



# Magnetic Sheets for RFID

Flexield

# IFL/IBF series

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## 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**

- When mounting on live electrical parts directly, there is a fear that an insulation accident is caused, so please consider on the design in case of use.
- There is a fear that sullenness of double sided adhesive tape occurs, so please refrain from the use to a part where you wind repeatedly by which it's for the hinge part.
- 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. When the damage occurs by having been used 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 understand that the responsibility cannot be taken.

- (1) Aerospace/Aviation equipment
- (2) Transportation equipment (cars, electric trains, ships, etc.)
- (3) Medical equipment
- (4) Power-generation control equipment
- (5) Atomic energy-related equipment
- (6) Seabed equipment
- (7) Transportation control equipment

- (8) Public information-processing equipment
- (9) Military equipment
- (10) Electric heating apparatus, burning equipment
- (11) Disaster prevention/crime prevention equipment
- (12) Safety equipment
- (13) Other applications that are not considered general-purpose applications

When using these products in general purposes and standard use, it is recommended that protection circuits are used, devices are secured, and backup circuits are kept for increased safety.

# Magnetic Sheets for RFID

Product compatible with RoHS directive

Flexield

## Overview of IFL/IBF Series

### FEATURES

- High permeability, low magnetic loss (13.56MHz).
- It's also possible to load on a little gap because it's thin type.
- Has flexibility , it does not crack by impact or the like .
- Offer by a roll shape is possible (IFL04).

### APPLICATION

- For improving reception performance in RFID reader/writers.
- Integrate IC cards with metal.
- Integrate IC tags with metal.
- Improved antenna reception sensitivity.

### STANDARD SHAPE LIST

| Material | Thickness<br>(mm) | Sheet<br>dimensions<br>(mm) | Roll          |               |
|----------|-------------------|-----------------------------|---------------|---------------|
|          |                   |                             | Width<br>(mm) | Length<br>(m) |
| IFL04    | 0.05              | 300×200                     | 300           | 100           |
|          | 0.1               |                             |               |               |
|          | 0.2               |                             |               |               |
| IBF15    | 0.1               | 125×125                     | —             | —             |
|          | 0.18              |                             |               |               |

 IFL


Sheet


 IBF


Roll



Sheet

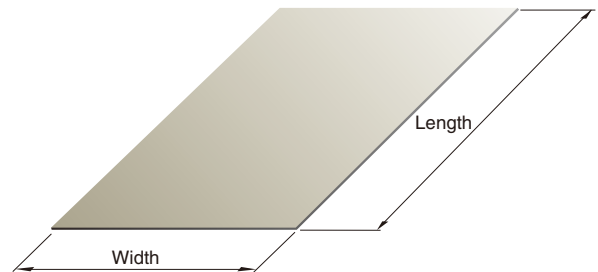
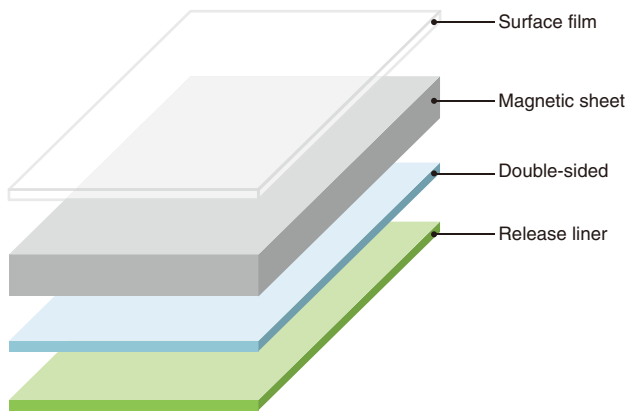
RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. <http://product.tdk.com/en/environment/rohs/>

 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 Sheet Type

## ■ PART NUMBER CONSTRUCTION

| IFL         | 04              | 050                              | N    |                             | B     |                                  | 300  | ×           | 200 |            |     |
|-------------|-----------------|----------------------------------|------|-----------------------------|-------|----------------------------------|------|-------------|-----|------------|-----|
| Series name | Material symbol | Magnetic material thickness (mm) |      | Surface film thickness (mm) |       | Double-sided tape thickness (mm) |      | Length (mm) |     | Width (mm) |     |
|             | 04              | 050                              | 0.05 | N                           | No    | N                                | No   | 300         | 300 | 200        | 200 |
|             |                 | 100                              | 0.10 | R                           | 0.038 | B                                | 0.01 |             |     |            |     |
|             |                 | 200                              | 0.20 | R: Release type             |       | D                                | 0.03 |             |     |            |     |



