PTC Heat Conductors/Convection Heater

Taiwan KLC's PTC Heat Conductors comes in various sizes and mounting options for ease of installation. Utilizing PTC's self-regulating characteristics, PTC Heat Conductors and Natural Convection Heaters are a safe and energy-saving choice for your product design. Some of its typical applications includes, PC mother board heating, steam ironing, moisture control, frost protection and any medium to low heating products. PTC convection heaters (LCH-H~K series) comes with aluminum extrusion fins allowing effective heat transfer into ambient air without the use of fan. Yet, types LCH-I and K can also be used as air heaters, they are designed to allow fans to be installed at the end of these heaters.

Features

- EMF-free, passes EMI, EMC tests
- High heating efficiency
- Low electricity consumption
- Very high reliability, impossible to overheat
- Very low to no noise level (compared with fan heater)
- Available in wide voltage range (12V~500V)
- High reliability with self-regulating characteristic
- Does not burn when in contact with paper, matches or clothes
- Heating power(W) and self-regulating function is in correlation to the ambient environment (temperature, air flow, air volume, heat dissipation)
- Most suitable for heating, heat retaining and constant temperature maintaining, with almost unlimited applications!

Our NEW ***Multi-Stage Heating PTC Heat Conductor*** provides higher flexibility in temperature control, by allowing two or three temperature settings in a single heating unit. Multistage heating unit can be designed into all LCH types (LCH-A to LCH-I) PTC heat conductors. For more information on this compact multi-stage heater, please read the "Multi-Stage Heating PTC Heat Conductor" section on page 16.

Patents

- US
- Taiwan
- China
- France
- Germany
- Britain

Specifications

Voltage : Both AC/DC available. Please refer to Part Numbering for voltage ranges.

Power : 2W~1500W

Safety : cUL

Typical Applications

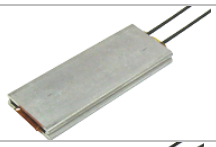
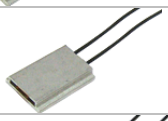
DC/AC – Can be used on PC Mother Board protection, help sustain constant temperature under deficient condition to protect electronic elements from malfunction. Also suitable for medical assistance, beauty treatment, stream ironing, moisture control, electronic heating, health treatment, air purifier etc. for all medium to low heating products.

CUSTOM SPECIFICATIONS

Custom specifications can be designed according to customer's requirements.

The PTC heat output can be regulated by the airflow applied in typical applications of heat generation. The higher the airflow (heat dissipation), the higher the heat output.

PTC Heat Conductor Types

PTC Heat Conductor Types				
Types	**Dimension W x T x L (mm)**	**Aluminum Tubes**	**Wing/Fin (Heater Type)**	**Photo**
LCH - A	A) 15.3W x 2.8H x L L(mm) : 21,36,51,67,82,96,112,128…300 B) 21.5W x 2.8H x L L(mm): 27,49,70,92,113,135,156…300 C) 24W x 2.8H x L L(mm): 30,54,78,102,126,150,174…300	N/A	N/A (Heat Conductor)	
LCH - B	20mm x 5.2mm x L L(mm) 32(34),62,84,106,128,150,172,194…300 :	Y	N/A (Heat Conductor)	
LCH - C	30mm x 7mm x L L(mm) 32(34),62,84,106,128,150,172,194…300 :	Y	N/A (Heat Conductor)	
LCH – D	25mm x 6.5mm x L L(mm) 32(34),62,84,106,128,150,172,194…300 :	Y	WING (Heat Conductor)	
LCH - E	30mm x 6.5mm x L L(mm) 32(34),62,84,106,128,150,172,194…300 :	Y	WING (Heat Conductor)	
LCH - F	40mm x 6.5mm x L L(mm) 32(34),62,84,106,128,150,172,194…300 :	Y	WING (Heat Conductor)	
LCH - G	20~40mm x 3~8mm x L L(mm) : 30~300	Y	Customize	Customize
LCH - H	39.5mm x 19.5mm x L L(mm) 32(34),62,84,106,128,150,172,194…300 :	Y	Single Sided Fin (Convection Heater)	
LCH - I	A) 55mm x28mm x L L(mm) 32(34),62,84,106,128,150,172…300 : B) 70mm x 28.5mm x L L(mm) 32(34),62,84,106,128,150,172…300 :	Y	Double Sided Fin (Convection Heater / Air Heater)	
LCH - J	20~100mm x 6.5~100mm x L L(mm) : 30~300	Y	Single Sided Fin (Convection Heater)	Customize
LCH - K	20~100mm x 6.5~100mm x L L(mm) : 30~300	Y	Double Sided Fin (Convection Heater / Air Heater)	Customize

