

# CONFLUX LCD Heaters, PTC Polymer discs, and ZPZ Foils



Conflux develops, manufactures and markets polymeric materials for intelligent heating applications. Using new, unique and patented technologies, Conflux have designed materials which deliver efficient heating when its needed, where its needed. Innovative conductive polymer technology combined with a revolutionary design provide pioneering technological functionality.

Displays

Conflux

NEW SUPPLIER

NEW SUPPLIER

NEW SUPPLIER

NEW SUPPLIER

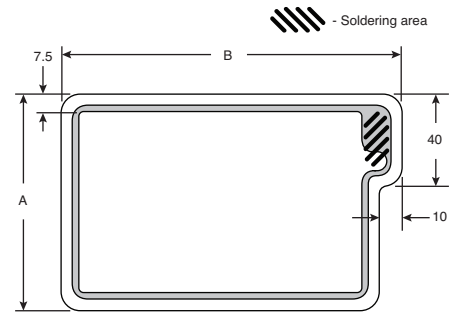
## ZPZ FOIL

### Features:

- Pointwise self-regulation - Each point on the ZPZ foil surface automatically regulates its heating power to accommodate for varying thermal loads and ambient temperatures. Efficient cooling and/or low ambient temperature gives high power and vice versa.
- Pointwise temperature limiting - Each point on the ZPZ foil surface has a built-in temperature limiter, inherent to the material itself, which ensures that the ZPZ foil will never overheat.
- 100% surface coverage - Heat is generated on the entire surface and the power density can therefore be kept at a minimum level.
- Functionality independent of form - The surface temperature and power density are independent of area, allowing for a simple and cost effective product design process.
- Rapid warm-up - High initial heating power gives a rapid warm-up.

### Technical Specifications:

- Voltage: up to 12/48 V AC/DC depending on configuration
- Power tolerance: ±15%
- Bulk thickness: 0.28mm (12V), 0.35mm (48V)
- Overall heat transfer coefficient: 11 W/m<sup>2</sup> K
- Connection: Prepared for soldering
- Encapsulation: PET/PE
- Operational, ambient temperature: -40 to +100C
- Maximum applied pressure: up to 2 kg/cm<sup>2</sup>
- Storage temperature: -60 to +60C
- RoHS compliant
- Designed for flat surfaces. Do not bend



dtot	Bulk thickness of ZPZ foil and encapsulation
P-20	Equilibrium power at Vmax(DC), minimal cooling and an ambient temperature of -20°C. Tolerance ±15%.
P+22	Equilibrium power at Vmax(DC), minimal cooling and an ambient temperature of +22°C. Tolerance ±15%.
ti	Average inrush current during 0.4s, at Vmax(DC), minimal cooling and an ambient temperature of +22°C. Tolerance ±20%.



RoHS Compliant

For quantities of 50 and up, call for quote.

MOUSER STOCK NO.	Conflux Part No.	A (mm)	B (mm)	dtot (mm)	Vmax (V)	P-20 (W)	P+22 (W)	li (A)	Price Each			
									1	5	10	25
730-HF-30-1001	HF-30-1001	62.5	80	0.28	12	7	4	3	23.45	18.76	17.05	15.50
730-HF-30-1002	HF-30-1002	80	125	0.28	12	13	6	7	27.68	22.14	20.13	18.30
730-HF-30-1003	HF-30-1003	140	140	0.28	12	24	10	12	37.51	30.01	27.28	24.80
730-HF-30-1004	HF-30-1004	140	280	0.28	12	44	20	17	57.78	46.22	42.02	38.20
730-HF-30-1005	HF-30-1005	62.5	80	0.35	48	3	1	0.1	23.45	18.76	17.05	15.50
730-HF-30-1006	HF-30-1006	80	125	0.35	48	7	2	0.1	27.68	22.14	20.13	18.30
730-HF-30-1007	HF-30-1007	140	140	0.35	48	12	3	0.2	37.51	30.01	27.28	24.80
730-HF-30-1008	HF-30-1008	140	280	0.35	48	22	6	0.4	57.78	46.22	42.02	38.20
730-HF-30-1009	HF-30-1009	62.5	80	0.35	48	8	4	5	26.93	21.54	19.58	17.80
730-HF-30-1010	HF-30-1010	80	125	0.35	48	12	6	10	32.36	25.89	23.54	21.40
730-HF-30-1011	HF-30-1011	140	140	0.35	48	24	11	17	43.11	34.49	31.35	28.50
730-HF-30-1012	HF-30-1012	140	280	0.35	48	49	20	33	67.46	53.97	49.06	44.60

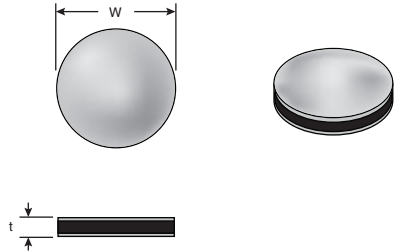
## POLYMER PTC DISCS

Conflux PTC polymer discs are constructed from Conflux ZPZ foil. The ZPZ foil is a patented, thin, self-regulating heating element based on the intelligent SIP compound and ZPZ design. The ZPZ foil consists of three layers; two sheets of copper separated by a conductive polymeric compound (SIP).