## ■ STANDARD PART NUMBER LIST

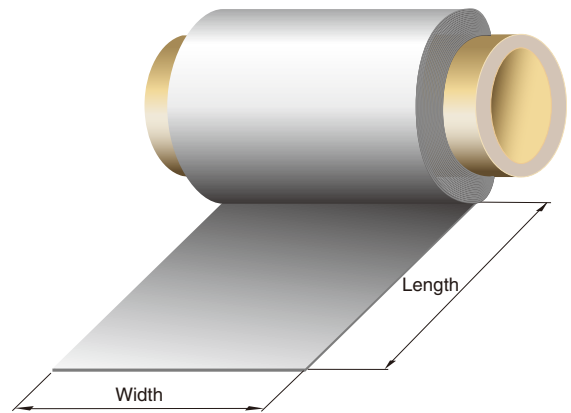
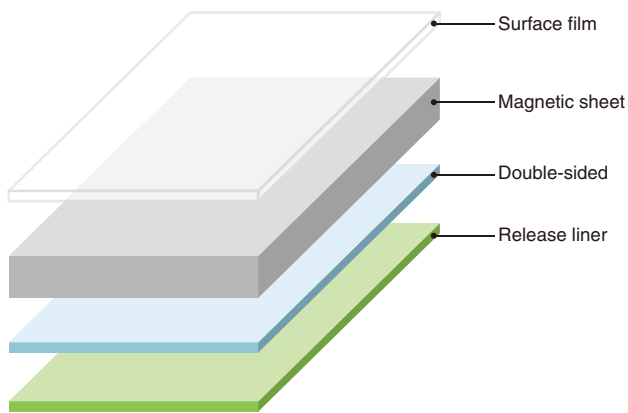
| Material | Standard dimensions (mm) | Thickness | Part number        |
|----------|--------------------------|-----------|--------------------|
| IFL04    | 300×200                  | 0.05      | IFL04-050NB300×200 |
|          |                          | 0.1       | IFL04-100NB300×200 |
|          |                          | 0.2       | IFL04-200ND300×200 |



# IFL Series Roll Type

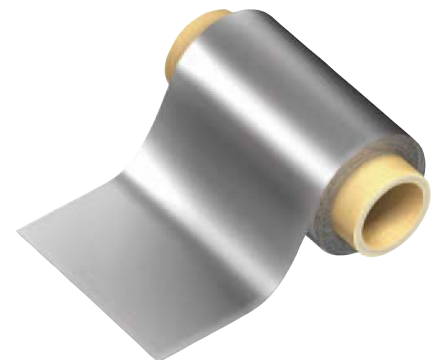
## ■ PART NUMBER CONSTRUCTION

| IFL         | 04              | 050                              |      | R                           |       | N                                |      | 1HR        |     | × | 300        |     |
|-------------|-----------------|----------------------------------|------|-----------------------------|-------|----------------------------------|------|------------|-----|---|------------|-----|
| Series name | Material symbol | Magnetic material thickness (mm) |      | Surface film thickness (mm) |       | Double-sided tape thickness (mm) |      | Length (m) |     |   | Width (mm) |     |
|             | 04              | 050                              | 0.05 | N                           | No    | N                                | No   | 1HR        | 100 |   | 300        | 300 |
|             |                 | 100                              | 0.10 | R                           | 0.038 | B                                | 0.01 |            |     |   |            |     |
|             |                 |                                  |      | R: Release type             |       | D                                | 0.03 |            |     |   |            |     |



## ■ STANDARD PART NUMBER LIST

| Material | Width (mm) | Length (m) | Thickness (mm) | Part number        |
|----------|------------|------------|----------------|--------------------|
| IFL04    | 300        | 100        | 0.05           | IFL04-050RN1HRX300 |
|          |            |            | 0.1            | IFL04-100RN1HRX300 |



