

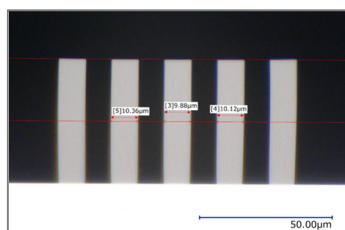
SU-8 3000CF-05A DFR, Photosensitive Permanent Epoxy Dry Film

MATERIAL DESCRIPTION

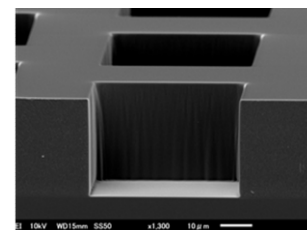
SU-8 3000CF-05A DFR is a photosensitive permanent negative tone dry film resist. Utilizing a low halogen epoxy resin and antimony-free formulation. SU-8 3000CF-05A DFR enables the fabrication of chemically and thermally stable structures. Such as support walls and capping layers for SAW & BAW Filter cavity packages, MEMS sensors and microfluidic devices.

KEY FEATURES

- Antimony-Free
- Low Halogen (Total Chlorine < 900 ppm)
- Excellent Resolution and Aspect Ratio (>3:1)
- Excellent Thermal Stability
- Low Process Temperature
- Low Water Absorption
- High Modulus (2.3Gpa @175°C)



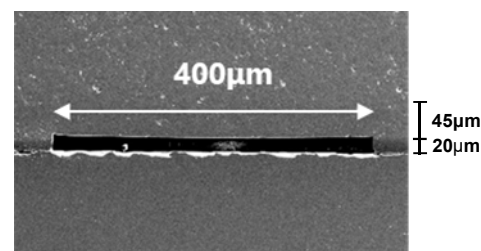
45µm thick, L/S=10µm/10µm



20µm thick, 50µm square hole

MATERIAL PROPERTIES

Property	Unit	Value
Glass Transition Temperature (DMA)	°C	344
Thermal Stability (5% wt. loss temp. in Air)	°C	390
Adhesion Strength (Shear strength on Si)	MPa	55
Young's Modulus (at 25°C)	GPa	2.9
Storage Modulus (at 30°C, DMA)	GPa	3.2
Storage Modulus (at 175°C, DMA)	GPa	2.3
Water Absorption (85°C/85% RH for 24 hr)	%	0.4

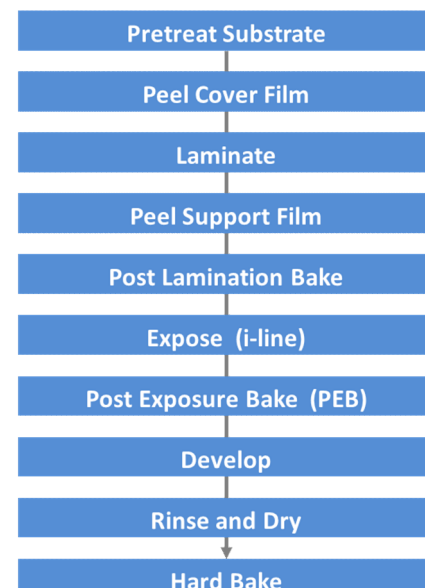


400 µm Width Cavity Structure.

Wall PROCESS GUIDELINES

Step	45µm Wall Layer
Lamination	DXL2 series, Teikoku Taping System
- Roll Temp.	40°C
- Stage Temp.	60°C
- Speed	5 mm/sec
- Pressure	600 kPa
Post Lamination Bake (on Hot-plate)	150°C 10min
Exposure	200 mJ/cm ² (@365nm) (To obtain vertical sidewalls we recommend the use of a long-pass Optical Filter. Eliminating <350nm UV radiation)
PEB (on Hot-Plate)	45 °C / 5min + 55°C / 5min + 95 °C / 10min
Development	Solvent Development : PGMEA 10min
Hard-Bake (in Oven)	60min @180°C

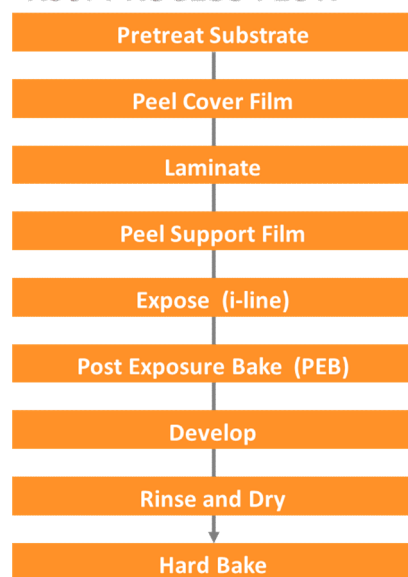
Wall PROCESS FLOW



Roof PROCESS GUIDELINES

Step	45µmRoof Layer
Lamination	DXL2 series, Teikoku Taping System
- Roll Temp.	50°C
- Stage Temp.	40°C
- Speed	10 mm/sec
- Pressure	100 kPa
Post Lamination Bake (on Hot-plate)	-
Exposure	200 mJ/cm ² (@365nm) (To obtain vertical sidewalls we recommend the use of a long-pass Optical Filter. Eliminating <350nm UV radiation)
PEB (on Hot-Plate)	45 °C / 10min + 55°C / 5min + 95 °C / 10min
Development	Solvent Development : PGMEA 10min
Hard-Bake (in Oven)	60min @180°C

Roof PROCESS FLOW



PRODUCT FORMAT

Available Resist Layer Thickness	: 10~45 µm
Resist Width	: 244 mm
Core Width	: 270 mm

SHELF LIFE

SU-8 3000CF-05A DFR should be stored in refrigerated conditions (<15 °C) in the original packaging. Shelf-life is 6 months under refrigerated conditions.

HANDLING PRECAUTIONS and DISPOSAL CONSIDERATIONS

Before using this product, consult the Safety Data Sheet (SDS) / Material Safety Data Sheet (MSDS) for details on the product hazards and handling precautions.

Dispose in accordance with all local, state, federal, government regulations. The material and its container must be disposed in a safe and legal manner. It is the user's responsibility to verify that treatment and disposal procedures comply with local regulations.

For further information on the use and performance of SU-8 3000CF-05A DFR, please contact your local Nippon Kayaku group representative.

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