



# Magnetic Sheets for RFID

Flexield

# IFL series

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# Magnetic Sheets for RFID

Product compatible with RoHS directive

Flexield

## Overview of IFL Series

### FEATURES

- High permeability ( $\mu'$ ) and low magnetic loss ( $\mu''$ ) materials up to 13.56MHz
- Multiple materials and thickness available to optimize coil Quality (Q) factor
- High flexibility which allows sheets to easily be formed to desired shape
- Non conductive surface allows for metal coils to be directly applied to magnetic sheet
- Protects system from metal objects located directly behind coils
- Available on a roll or in sheet form

### APPLICATION

- Improving antenna reception performance and sensitivity in RFID readers/writers
- Isolation of magnetic field in metal smart cards and tags
- NFC transmitters and receivers
- Shielding for low power magnetic resonance wireless power transfer systems


### STANDARD SHAPE LIST

Material name	Magnetic layer thickness (mm)	Sheet dimensions (mm)	Roll dimensions	
			Width (mm)	Length (m)
IFL04	0.050	300X200	300	100
	0.100			
	0.200		Non-STD*	Non-STD*
IFL05K	0.050	300X200	300	100
	0.100			
	0.200		Non-STD*	Non-STD*

\* Please contact us for details



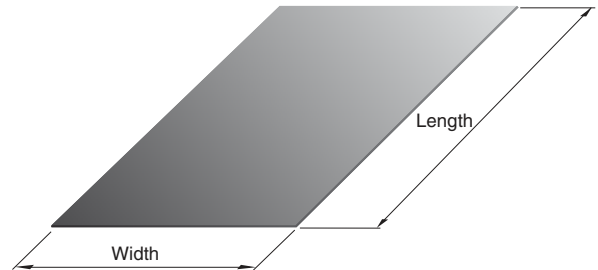
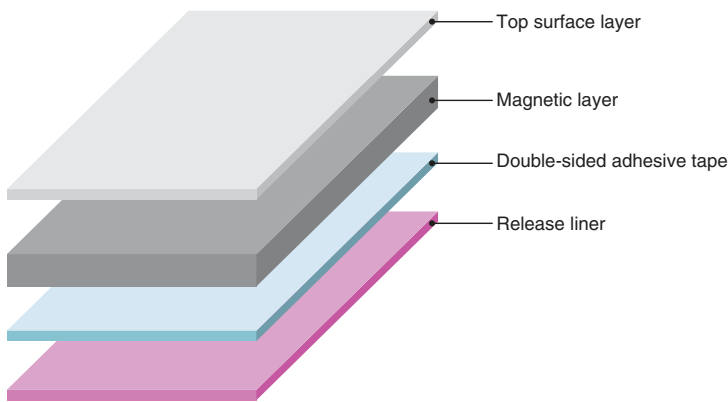
RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. <http://product.tdk.com/en/environment/rohs/>

 Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.

# IFL series for RFID Sheet Type

## ■ PART NUMBER CONSTRUCTION

IFL	04	-	050	N	B	300	×	200				
<b>Series name</b>	<b>Material symbol</b>		<b>Magnetic layer thickness (mm)</b>		<b>Top surface layer thickness (mm)</b>		<b>Double-sided adhesive tape thickness (mm)</b>		<b>Length (mm)</b>		<b>Width (mm)</b>	
IFL	04		050	0.050	N	No	N	No	300	300	200	200
	05K		100	0.100	R	0.038	B	0.010				
			200	0.200	R: Release type		D	0.030				



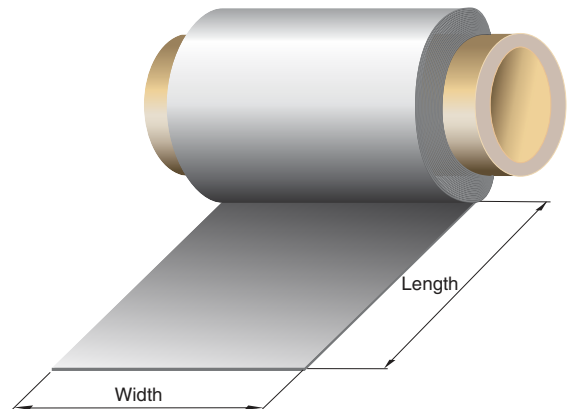
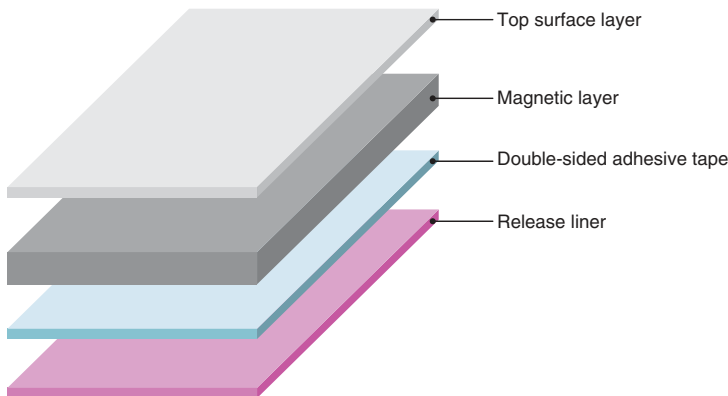
## ■ STANDARD PART NUMBER LIST

Material name	Sheet dimensions (mm)	Magnetic layer thickness (mm)	Total thickness (mm)typ.	Part number
IFL04	300X200	0.050	0.060	IFL04-050NB300X200
		0.100	0.110	IFL04-100NB300X200
		0.200	0.240	IFL04-200ND300X200
IFL05K	300X200	0.050	0.060	IFL05K-050NB300X200
		0.100	0.110	IFL05K-100NB300X200
		0.200	0.240	IFL05K-200ND300X200