Custom Specifications

- Power Range : 2W ~ 1500W
- Surface Temperature : 60°C ~ 240°C
- Voltage Range : 2V~500V AC/DC
- Standard Lead Wire : 22AWG 210mm

KLC Precision and Wellness

PTC Heater Numbering System

cUL File No. E31621

Example:

Model:	LCH-E type
Voltage:	220V
Length:	34mm
Max Power:	120W
Surface Temp:	220℃
Wire Length:	Standard (210mm)

LCH - E 2 1 012 - 220 - 210

MODEL TYPE (mm)
(W x T x L)

- **A**: 15.3^{W} or 24^{W} x 2.8^{T} x L
- **B**: 20^{W} x 4.8^{T} x L
- **C**: 30^{W} x 7.0^{T} x L
- **D**: 25^{W} x 6.5^{T} x L
- **E**: 30^{W} x 6.5^{T} x L
- **F**: 40^{W} x 6.5^{T} x L
- **G**: 20~40^{W} x 3~8^{T} x L (Customize)
- **H**: 39.5^{W} x 19.5^{T} x L
- **I** : 55^{W} or 70^{W} x 56.6^{T} x L
- **J**: 20~100^{W} x 6.5~100^{T} x L (Customize Single Fin Type)
- **K**: 20~100^{W} x 6.5~100^{T} x L (Customize Double Fin Type)
- **(A~K)S**: size as per selected model (Multi-Stage heating)

VOLTAGE(V)*
(Rated Voltage)

- **1**: 110V
- **2**: 220V
- **3**: 300V
- **4**: 400V
- **5**: 500V
- **01**: 12V
- **02**: 24V
- **04**: 48V
- **07**: 72V
- **08**: 80V

LENGTH (L)^
(Tube Length)

- **1**: 34mm
- **2**: 62mm
- **3**: 84mm
- **4**: 106mm
- **5**: 128mm
- **6**: 150mm
- **7**: 172mm
- **8**: 194mm

MAX POWER(W)#
(Reference Only)

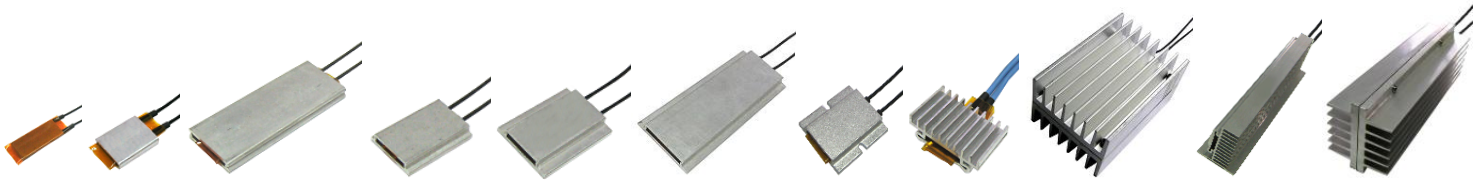
- **012**: 120W
- **025**: 250W
- **037**: 370W
- **050**: 500W
- **062**: 620W
- **075**: 750W
- **087**: 870W
- **100**: 1000W

SURFACE TEMP.(℃)**
(Reference Only)

- **240**: 240℃
- **220**: 220℃
- **200**: 200℃
- **180**: 180℃
- **150**: 150℃
- **120**: 120℃
- **90**: 90℃
- **60**: 60℃

WIRE LENGTH^^(mm)
(Optional)

eg. **210** = wire length 210mm



Important Notes on Part Numbering

Notes on Part Numbering

1. Voltage:

Select the closest voltage from the VOLTAGE list that is closest (within ±20% range) to your required voltage.

