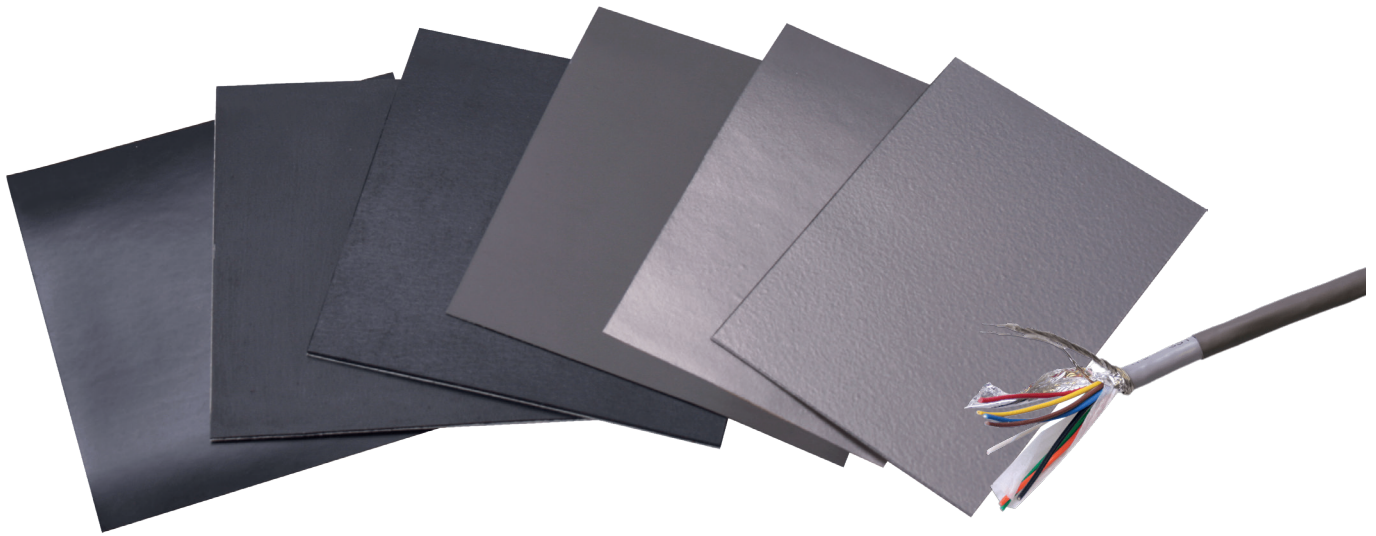


EMI ABSORBER SHEETS 5780

The EMI flexible absorber sheets, developed for electromagnetic-wave absorption and noise suppression, can eliminate noise effectively

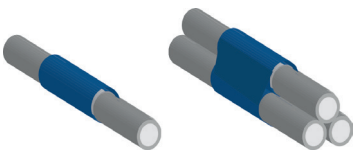


The EMI flexible absorber sheets, developed for electromagnetic-wave absorption and noise suppression, can eliminate noise effectively. EMC/EMI problems are solved by attaching noise-suppression sheets simply on the parts that are sources of noise.

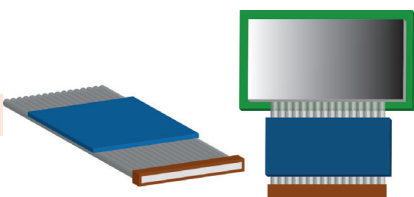
FEATURES AND ADVANTAGES

- Very flexible and easy to handle
- Can be delivered in any shape, size and/or thickness
- Optionally available as a custom-made tube
- Can be cut according to the customer's drawings
- Provides effective EMI suppression in a wide frequency range (1MHz to 18GHz)
- Changes the magnetic flux path to avoid interference with other components or surrounding cables
- Reduces the eddy current when the magnetic flux is close to metal
- Non-conductive adhesive backing (UL recognized) available
- Effective in preventing resonance and suppressing coupling
- High surface resistance ($>10^6 \Omega$)
- Easy and fast to process due to self-adhesive