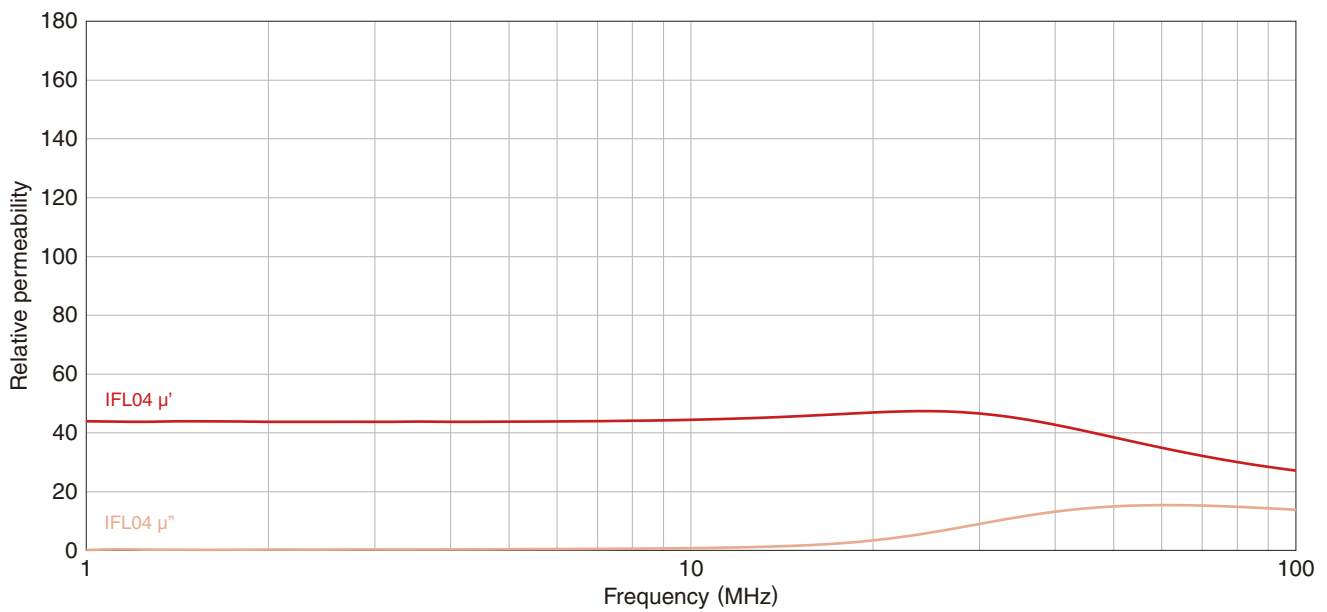
# IFL Series

## ■ MATERIAL CHARACTERISTIC

### □ MATERIAL CHARACTERISTIC SPECIFICATION TABLE

| Material name | Relative permeability $\mu'$<br>[at 13.56MHz]<br>typ. | Relative permeability $\mu''$<br>[at 13.56MHz]<br>typ. | Surface resistivity<br>( $\Omega$ /sq.)min | Thermal conductivity<br>(W/m · K) | Operating temperature range<br>(°C) |
|---------------|---|--|--|-----------------------------------|-------------------------------------|
| IFL04         | 45  | 1.3  | 10k  | 1.5                               | -40 to +85                          |

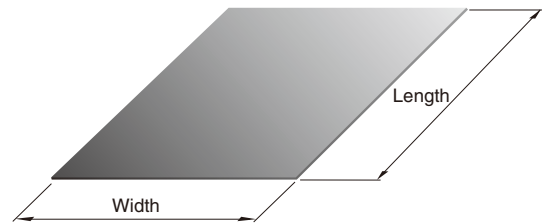
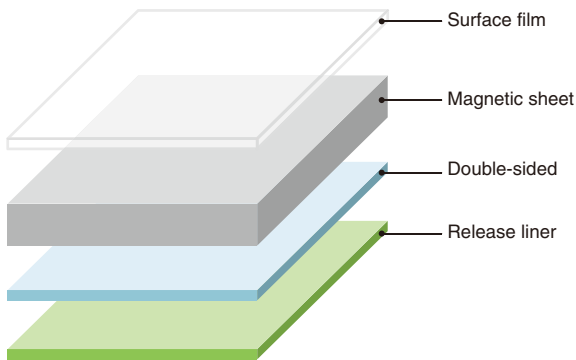
### □ RELATIVE PERMEABILITY



# IBF Series

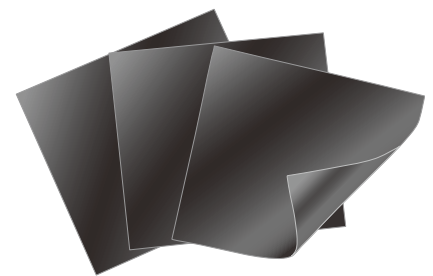
## MATERIAL CHARACTERISTIC

| IBF         | 15              | 100                              | D    |                             | D    |                                  | 125  | ×          | 125 |            |     |
|-------------|-----------------|----------------------------------|------|-----------------------------|------|----------------------------------|------|------------|-----|------------|-----|
| Series name | Material symbol | Magnetic material thickness (mm) |      | Surface film thickness (mm) |      | Double-sided tape thickness (mm) |      | Length (m) |     | Width (mm) |     |
|             | 15              | 100                              | 0.10 | D                           | 0.03 | D                                | 0.03 | 125        | 125 | 125        | 125 |
|             |                 | 180                              | 0.18 |                             |      |                                  |      |            |     |            |     |



## STANDARD PART NUMBER LIST

| Material | Standard dimensions (mm) | Thickness (mm) | Part number        |
|----------|--------------------------|----------------|--------------------|
| IBF15    | 125×125                  | 0.1            | IBF15-100DD125X125 |
|          |                          | 0.18           | IBF15-180DD125X125 |



# IBF Series

## MATERIAL CHARACTERISTIC

### MATERIAL CHARACTERISTIC SPECIFICATION TABLE

| Material name | Relative permeability $\mu'$<br>[at 13.56MHz]<br>typ. | Relative permeability $\mu''$<br>[at 13.56MHz]<br>typ. | Surface resistivity<br>( $\Omega$ /sq.)min | Thermal conductivity<br>(W/m · K) | Operating temperature range<br>(°C) |
|---------------|---|--|--|-----------------------------------|-------------------------------------|
| IBF15         | 150   | 5  | 1G   | —                                 | -40 to +85                          |

### RELATIVE PERMEABILITY