# IFL series for RFID Roll Type

## ■ PART NUMBER CONSTRUCTION

IFL	04	-	050	N	B	1HR	×	300	
Series name	Material symbol	Magnetic layer thickness (mm)		Top surface layer thickness (mm)		Double-sided adhesive tape thickness (mm)		Length (m)	Width (mm)
IFL	04	050	0.050	N	No	N	No	1HR	100
	05K	100	0.100	R	0.038	B	0.010		300
		200	0.200	R: Release type		D	0.030		300



## ■ STANDARD PART NUMBER LIST

Material name	Roll dimensions		Magnetic layer thickness (mm)	Total thickness (mm)typ.	Part number
	Width (mm)	Length (m)			
IFL04	300	100	0.050	0.088*	IFL04-050RN1HRX300
			0.100	0.138*	IFL04-100RN1HRX300
			0.050	0.060	IFL04-050NB1HRX300
			0.100	0.110	IFL04-100NB1HRX300
IFL05K	300	100	0.050	0.088*	IFL05K-050RN1HRX300
			0.100	0.138*	IFL05K-100RN1HRX300
			0.050	0.060	IFL05K-050NB1HRX300
			0.100	0.110	IFL05K-100NB1HRX300

\* Note : Including top surface layer

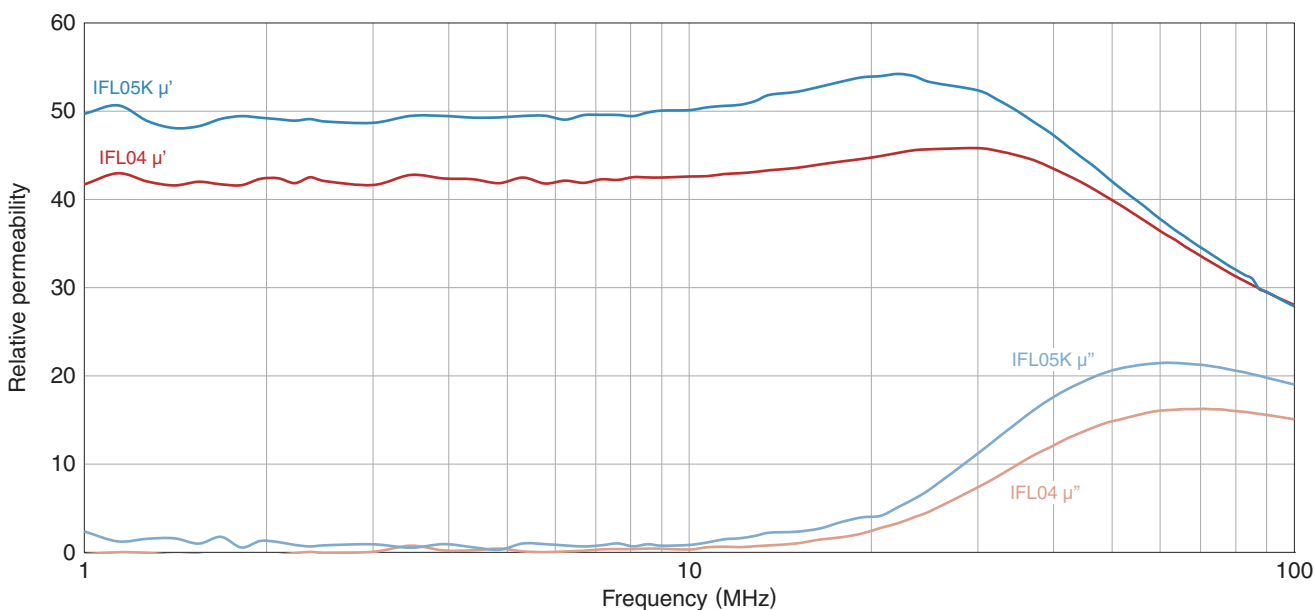
# IFL Series for RFID

## MATERIAL CHARACTERISTIC

### MATERIAL CHARACTERISTIC SPECIFICATION TABLE

Material name	Relative permeability [at 13.56MHz]			Surface resistivity ( $\Omega$ /sq.)typ.	Thermal conductivity (W/m · K)	Saturated magnetic flux density (mT)	Curie temperature ( $^{\circ}$ C)	Relative Permittivity (at 1MHz)typ.	Operating temperature ( $^{\circ}$ C)
	$\mu'$	$\mu''$	$\mu'/\mu''$						
IFL04	45	1.3	35	10M	1.5	100 [H=1194A/m]	> 500	1450	-40 to +85
IFL05K	50	2.0	25	10M	1.5	150 [H=1194A/m]	> 500	1500	-40 to +85

### RELATIVE PERMEABILITY



Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.

## REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

### SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

#### REMINDERS

- The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

- |  |  |
|--|--|
| (1) Aerospace/aviation equipment   | (8) Public information-processing equipment                                  |
| (2) Transportation equipment (cars, electric trains, ships, etc.)                    | (9) Military equipment   |
| (3) Medical equipment (excepting Pharmaceutical Affairs Law classification Class1,2) | (10) Electric heating apparatus, burning equipment                           |
| (4) Power-generation control equipment   | (11) Disaster prevention/crime prevention equipment                          |
| (5) Atomic energy-related equipment  | (12) Safety equipment  |
| (6) Seabed equipment   | (13) Other applications that are not considered general-purpose applications |
| (7) Transportation control equipment   |  |

When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.