USAGE EXAMPLES



Example 1: Wrapped around a cable

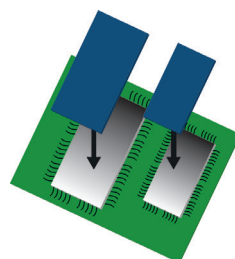
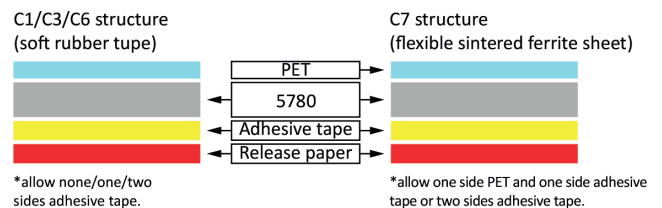


Example 2: Applied to a flat cable

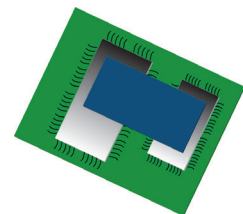
APPLICATIONS

- RFID (Radio Frequency Identification) systems
- NFC (Near-field communication)
- Wireless power chargers (WPC / Qi)
- Computers (NB / desktop / tablet) and peripherals
- Digital Products
- Mobile phones / smartphones / phablet
- Wireless equipment
- EMI-shielding box / black box
- Between printed circuit boards
- On IC's, processors, and controllers
- On cables that need high flexibility

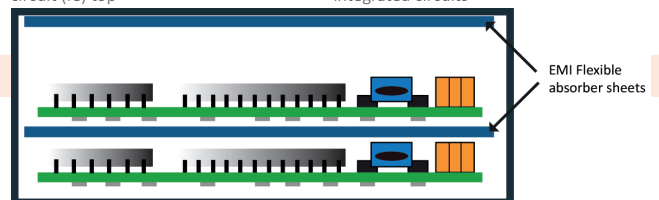
MATERIAL STRUCTURE



Example 3: Applied to an integrated circuit (IC) top



Example 4: Applied between integrated circuits

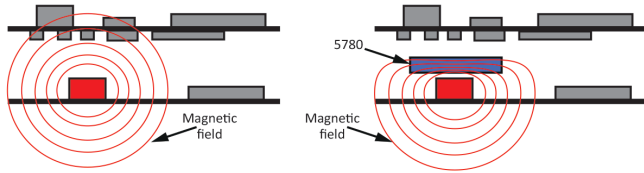


Example 5: Applied to case and between boards



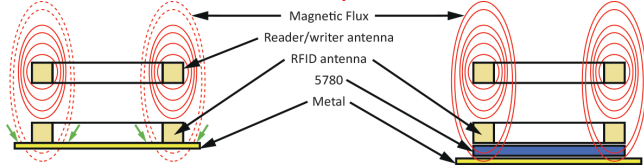
» EMI ABSORBER SHEETS 5780

EFFECT DIAGRAM - MAGNETIC SHIELD



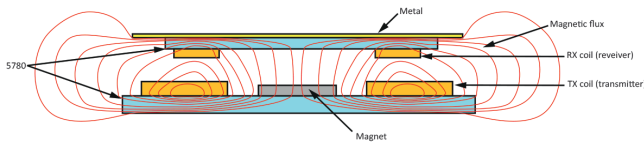
5780 EMI flexible absorber sheets can change the magnetic flux path to keep the magnetic flux from affecting other components.

EFFECT DIAGRAM - RFID/NFC ON METAL



5780 EMI Flexible absorber sheets can be used for a wireless power charger to avoid eddy current when the RX coil is attached to metal; this changes the magnetic flux path between TX coil, RX coil, and magnet.

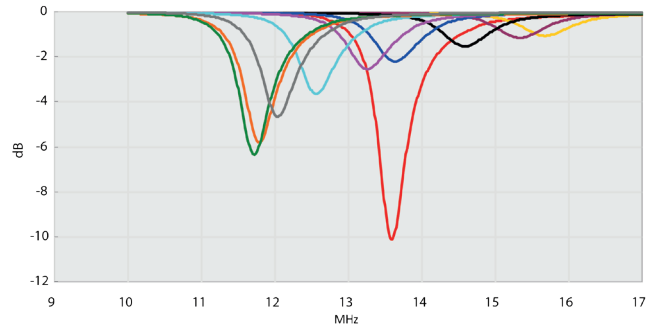
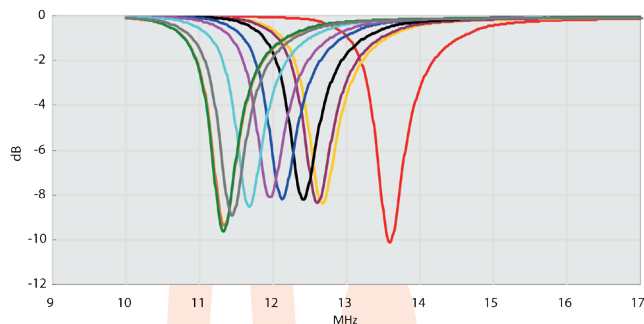
EFFECT DIAGRAM - HIGH FREQUENCY POWER CHARGER