For example, use 2 if the required voltage is 240V (240V is within ±20% of 220V)

2. Tube Length:

Tube length can be customized for large quantities.

The Tube Length does not apply to LCH-A type. For LCH-A type, enter the number of PTC chips instead.

3. Wattage (Power):

The wattage (power) listed under MAX. POWER is based on PTC with 240℃ surface temperature (measured under the most effective heat transmission condition). The actual wattage (power) varies according to the contact material, heat sink, heat dissipation area, ambient temperature, airflow and product design and application. Due to the above variation, the actual wattage (power) is usually 5%~80% of the MAX. POWER.

The power(wattage) of PTC heat conductor increases with the heat dissipation rate. When heat is retained under the condition with no airflow (low heat dissipation), the surface temperature of the PTC conductor will reach curie temperature (Ct), the power(W) will then decrease dramatically. On the other hand, when the heat dissipation rate is high (under the condition of low ambient temperature, underwater or large airflow), this will cause the surface temperature of PTC heat conductor to decrease, the power of PTC heat conductor will then increase to regulate the temperature.

4. Surface Temperature:

The Surface Temperature is the surface temperature of the aluminum tubes. Please refer to the table below for the surface temperature available for each LCH type models.

Surface Temp. (℃)	Suitable Models	Suitable Voltages (V)
240℃	LCH-A to LCH-K LCH-A	AC100~240V DC5~80V
220℃	LCH-A to LCH-K LCH-B to LCH-K	AC100~500V DC5~80V
200℃	LCH-A to LCH-K LCH-A	AC100~240V DC5~12V
180℃	LCH-A to LCH-K LCH-B to LCH-K	AC100~240V DC5~12V
150℃	LCH-A to LCH-K LCH-H & LCH-K	AC100~240V DC5~24V
120℃	LCH-A to LCH-K	AC100~240V
90℃	LCH-A to LCH-K	AC100~240V
60℃	LCH-G to LCH-K	AC100~240V

5. Wire Length:

The standard wire length is 210mm, do not need to specify wire length if using standard length. It is recommended to use standard wire length during trial testing for faster delivery time.

Calculation of Relative Power for other Surface Temperatures:

The listed MAX. POWER is for PTC Heat Conductors with surface temperature of 240℃ . If the required surface temperature is 120℃, with ambient temperature of 20℃ the relative power of the MAX. POWER can be calculated using the formula below:

Temperature Rise (240℃) = 240℃ – ambient temperature = 240℃ – 20℃ = 220℃

Temperature Rise (120℃) = 120℃ – ambient temperature = 120℃ – 20℃ = 100℃

Relative Power = MAX. POWER x Temperature Rise (120℃) / Temperature Rise (240℃)

= 120W x 100℃ / 220℃ = 54.5W

Relative Power is **approximately 54.5W**

Notes on PTC Air Heater Specifications Tables

- Models with "◎" symbol in the *Specification* table are **standard models**. The delivery time for these models is shorter, and more economical.
- **Customized** wattage, length and specifications can also be designed for large quantity.
- The **Max. Power(W)** in the *Specifications* table is based on PTC Heat Conductor with surface temperature of 240, under the most effective heat transmission condition (low ambient temperature, underwater, large air flow etc.).
- The **Min. Power(W)** of PTC Heat Conductor in the *Specifications* table is measured in a standalone condition with no ambient airflow (very low heat dissipation rate), and operated for 5~6 minutes where the minimum power(W) is reached.
- General heat transmission power is 5%~80% of the **Max. Power(W)**. For indirect heating of water, the power may be just 15%~60% of the maximum power. The power (W) varies in relation to the contact material, heat sink, heat dissipation area, ambient temperature, airflow and product application.
- The **Surface Temperature** is correlated with heater power (W), the surface temperature increases or decreases with the power(W). Hence the heat dissipation condition will also have a strong impact on the surface temperature.
- Smaller models can be designed according to customers' requirement.

