

EMI Shielding Film[EMS-00-AP-300]

FPC Application



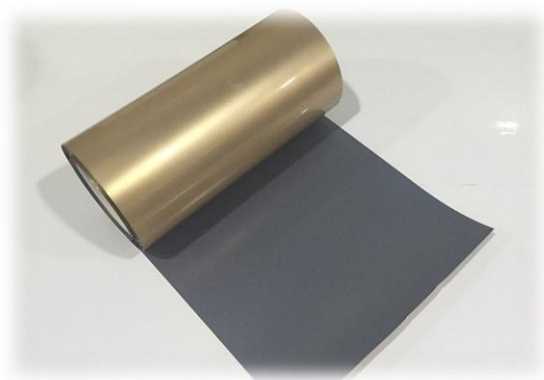
Description

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.

*If you need to use FPCB longer than existing length, we recommend AP-300(Original) to get better electric characteristics than AP-300(New)



<Fig 1 EMI Shielding Film >

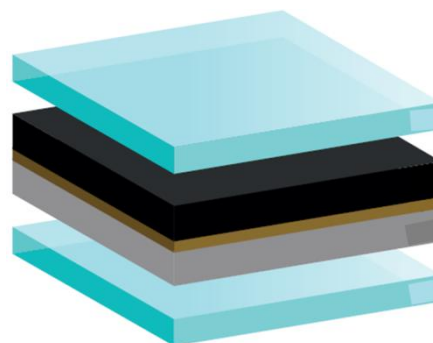
Main Features

- * Total thickness of 14μm
- * Cost-effectiveness No 1
- * Excellent dimensional stability
- * Excellent sliding performance & flexibility at wide range temperature
- * Excellent operability (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)	Matt or Semi-matt Release Film
Insulation Layer	Modified Resin Based
Metal Layer	Ag
ACA* Layer	Modified Resin Based (with metal filler)
Protect Film (Bottom)	Release PET

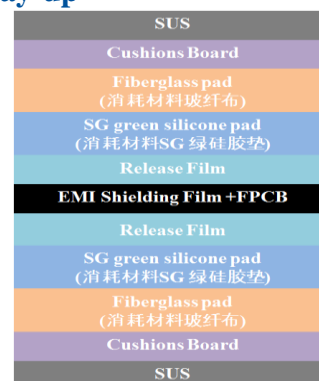
*ACA :Anisotropic Conductive Adhesive

Processing

Press conditions for AP-300(New)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, AP-300(New) 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-AP-300(LD)	Test Method	
Thickness	Insulation Layer	μm	8±2	Micrometer	
	Metel Layer	μm	0.2~0.3	Gauge meter	
	Conductive Adhesive Layer	μm	6±2	Micrometer	
	Protect Layer	Top	μm	50	Micrometer
		Bottom	μm	50±5	Micrometer
		After Press	μm	14	Micrometer
Peel strength	ACA-Coverlay PI side (With PI)	kgf/10mm	>1.0	UTM (50mm/min speed, angle180)	
	Insulation side (With Matt or Semi-matt)	gf/25mm	≥25	UTM (300mm/min speed, angle180)	
	ACA-side (With PET protect film)	gf/25mm	≥0.5	UTM (300mm/min speed, angle180)	
Surface Resistance (at ambient)		Ω/□	<0.5	ASTM D-257	
Volume Resistivity (at ambient)		Ω-cm	≤3	HIOKI 3244-60 (3cm, 2mm Φ)	
Shielding effect		dB	Min 45	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)	
Conductivity in small Ground size		Ω	Circle ≤2.0Ω	2π	
Step Conductivity & appearance		μm	Max 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-AP-300(New) 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-AP-300(New) 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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