

# Magnetic Sheets for RFID Flexield

Magnetic suppression sheet

IRL/IRJ/IFL series

Ferrite plate

IBF series

Issue date: July 2010

- All specifications are subject to change without notice.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

# Noise Suppression Sheets/Magnetic Sheets/ Radio Wave Absorbers Flexield

Conformity to RoHS Directive

## FOR RFID MAGNETIC SHEETS IRL, IRJ, IFL, IBF MATERIALS

TDK's Flexield is a highly flexible and shock resistant soft magnetic sheet material consisting of magnetic material and resin.

It is highly effective when used in reader/writers or attached to tags and metal components used in emerging RFID systems based on the 13.56MHz band. With an extensive lineup of products that deliver excellent permeability, Flexield allows designers to match impedance with ease and delivers excellent magnetic convergence.



### FEATURES

- They are flexible(not crack).
- They are suited for thin and compact devices.
- Available in a wide range of dimensions and shapes.
- Conforming to RoHS Directive.

### APPLICATIONS

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

### PRODUCT IDENTIFICATIONS

IRLG5	AB	H	20	x	10	x	0.25
(1)	(2)	(3)	(4)	(5)	(6)		

(1) Material name

(2) Double-sided tape symbol

No symbol: no double-sided tape used

A: double-sided tape (t=0.17)

AB: double-sided tape (t=0.03)

AT: double-sided tape (t=0.01)

(3) Product process symbol

(4) Length(20: 20mm)

(5) Width(10: 10mm)

(6) Thickness(0.25: 0.25mm)

### SPECIFICATIONS

#### MAGNETIC SUPPRESSION SHEET

Type (Features/Application)	High performance		Flame retardant High performance			Thick type		Thin type High performance		Thin type High permeability	
Material name	IRLG5		IRJ04			IRL02		IFL04		IFL12	
Operating temperature range (°C)	-40 to +85		-40 to +85			-40 to +85		-40 to +85		-40 to +85	
Initial permeability $\mu'$ typ.	50		40			25		45		125	
[at 13.56MHz] $\mu''$ typ.	0.9		1.0			0.4		1.3		50	
Resistivity( $\Omega$ /square) min.	10K		1M			1M		10K		100K	
Thermal conductivity (W/m • K)	1.5		1.5			1.4		1.5		1.5	
Standard sheet dimensions (mm)	300×200		300×200			200×200		300×200		300×200	
Standard sheet thickness (mm)	0.25	0.5	0.1	0.25	0.5	1	2	0.05	0.1	0.05	0.1
Standard sheet weight (g)	54	108	22	54	108	130	260	9	19	9	19
Standard adhesive tape layer thickness (mm)	0.03	0.03	0.01	0.03	0.03	0.17	0.17	0.01	0.01	0.01	0.01
Compatible with rolls	—		—			—		✓		✓	
Density (g/cm <sup>3</sup> )	3.6		3.6			3.2		3.1		3.1	
Flame retardant	—		UL94V-0			—		—		—	
Environment	RoHS directive Halogen-free		RoHS directive			RoHS directive Halogen-free		RoHS directive Halogen-free		RoHS directive Halogen-free	

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## FERRITE PLATE

Type (Features/Application)	High permeability Low dissipation	High permeability High suppression
Material name	IBF10	IBF20
Operating temperature range (°C)	-40 to +85	-40 to +85
Initial permeability*1 [at 13.56MHz]	$\mu'$ typ. 105	$\mu'$ typ. 210
Resistivity( $\Omega$ /square) min.*2	1G	1G
Standard sheet dimensions (mm)	115×115	115×115
Standard sheet thickness (mm)*3	0.16    0.24	0.16    0.24
Standard sheet weight (g)	7.9    13.3	7.9    13.3
Environment	RoHS directive	RoHS directive

\*1 Initial permeability is the value from the magnetic layer.

\*2 Surface resistivity is the value from the surface of the PET layer.

\*3 Thickness and weight include the surface film and double-sided tape.

Standard sheet thickness configuration	Dimensions in mm			
	IBF10		IBF20	
Type				
Surface film	0.03	0.03	0.03	0.03
Magnetic sheet	0.10	0.18	0.10	0.18
Double-sided tape	0.03	0.03	0.03	0.03

