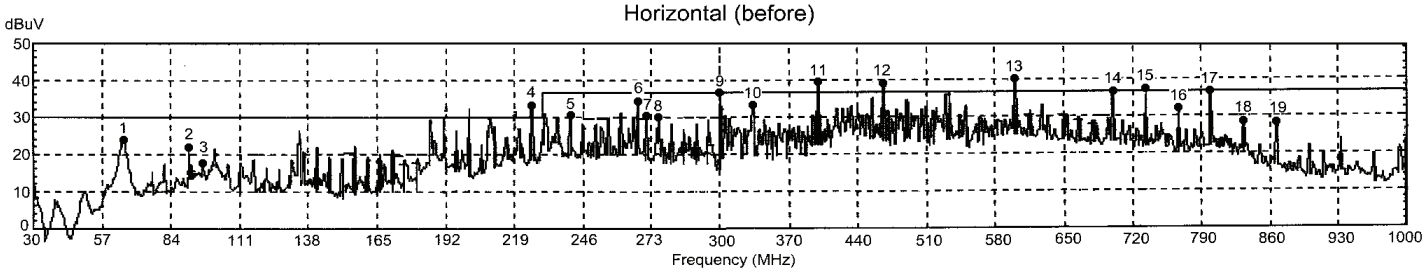




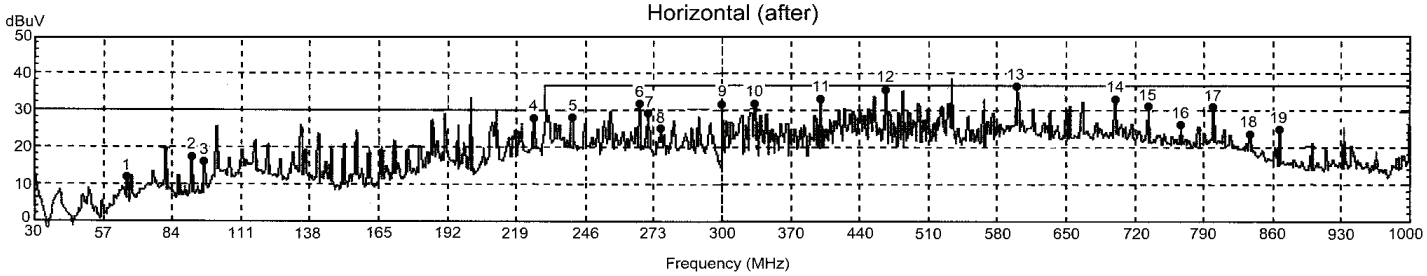
Test Example

Notebook = FAM (before & after)

Horizontal (before)

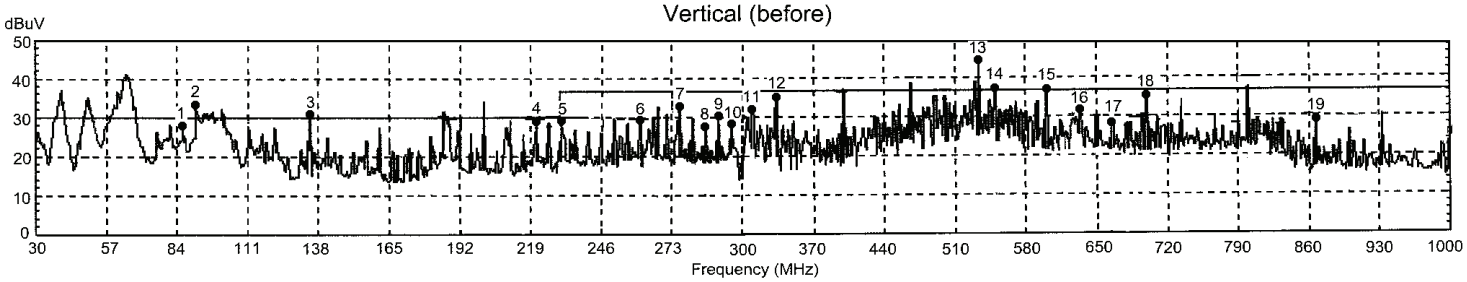


Horizontal (after)