5780 EMI Flexible absorber sheets can be used for a wireless power charger to avoid eddy current when the RX coil is attached to metal. This changes the magnetic flux path between TX coil, RX coil, and magnet.

THE VARIATION OF RESPONSE FREQUENCY WHEN RFID TAG + 5780 + METAL (REFERENCE)

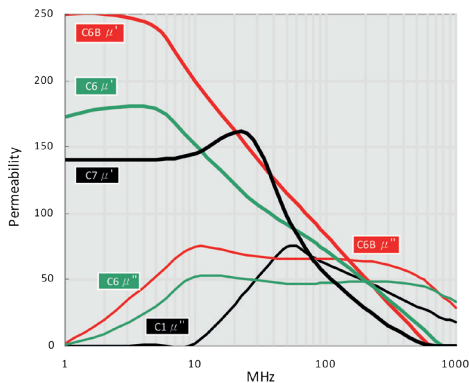
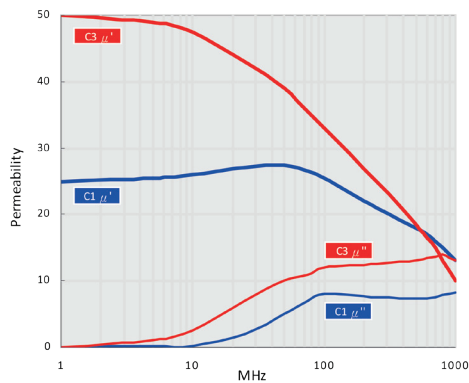
The response frequency is become lower when 5780 thickness become thick but the signal strength with little difference.



- 5780-C1-2.5mm (-6.35dB@11.73MHz)
- 5780-C1-2.0mm (-5.81dB@11.80MHz)
- 5780-C1-1.5mm (-4.70dB@12.05MHz)
- 5780-C1-1.0mm (-3.65dB@12.58MHz)
- 5780-C1-0.6mm (-2.55dB@13.25MHz)
- 5780-C1-0.2mm (-1.07dB@15.68MHz)
- Tag only (-10.13dB@13.60MHz)
- 5780-C1-0.5mm (-2.22dB@13.63MHz)
- 5780-C1-0.33mm (-1.54dB@14.58MHz)
- 5780-C1-0.25mm (-1.16dB@15.33MHz)

- The dimensions of the 5780 and metal are 85.6x54mm.
- The RFID tag is standard ISO card size (85.6x54mm) with HF TI 2048 chip.

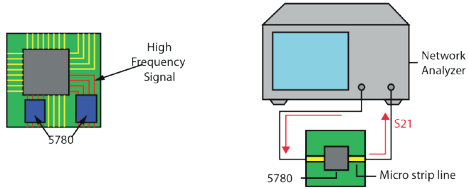
PERMEABILITY ($\mu = \mu' - j\mu''$):



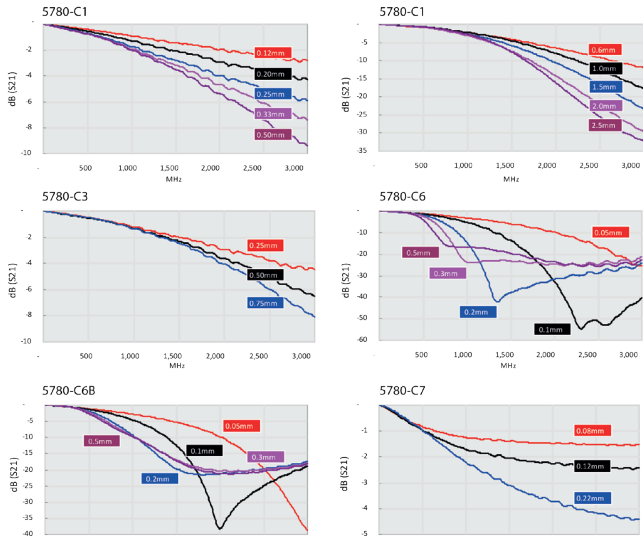
The response frequency is increase when metal attached, but the signal strength is smaller if the 5780 thickness is thinner. It means the metal affect more when the 5780 is thinner.