Additional Information on PTC Heaters

Application Notes

- The power of PTC heat conductor is related to the ambient thermal condition and the heat dissipation rate of the heater. When the ambient temperature is significantly higher than the reference temperature or when heat transfer is restricted, the resistance of the PTC will rise rapidly and reduces power consumption. Hence, **higher the heat dissipation, higher the output power**.
- ***High air speed*** is correlated with high heat dissipation rate, which results in higher power and faster temperature raise.
- Under ***slow air speed***, heater power will decrease, however the temperature at the air outlet will be high.
- Under ***no air flow***, the surface of the PTC fins will approach Curie temperature. The heater power will drop to 1/20 of normal power (when air speed at 6.4m/s), and stabilizes at a constant temperature.
- Under ***constant air flow***, the increase in voltage will have little effect on the heater power.
- The surface temperature of PTC is self regulated.

PTC Heat Conductor Specifications-220V

■ AC 200-240V

Model	L(mm)	Withstand Voltage(V)	Max. Power (W)	Min. Power (W)	Max. Inrush (A)	Surface Temperature (℃)	Suitable Models
LCH-X21012	1: 32(34)	280V	0120	3	1	Standard Temperature: 240: 240℃ Special Temperatures: 90: 90℃ 120: 120℃ 150: 150℃ 180: 180℃ 200: 200℃ 220: 220℃	LCH-A~F
LCH-X21024			0240	6	2		LCH-A, C & F only
LCH-X22012	2: 62		0120	3	1		LCH-A~F
LCH-X22024			0240	6	2		LCH-A~F
LCH-X22036			0360	9	3.1		LCH-A, C & F only
LCH-X22048			0480	12	4.1		LCH-A, C & F only
LCH-X23012	3: 84		0120	3	1		LCH-A~F
LCH-X23024			0240	6	2		LCH-A~F
LCH-X23036			0360	9	3.1		LCH-A~F
LCH-X23048			0480	12	4.1		LCH-A, C & F only
LCH-X23060			0600	15	5.1		LCH-A, C & F only
LCH-X24024	4:106		0240	6	2		LCH-A~F
LCH-X24036			0360	9	3.1		LCH-A~F
LCH-X24048			0480	12	4.1		LCH-A~F
LCH-X24060			0600	15	5.1		LCH-A, C & F only
LCH-X24072			0720	18	6.1		LCH-A, C & F only
LCH-X24084			0840	21	7.1		LCH-A, C & F only
LCH-X25024	5:128		0240	6	2		LCH-A~F
LCH-X25036			0360	9	3.1		LCH-A~F
LCH-X25048			0480	12	4.1		LCH-A~F
LCH-X25060			0600	15	5.1		LCH-A~F
LCH-X25072			0720	18	6.1		LCH-A, C & F only
LCH-X25084			0840	21	7.1		LCH-A, C & F only
LCH-X25096			0960	24	8.2		LCH-A, C & F only
LCH-X26036	6:150		0360	9	3.1		LCH-A~F
LCH-X26048			0480	12	4.1		LCH-A~F
LCH-X26060			0600	15	5.1		LCH-A~F
LCH-X26072			0720	18	6.1		LCH-A~F
LCH-X26084			0840	21	7.1		LCH-A, C & F only
LCH-X26096			0960	24	8.2		LCH-A, C & F only
LCH-X26108			1080	27	9.2		LCH-A, C & F only
LCH-X26120			1200	30	10.2		LCH-A, C & F only
LCH-X27036	7:172		0360	9	3.1		LCH-A~F
LCH-X27048			0480	12	4.1		LCH-A~F
LCH-X27060			0600	15	5.1		LCH-A~F
LCH-X27072			0720	18	6.1		LCH-A~F
LCH-X27084			0840	21	7.1		LCH-A~F
LCH-X27096			0960	24	8.2		LCH-A, C & F only
LCH-X27108			1080	27	9.2		LCH-A, C & F only
LCH-X27120			1200	30	10.2		LCH-A, C & F only
LCH-X27132			1320	33	11.2		LCH-A, C & F only
LCH-X28060	8:194		0600	15	5.1		LCH-A~F
LCH-X28072			0720	18	6.1		LCH-A~F
LCH-X28084			0840	21	7.1		LCH-A~F
LCH-X28096			0960	24	8.2		LCH-A~F
LCH-X28108			1080	27	9.2		LCH-A, C & F only
LCH-X28120			1200	30	10.2		LCH-A, C & F only
LCH-X28132			1320	33	11.2		LCH-A, C & F only
LCH-X28144			1440	36	12.2		LCH-A, C & F only