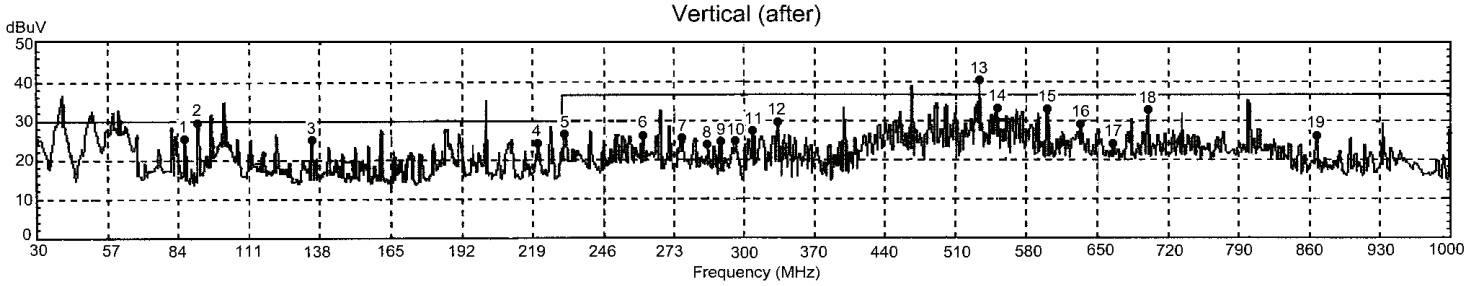


Horizontal	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Frequency(MHz)	65.1	91.7	96.3	225.6	241.0	267.2	270.7	275.7	300.0	334.0	399.0	466.0	600.0	700.0	733.0	767.0	800.0	833.0	867.0
Before (dBuV)	23.8	21.6	18.9	32.7	30.1	33.5	30.2	29.7	36.4	34.3	39.9	38.9	40.2	36.8	37.0	31.6	35.6	27.9	27.6
After (dBuV)	12.0	16.9	15.4	27.1	28.0	31.2	27.5	24.7	31.1	31.2	32.9	36.9	36.6	32.7	30.5	25.9	30.7	23.0	24.6
Attenuation (dBuV)	11.8	4.7	3.5	5.6	2.1	2.3	2.7	5.0	5.3	3.1	7.0	2.0	3.6	4.1	6.5	5.7	4.9	4.9	3.0

Vertical (before)



Vertical (after)



Vertical	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Frequency(MHz)	86.1	91.3	134.5	221.3	230.6	261.0	275.3	285.7	290.7	295.4	309.0	333.0	534.0	550.0	633.0	665.0	701.0	709.0	866.0
Before (dBuV)	28.0	33.1	30.4	28.2	28.8	28.8	32.3	27.3	30.2	28.4	31.7	24.5	43.8	36.7	36.3	30.9	28.0	34.9	38.7
After (dBuV)	25.1	29.0	24.9	22.8	26.2	25.8	25.3	23.9	25.8	24.7	26.8	29.6	40.6	33.3	32.7	27.8	24.1	32.4	25.9
Attenuation (dBuV)	2.9	4.1	5.5	5.4	2.6	3.0	7.0	3.4	4.4	3.7	4.9	4.9	3.2	3.4	3.6	3.1	3.9	2.5	2.8

LF/HF RFID 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 efficieny.

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.

Read Distance (Reference):

ISO Card	No Metal	On Metal	FAM1								FAM3			FAM5				
			0.2 mm	0.25 mm	0.33 mm	0.6 mm	1.0 mm	1.5 mm	2.0 mm	2.5 mm	0.25 mm	0.50 mm	0.75 mm	0.05 mm	0.1 mm	0.2 mm	0.3 mm	0.5 mm
Icode2	11	0	5.5	6.5	6.5	8	7.5	7	7	7	6	6.5	7	4.5	8	7	6.5	6
TI 2048	14	0	4	5	5.5	9	7	7	6	6	4.5	8.5	9	5.5	7	7	5.5	5
EM4100	19	4.5	8	9	9.5	12	7.5	5	4	4	9.5	12	9	11	12	4	4	3

- The read distance unit is CM
- Different reader will cause different read distance

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for t-global technology ***manufacturer:***

Other Similar products are found below :

LP0007/01-LI2000-0.15 FAM3-200-200-0.75-1A FAM3-100-100-0.75-1A LP0001/01-LI98-0.15 FAM1-100-100-0.2-1A FAM1-100-100-0.5-1A FAM3-100-100-0.5-1A FAM1-100-100-1.0-1A TG-CPCB3 TG-CPCB1 TG-CPCB1-LI98-0.15 LP0001/01-LI2000-0.15