XF-588

Thermal Transfer Printable Polyimide

WHITE

Description: POLYONICS XF-588 is a 2 mil (50µ) polyimide film with a high-temperature permanent pressure sensitive 1 mil (25 µ) acrylic adhesive and a high opacity, white topcoat specifically designed for barcode or alphanumeric identification of printed circuit boards, or related electronic components using thermal transfer printing.

Properties: The XF-588 topcoat, in combination with the appropriate thermal transfer ribbon, passes the requirements of **MIL-STD-202G, Notice 12, Method 215K** and **MIL-STD-883E, Notice 4, Method 2015.13**. The print resists smearing, even when the board and label are directly removed from a reflow or wave solder environment. Preheating the labeled product can further enhance print permanence in the case of extreme solvent and/or abrasion exposure, although this is not typically required for board processing applications.

Applications:

- POLYONICS XF-588 is specifically designed for high-temperature-lead-free solder applications.
- It is the ideal label to withstand surface mount board processes, on either the top or bottom side of the board. It can also be used on the top side of the board in mixed processes, and is recommended for the bottom side that is directly exposed to the wave solder environment.
- XF-588 is particularly useful in manufacturing processes where dimensional stability of the label is critical.
- IC labeling for work in process, permanent ID & warranty labeling
- Product ID, asset tracking
- Anywhere a label will be exposed to extreme temperatures
- Designed to work in automatic label application equipment

Special Considerations:

- The XF-588 is a 2 mil material with a 1 mil adhesive to create a slightly thinner label.
- The surface that you want to label should be clean, dry and free of any surface contamination, such as dust, oil or rust. Isopropyl alcohol would be a recommend solvent to clean the surface.
- When you apply the label, you must use firm pressure to increase the physical contact of the adhesive with the surface of the product.
- Pressure sensitive adhesives will provide stronger bonds to a warm surface, as compared to a colder one. The adhesive will 'flow' more readily, increasing the surface area and increasing the adhesion peel strength.
- The XF-588 top coat & print should not be contacted while exposed to elevated temperature.
- All values shown are averages and should not be used for specification purposes. Adhesion and tack values have a 15% tolerance allotted to the above values stated.
- Test data and test results contained in this document are for general information only and shall not be relied upon by POLYONICS customers for designs and specifications, or be relied on as meeting specified performance criteria.
- Customers desiring to develop specifications or performance criteria for specific product applications should contact Polyonics for further information

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POLYONICS THERMOGARD®

XF-588

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Technical Data

Properties	Test Methods	Average Results	
		USA Units	SI Units
Thickness	ASTM D1000		
-Face sheet		0.0024 inch	0.061 mm
-Adhesive		0.0010 inch	0.025 mm
-Total		0.0034 inch	0.086 mm
Adhesion	Polyonics 80313		
-Stainless Steel	20 minute dwell	≥27 oz/in	27N/100 mm
	24 hour dwell	≥30 oz/in	33N/100 mm
Loop Tack	Polyonics 80155		
		≥ 1000 g/in	
Temperature Rating:	-40 to 1000°F (-40 to 537°C)		
Shelf Life	**1 year below 80º (27ºC) and 60% R.H.**		
UL File #	PGJI2.MH19503		
UL tested ribbons	Ricoh B110CR, C, Armor AXR7+, 8, Sony 4070, JPP1, Union Chemicar US300, DNP R510		

Durability Testing

Properties	Test Method	Test Environment	PCS[1]	Read Rate[2]
Heat / Chemical Resistance	Polyonics 80386	Control 70°C, 5 min.	99%	100%
		Kyzen Corp. Aquanox SSA 30% aqueous, 70ºC 5 min.	100%	99%
		Re-Entry KNI 2000 Terpene 70ºC 5 minutes	98%	100%
		Alpha Metals Inc. EC-7R Terpene 70ºC, 5 minutes	98%	100%
		Alpha Metals Inc. 2110 Saponifier 10% aqueous,70º 5 min.		
		Isopropanol 99%,70ºC, 5 minutes	99%	100%
		Kyzen XJN+, 30% 70°C, 5min.	99%	100%

Chemical Testing

Properties	Test Method	Test Fluid	Results
Chemical Resistance	Mil-STD-202G, Notice 12, Method 215K Mil-STD-883E, Notice 4, Method 2015.13		
		Solvent A -1 part IPA, 3 parts Mineral Spirits	No Visible effect
		Solvent B - 1,1,1Trichloroethane	Solvent deleted Per notice 12
		Solvent C-Terpene Defluxer	No visible effect
		Solvent D-Saponifier	No visible effect

Polyonics Material Compliance

RoHS- Restriction of Hazardous Substances (EU Directive 2002/95/EC)	Limits set forth in Directive 2005/618/EC amending Directive 2002/95/EC
REACH- Registration Evaluation and Authorization of Chemicals (EU Directive 1907/2006/EC)	Limits set forth in Directive 1907/2006/EC Article 7 (2)
Halogens- Restriction use of Halogen (IEC 61249-2-21)	Limits set forth in International Electrochemical Commission

Key for Tables on page 2

- All SI units are mathematically derived from U.S. conventional units.
- Labels printed with recommended thermal transfer ribbon. Labels printed with 6.7 mil X dimension bars at 2:5 ratio. labels exposed to indicated environments
- [1]PCS - Print Contrast Signal. PCS determined with Quick Check 650, 0.005" aperture, 660 nm wave length.
- Quick Check 650 manufactured by : Photographic Sciences Corp.
- [2] Read rate determined using PSC 850 laser scanner.

Trademarks:
XJN+ & Aquanox SSA-™ is a trademark of Kyzen Corporation..
EC-7R™ is a trademark of Petroferm Inc.
RE-ENTRY™ is a registered trademark of Environsolv Inc.

References:
ASTM: American Society for Testing and Materials (U.S.A.)
SI: International Systems of Units.

SJ/T11364-2006 & EU202/95/EC
2003/11/EC
76/69/EEC
UL 969

WARRANTY-LIMITATION

Polyonics' products are sold with the understanding that the buyer will test them in actual use and determine for him/herself their adaptability to his/her intended uses. Polyonics warrants to the buyer that its products are free from defects in material and workmanship, but limits its obligation under this warranty to replacement of the products shown to Polyonics' satisfaction to have been defective, provided that the Buyer has complied with the handling, storage and shelf life requirements as specified by Polyonics in applicable materials specifications.

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