The discs are not suited for soldering, preferable contacting is conductive glue or clamping. When assembling, punch holes of the same size as the discs in an electrically isolating sheet and clamp the discs and the isolation between two conductive layers.

### Features:

- Low cost polymer discs for heating
- Self-regulating and temperature limiting
- Energy optimizing
- Available in a broad range of temperatures
- Ultra thin
- AC or DC
- High power density
- Rapid warm-up
- Suitable for clamp contacting
- Custom configurations available
- RoHS compliant



PI	Initial power per disc at Vmax(DC) at an ambient temperature of +22°C. Tolerance ±20%.
Peq	Equilibrium power per disc at Vmax(DC), minimal cooling and an ambient temperature of +22°C. Tolerance ±20%.
Teq	Equilibrium temperature on aluminum plate at an ambient temperature of +22°C. Tolerance ±20%.



RoHS Compliant

For quantities of 500 and up, call for quote.

MOUSER STOCK NO.	Conflux Part No.	Vmax (V)	Dimensions (mm)		T eq (C)	P eq (W)	P i (W)	Price Each			
			ø	t				1	10	50	100
730-HF-20-1001	HF-20-1001	12	16	0.2	30	0.2	0.3	2.45	1.96	1.78	1.62
730-HF-20-1002	HF-20-1002	12	16	0.2	40	0.8	1	2.45	1.96	1.78	1.62
730-HF-20-1003	HF-20-1003	24	16	0.2	35	0.5	1	2.45	1.96	1.78	1.62
730-HF-20-1004	HF-20-1004	24	16	0.2	55	1.5	5	2.45	1.96	1.78	1.62
730-HF-20-1005	HF-20-1005	48	16	0.5	40	1	2	2.45	1.96	1.78	1.62
730-HF-20-1006	HF-20-1006	48	16	0.5	80	3.5	20	2.45	1.96	1.78	1.62

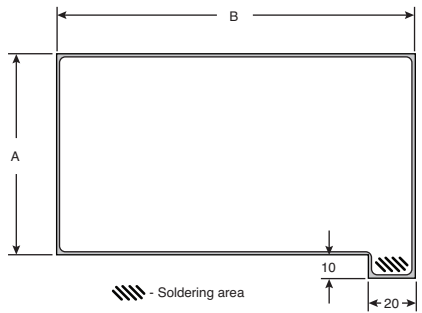
## LCD HEATERS

When using a Liquid Crystal Display it is very important to identify the range of its environmental temperature. The operating temperature of a standard display is above -10C and many displays need even warmer conditions. To ensure the function of the display in cold surroundings it needs external heating. Typical and critical applications are all types of outdoor mobile systems powered by batteries. In these applications the ZPZ foil will optimize the power consumption and save energy compared to traditional heaters.

Standard sizes: 3.5"(4:3) and 7"(16:9)  
Easy to assemble - comes with adhesive  
Voltage up to 12V

### Technical Specifications:

- Pointwise self-regulation
  - High power for optimal performance at low temperatures
  - Low power and moderate heating for energy savings in warmer environments
- Pointwise temperature limiting
  - No regulatory circuitry needed
- Rapid Warm-up
  - High initial heating power gives a rapid warm-up
- 100% surface coverage
  - Smoother temperature distribution
  - Low power density
- Functionality independent of form
  - The surface temperature and power density are independent of area.
  - High design flexibility



dtot	Bulk thickness of ZPZ foil and encapsulation
P-20	Equilibrium power at Vmax(DC), minimal cooling and an ambient temperature of -20°C. Tolerance ±15%.
P+22	Equilibrium power at Vmax(DC), minimal cooling and an ambient temperature of +22°C. Tolerance ±15%.
PI	Initial power at Vmax(DC), minimal cooling and an ambient temperature +22°C. Tolerance ±20%.



RoHS Compliant

For quantities of 50 and up, call for quote.

MOUSER STOCK NO.	Conflux Part No.	A (mm)	B (mm)	dtot (mm)	Vmax (V)	P-20 (W)	P+22 (W)	li (A)	Price Each			
									1	5	10	25
730-HF-30-1015	HF-30-1015	87	155	0.28	12	10	3.5	10	39.63	31.70	28.82	26.20
730-HF-30-1016	HF-30-1016	53	71	0.28	12	4	1.5	4	34.94	27.95	25.41	23.10