» EMI ABSORBER SHEETS 5780

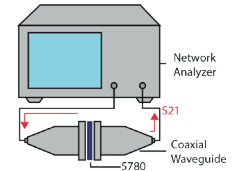
FILTER EFFECT TEST



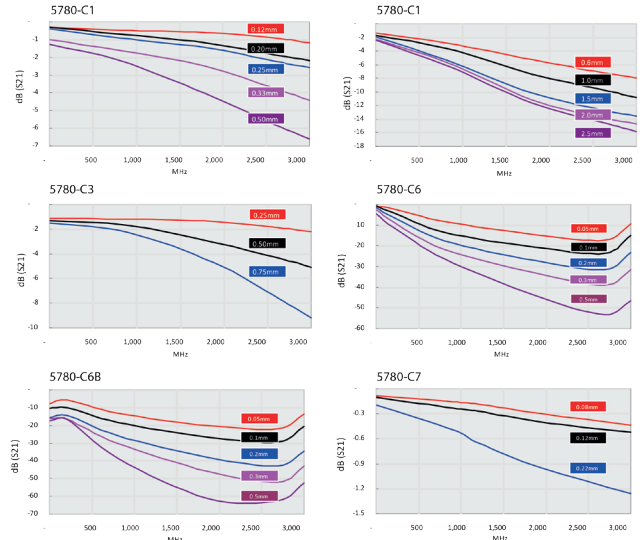
Filter Effect Test :



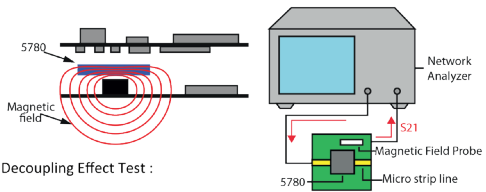
INSERTION LOSS (1MHZ ~ 3GHZ)



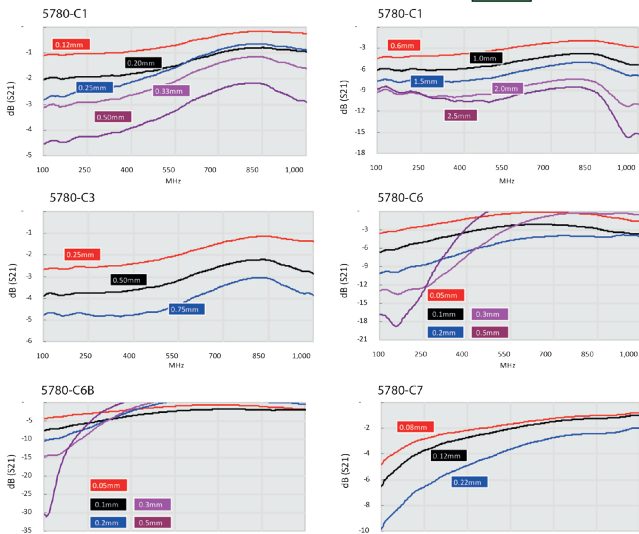
Insertion loss (1MHz ~ 3GHz) :



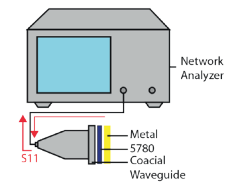
MAGNETIC SHIELD / DECOUPLING EFFECT TEST



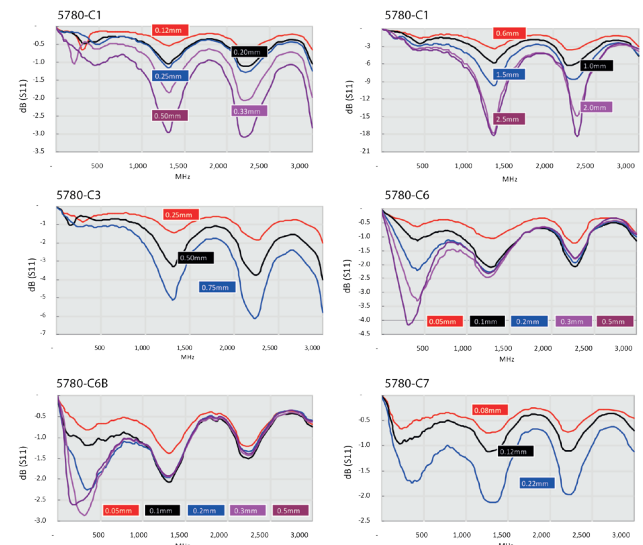
Magnetic Shield / Decoupling Effect Test :



