Printed Circuit Board Label

FLEXcon® THERMLfilm® HT™ PI2W50G, PI2W150P, PI2W50K

For Surface Mount Leaded and Non-Leaded Reflow

Printability and heat resistance are the most critical factors in choosing materials for printed circuit board (PCB) labeling. These labels contain crucial information for the production process which, if lost, result in disruptions that impact profitability. To be sure the labels on your printed circuit boards can withstand the fluctuating temperatures, abrasion and chemicals inherent in the PCB manufacturing process and end-uses, look to FLEXcon's THERMLfilm® HT™ series of high-temperature films.

FLEXcon's THERMLfilm® HT™ polyimide films are designed specifically for high-density barcode, data matrix code and alphanumeric identification of printed circuit boards. All products are thermal transfer printable. FLEXcon's super smooth topcoat allows for printability at 600 DPI for superior print quality. FLEXcon® THERMLfilm® HT™ polyimide films, offered in 1 and 2 mils on a variety of liners, are sure to meet your specific application and dispensing requirements. All products are available in the U.S., Europe and Asia for consistent supply worldwide. Look to FLEXcon® THERMLfilm® HT™ to meet the challenging requirements of PCB labeling.

For more information on FLEXcon's pressure-sensitive film solutions for printed circuit board labeling, contact your local Sales Representative or, in the United States/Canada/Mexico, our Product Identification Business Team at +1 (508) 885-8300; in Europe +31 294 491 800, europeinfo@FLEXcon.com; and in Asia +852 2350 2100, asiainfo@FLEXcon.com.

Products: FLEXcon® THERMLfilm® HT™ PI2W50G, PI2W150P, PI2W50K

BENEFITS:

- 2 mil polyimide film withstands intermittent heat up to 750°F (399°C) and printed circuit board cleaning environments
- Tested and approved for leaded and lead-free reflow (top and bottom)
- Super smooth topcoat allows for printability with 600 DPI for high-density barcodes, such as data matrix codes, with consistent ANSI scannability
- Topcoat has static dissipating properties that minimize the risk of print voids
- Thermal transfer printable via a wide variety of UL recognized ribbons (see next page)
- Permanent pressure-sensitive adhesive bonds well to standard PCBs
- Low outgassing of adhesive
- Available on a variety of liners to meet your specific application and dispensing requirements (50 lb. glassine, 1.5 mil polyester, 50 lb. kraft)
- Halogen free; REACH and RoHS compliant
- UL recognized under UL 969 - UL File No. PGJI2.MH16635 Printing Materials - Component
- PI2W50G available in pre-slit rolls

SPECIAL CONSIDERATIONS:

- Not suitable for wave solder; please see THERMLfilm® HT™ 9000 Series for wave solder endurance
- All surfaces should be clean, dry and free of any surface contamination. IPA is the recommended cleaning solution
- We recommend exposing printed labels to high heat (302°F/150°C) prior to performance testing
- The printed surface should not be touched while hot. The resin TTR will be soft and will smudge or remove
- Test data is based on Laboratory test structure. Actual application testing should be done to confirm suitability for application

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PRODUCT DATA		VALUE		TEST METHOD
Physical Properties:				
Thickness (mils[microns])	Film (+/- 10%): Coating (+/- 10%): Adhesive (+/- 10%): Liner - 50 Glassine (+/- 10%): Liner - 150 Polyester (+/- 5%): Liner - Spec 50K-8 (+/- 10%):	2.0 (50) 0.6 (15) 1.45 (36) 2.7 (69) 1.4 (36) 3.1 (79)		ASTM D 3652 (Modified for use with non-tape products)
Adhesion Properties:				
Surface	Dwell Time	Average Oz/in	(N/m)	
Aluminum	15 mins. 24 hrs.	55 77	(605) (847)	ASTM D 903
Stainless Steel	15 mins. 24 hrs.	40 54	(440) (594)	
Service Temperature Range:	-40°F to 356°F (-40°C to 180°C) Intermittent 5 min.	 Up to 750°F (399°C) Up to 500°F (260°C)		FLEXcon M-29 applied to panel
Expected Shear:	Room Temp (hours)	50		ASTM D 3654 Method A a. 1 hr. dwell b. 1 sq. in. surface c. 4 lb. load
Durability:		ANSI Scannability		
Leaded Reflow	Up to 7 washes	100%		Testing conducted at ITW Speedline Technologies* using VIGON®** A 201
Non-leaded Reflow	Up to 7 washes	100%		
No Reflow	Up to 7 washes	100%		
Chemical Resistance:	Test Fluid	ANSI Scannability		
	1 part IPA, 3 parts Mineral Spirits 1,1,1 Trichloroethane Terpene Defluxer	100% Solvent Deleted per Notice 12 100%		MIL-STD-202G, Notice 12, Method 215K
	1 part IPA, 3 parts Mineral Spirits 1,1,1 Trichloroethane Terpene Defluxer	100% Solvent Deleted per Notice 12 100%		MIL-STD-883E, Notice 4, Method 2015.13

Storage Stability: Two years when stored at 70°F (21°C) and 50% relative humidity
Minimum Application Temperature: Room temperature (65°F/18°C) is recommended
UL/cUL Recognized Ribbons: AXR 8, AXR 800, K504, 5100
UL Recognized Ribbons: AXR 7+, R510, TR4070, 7993, B324, B813, SP-330, SP-990, B110C, R335A, R335C
UL approved: Under UL 969 - UL File No. PGJI2.MH16635 Printing Materials - Component
Compliance and Content:

RoHS - Restriction of Hazardous Substances (EU Directives 2002/95/EC and 2003/11/EC):	None of the substances named in these directives are knowingly used or intentionally added during the manufacturing process
REACH - Registration, Evaluation and Authorization of Chemicals	None of the substances currently on the Candidate List are knowingly used or intentionally added during the manufacturing process
SVHC - Substances of Very High Concern (EU Directive 1907/2006/EC):	
Halogen Free IEC 61249-2-21:	Halogens are not knowingly used or intentionally added during the manufacturing process

*Reflow testing on ELECTROVERT VectraElite™; wave solder testing on ELECTROVERT OmniMax™ 7; wash testing on ELECTROVERT Aquastorm® 200: Aquastorm, VectraElite and OmniMax are registered trademarks of Speedline Technologies, Inc., an ITW Company.
**VIGON is a registered trademark of ZESTRON Corporation.

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