

EMI Shielding Film (EMS-00-IC-600)

FPC Application

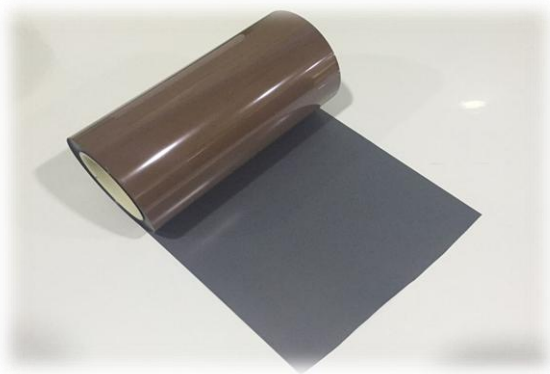


Description

Electromagnetic Noise Shielding Films consist of insulation layer with High conductive adhesive layer.

Currently, FPCs are being widely used in laptop computer, PDA, electronic scheduler, LCD, OLED, PDP and mobile equipment for wiring because of their high bend ability, high density in structure; additionally these FPCs require high magnetic noise shielding.

In these reasons, we developed high Flex, High Functional EMI Shield Film to meet customer needs.



< Fig 1 EMI Shielding Film >

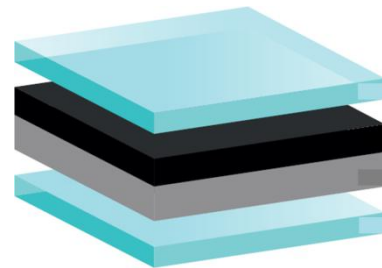
Main Features

- * High Shield effect (Low electric resistance)
- * Excellent gap filling performance on micro strip line width & high-step
- * Excellent bending (flexible) performance
- * Easy in Low Temp. Pre-working & Reworking

Application

EMI shield film which is made to shield noise can be applied to the Flat Panel Display and FPCB etc.

Construction



< Fig 2 EMI Shielding Film Construction >

Protect Film (Top)	Semi-matt Release Film
Insulation Layer	Modified Resin Based
ICA* Layer	Modified Resin Based (with metal filler)
Protect Film (Bottom)	Release PET

* ICA : Isotropic Conductive Adhesive

Processing

Press conditions for IC-600 is typically in the following ranges;

- ▶ Pre-fixing (预贴) : 150~160℃
- ▶ Hot press (传压) : 160℃ X 35kgf/cm² X 1hr
- ▶ Quick press(快压) : 180±10℃ X >100bar X 25sec/80sec
→baking(烘烤) 160℃ X 1hr

Press Lay-up



* Note : The Information above is a general guide only, IC-600 is applicable to standard lay-up which currently applied on the market

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■ Typical properties

Typical physical and electrical properties along with applicable test methods are shown in Table.

Properties		Unit	EMS-00-IC-600	Test Method	
Thickness	Insulation Layer	μm	8±3	Micrometer	
	Conductive Adhesive Layer	μm	8±3	Micrometer	
	Protect Layer	Top	μm	50±5	Micrometer
		Bottom	μm	75±5	Micrometer
	After Press	μm	17	Micrometer	
Peel strength	ICA-Coverlay PI side (With PI)	Kgf/10mm	>1.0	UTM (50mm/min speed, angle180)	
	Insulation side (With Semi-matt)	gf/25mm	≥25	UTM (300mm/min speed, angle180)	
	ICA-side (WithPET protect film)	gf/25mm	≥0.582	UTM (300mm/min speed, angle180)	
Surface Resistance (at ambient)		Ω/□	<5	ASTM D-257	
Volume Resistivity (at ambient)		Ω-cm	≤3	HIOKI 3244-60 (3cm, 2mm Φ)	
Shielding effect		dB	≥58	Network Analyzer (1GHz)	
Heat Resistance (Solder Floating)		Pass/NG	Pass	IPC-TM-652,Method 2.4.13 Test B	
Chemical Resistance		Pass/NG	Pass	5% NaOH, 5% H ₂ SO ₄ , IPA (Sonication at 50℃, 10min)	
MIT(0.38R, 175CPM, 135Degree, L/S100/100)		Times	>3,000	JIS C6471	
Slide(0.65R, 60CPM, 40Stroke, L/S100/100)		Times	>200,000	JIS C6471	
Conductivity in small Ground size		mm	Circle ≤0.5Ω	0.4mm	
			Square ≤0.5Ω	0.1 X 0.1mm	
Step Conductivity & appearance		μm	200	Quick press (3cm, 2mm Φ)	

* Note: The above values are just test results and do not serve as our guarantee.

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■ Storage Warning & Shelf Life

- Store it in low temperature & humidity (temp.: $5\pm 3^{\circ}\text{C}$ / humidity: $40\pm 10\%$) away from direct sunshine.
- Allow the refrigerated film with plastic wrap to stand at room temperature before using it. (By doing this, you can avoid deterioration from Dew condensation.
- Avoid treating products with bare hands. Put on the clean gloves while handling the products.
- Be careful not to drop the roll and keep it away from a shock.



< Fig 3. Refrigeration warehouse >



< Fig 4. Refrigeration warehouse >

■ Packing

- EMS-IC-600 supplied on 250mm or 500mm wide by 100m or 200m long rolls, on nominal 3in (76mm) cores. Narrow or other widths are also available by special order.

■ Using Warning

- Avoid treating products with bare hands during operation.
- During thermal processing, be careful not to contact the hot press machine.
- Please be careful not getting foreign substances on the adhesive layer, when pre-fixing Process.

■ Transportation

- Products are to be kept at low temperature & humidity (temp.: $5\pm 3^{\circ}\text{C}$ / humidity: $40\pm 10\%$) during transport. (Refrigerated courier service)

■ Warranty on Product Quality

- A manufacturer's warranty for EMS-IC-600 is given for three months on condition that product is kept in a refrigerator (temp.: $5\pm 3^{\circ}\text{C}$ / humidity: $40\pm 10\%$).

■ Others

- If there are any questions, additions, changes or abolition about this specification, both parties would negotiate each other.
- This product is mainly for FPCB, but we cannot guarantee and confirm all applications. Therefore when you use our product for your application, we are glad to have your advanced notice before using due to prevent malpractice and utilize its characteristic by referencing our technical information.,

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