RETURN LOSS (1MHZ ~ 3GHZ)

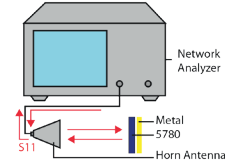


Return loss (1MHz ~ 3GHz) :

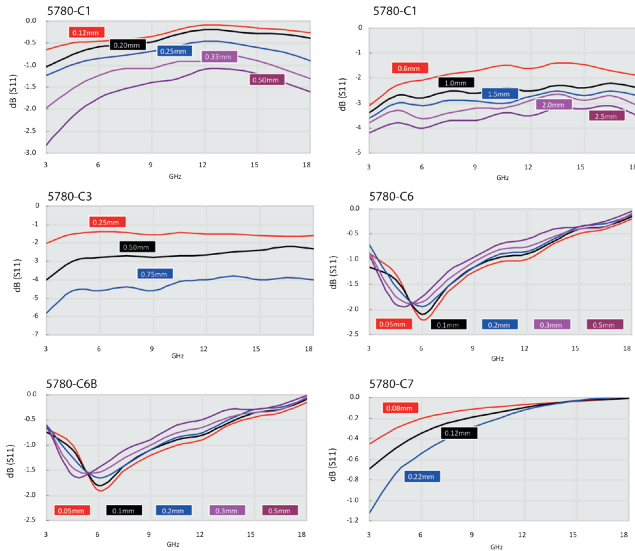


» EMI ABSORBER SHEETS 5780

RETURN LOSS (3GHZ ~ 18GHZ)



Return loss (3GHz ~ 18GHz) :



CHOOSING THE RIGHT EMI FLEXIBLE ABSORBER SHEET

Item	C1	C3	C6	C6B	C7
Best Application	RFID, NFC	EMI, RFID, NFC	EMI, RFID, NFC, wireless charger (no magnet type)	EMI, RFID, NFC, wireless charger (no magnet type)	EMI, RFID, NFC, wireless charger (no magnet type)
Material	Magnetic powder + rubber	Magnetic powder + rubber	Magnetic powder + rubber	Magnetic powder + rubber	Sintered ferrite sheet
Acceptable frequency range	1MHz- 18GHz	1MHz- 18GHz	1MHz- 9GHz	1MHz- 9GHz	1MHz- 3GHz
Operation temperature	-40 ~ +85 C°	-40 ~ +85 C°	-40 ~ +85 C°	-40 ~ +85 C°	-30 ~ +120 C°
Permeability (μ' @1MHz)	25	50	170	250	140
Density (g/cm ³)	3.6	4.8	3.8	3.8	3.8
Surface Resistance	10 ⁶	10 ⁶	10 ⁶	10 ⁶	10 ⁹
RoHS 2.0 Compliance	2011/65/EU	2011/65/EU	2011/65/EU	2011/65/EU	2011/65/EU
Halogen-Free	No	No	Yes	Yes	Yes
Thickness (mm)	0.12/0.20/0.25/0.33/0.50/0.6/1.0/1.5/2.0/2.5	0.25/0.50/0.75	0.05/0.1/0.2/0.3/0.5	0.05/0.1	0.008/0.12/0.22
Max. Dimension	600 x 400 mm	600 x 400 mm	210 x 297 mm (A4)	210 x 297 mm (A4)	130 x 130 mm

ORDER EXAMPLE

Series	Type	Width (mm)	Length (mm)	Thickness (mm)
5780	<p>C1 : Magnetic powder + rubber</p> <p>C3 : Magnetic powder + rubber</p> <p>C6 : Magnetic powder + rubber</p> <p>C6b : Magnetic powder + rubber</p> <p>C7 : Sintered ferrite</p>	Specify the width in mm	Specify the length in mm	Specify the desired thickness. The options can be found in the table above.

*Notice

Information supplied in these tests which Holland Shielding referred to as HSS believes to be reliable. HSS has no control over the user's product which incorporates products, therefore it is the responsibility of the user to determine the suitability for his particular application and we recommend that the user make his own test to determine suitability.

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