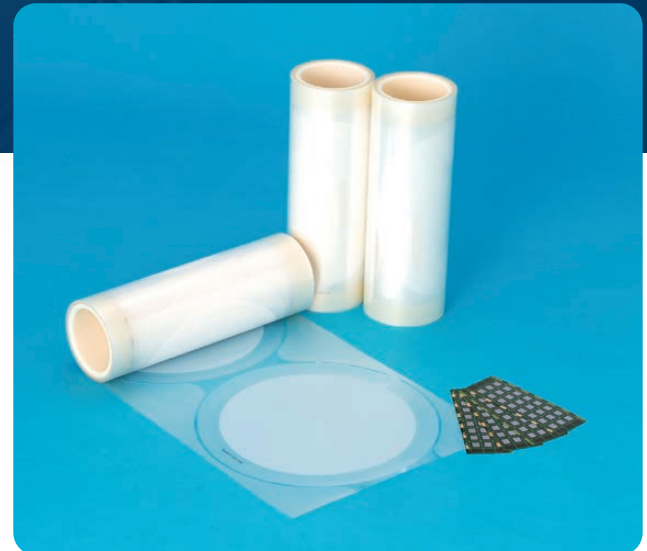


# FURUKAWA Die Attach Film

Furukawa's one-stop-manufacturing provide highly reliable and totally well-balanced DDF with original DAF and DC tape.



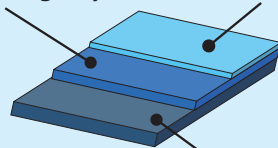
## Core Technology of AF Series

Original technology in AT & FUNCTIONAL PLASTICS DIVISION is development and production of tape for semiconductor field.

Based on those technologies such as sheet manufacturing, blending knowhow of high-polymer material, and adhesion control, original die attach film is newly released. Including dicing tape for die attach film, Furukawa electric provides well-balanced products as "AF Series".

### DDF Construction

Adhesive (Furukawa Original)      DAF (Furukawa Original)



Backing film (Furukawa Original)

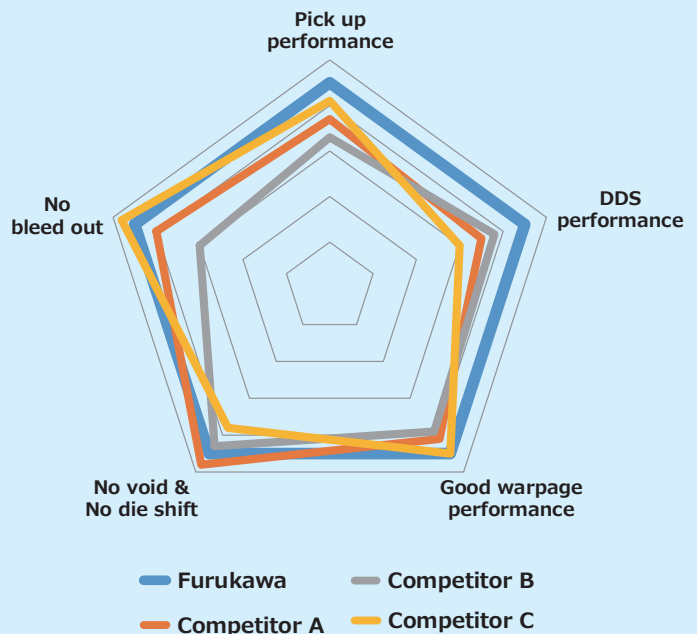
#### Furukawa original design

- Sheet manufacturing knowhow
- Blending knowhow of high-polymer material
- Adhesion control knowhow
- Original die attach film

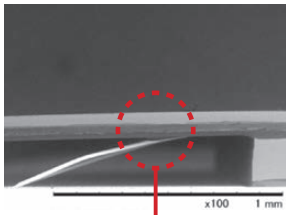


**Highly reliable and totally well-balanced DDF**

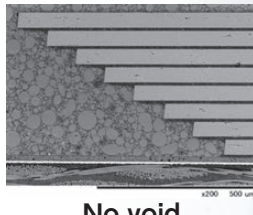
### Performance Balance Chart



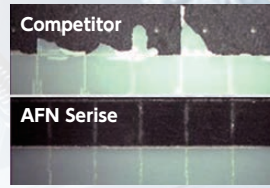
## Advantages



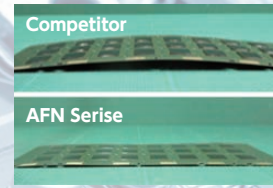
No bleed out



No void  
No die shift



Pick up  
performance



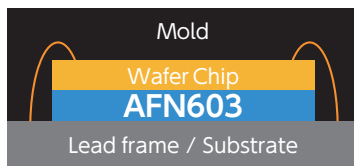
Good warpage  
performance



DDS  
performance

## Features

AFN603



Die to Substrate

AFN303



Die to Die

AFN601



Film on Wire (FOW)

## Properties

DAF Type		AFN603	AFN303	AFN601
Curing Condition*		150 deg.C, 60 min or 180 deg.C, 60 min	150 deg.C, 60 min	150 deg.C, 60 min or 120 deg.C, 60 min (Half Cure)
Ramp UP Time to Curing Temperature		30 min	30 min	30 min
DAF Thickness	μm	20 / 25 / 50	10	50 / 60 / 80
General DC Tape Type		UV type	UV type	UV type
DC Tape Thickness	μm	100	100	100
Recommended UV Dosage	mJ/cm <sup>2</sup>	200	200	200
CTE	alpha1	ppm/K	37	26
	alpha2	ppm/K	132	80
Tg (TMA)		deg.C	115	120
Meltling Viscosity	70 deg.C	Pa·s	37400	25000
	120 deg.C	Pa·s	2000	1350
Elastic Modulus	50 deg.C	MPa	2900	4500
	250 deg.C	MPa	56	100
Water Absorption, 85 deg.C, 85%, 100 h		wt%	0.8	0.8
Die Shear Strength 2×2 mm Si Die to Si Mirror Wafer	@ Room temperature	MPa	60	60
	@ 260 deg.C	MPa	12	12

\* When die attach void is happened, step curing (120 deg.C, 60 min + 150 deg.C, 60 min) is recommended

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