PTC Heat Conductor Specifications-110V

■ AC 100-120V

Model	L(mm)	Withstand Voltage(V)	Max. Power (W)	Min. Power (W)	Max. Inrush (A)	Surface Temperature (℃)	Suitable Models
LCH-X11012	1: 32(34)	160V	0120	3	2	Standard Temperature: 240: 240℃ Special Temperatures: 90: 90℃ 120: 120℃ 150: 150℃ 180: 180℃ 200: 200℃ 220: 220℃	LCH-A~F
LCH-X11024			0240	6	4		LCH-A, C & F only
LCH-X12012	2: 62		0120	3	2		LCH-A~F
LCH-X12024			0240	6	4		LCH-A~F
LCH-X12036			0360	9	6		LCH-A, C & F only
LCH-X12048			0480	12	8		LCH-A, C & F only
LCH-X13012	3: 84		0120	3	2		LCH-A~F
LCH-X13024			0240	6	4		LCH-A~F
LCH-X13036			0360	9	6		LCH-A~F
LCH-X13048			0480	12	8		LCH-A, C & F only
LCH-X13060			0600	15	10		LCH-A, C & F only
LCH-X14024	4:106		0240	6	4		LCH-A~F
LCH-X14036			0360	9	6		LCH-A~F
LCH-X14048			0480	12	8		LCH-A~F
LCH-X14060			0600	15	10		LCH-A, C & F only
LCH-X14072			0720	18	12		LCH-A, C & F only
LCH-X14084			0840	21	14		LCH-A, C & F only
LCH-X15024	5:128		0240	6	4		LCH-A~F
LCH-X15036			0360	9	6		LCH-A~F
LCH-X15048			0480	12	8		LCH-A~F
LCH-X15060			0600	15	10		LCH-A~F
LCH-X15072			0720	18	12		LCH-A, C & F only
LCH-X15084			0840	21	14		LCH-A, C & F only
LCH-X15096			0960	24	16		LCH-A, C & F only
LCH-X16036	6:150		0360	9	6		LCH-A~F
LCH-X16048			0480	12	8		LCH-A~F
LCH-X16060			0600	15	10		LCH-A~F
LCH-X16072			0720	18	12		LCH-A~F
LCH-X16084			0840	21	14		LCH-A, C & F only
LCH-X16096			0960	24	16		LCH-A, C & F only
LCH-X16108			1080	27	18		LCH-A, C & F only
LCH-X16120			1200	30	20		LCH-A, C & F only
LCH-X17036	7:172		0360	9	6		LCH-A~F
LCH-X17048			0480	12	8		LCH-A~F
LCH-X17060			0600	15	10		LCH-A~F
LCH-X17072			0720	18	12		LCH-A~F
LCH-X17084			0840	21	14		LCH-A~F
LCH-X17096			0960	24	16		LCH-A, C & F only
LCH-X17108			1080	27	18		LCH-A, C & F only
LCH-X17120			1200	30	20		LCH-A, C & F only
LCH-X17132			1320	33	22		LCH-A, C & F only
LCH-X18060	8:194		0600	15	10		LCH-A~F
LCH-X18072			0720	18	12		LCH-A~F
LCH-X18084			0840	21	14		LCH-A~F
LCH-X18096			0960	24	16		LCH-A~F
LCH-X18108			1080	27	18		LCH-A, C & F only
LCH-X18120			1200	30	20		LCH-A, C & F only
LCH-X18132			1320	33	22		LCH-A, C & F only
LCH-X18144			1440	36	24		LCH-A, C & F only
LCH-X18156			1560	39	27		LCH-A, C & F only

PTC Heat Conductor Specifications-72V

■ DC/AC 72V

Model	L(mm)	Withstand Voltage(V)	Max. Power (W)	Min. Power (W)	Max. Inrush (A)	Surface Temperature (℃)	Suitable Models
LCH-X071012	1: 32(34)	98	0120	3	1	LCH-A Standard Temperature: 240: 240℃ LCH-B~F Standard Temperatures: 220: 220℃	LCH-A~F
LCH-X071024		98	0240	6	2		LCH-A, C & F only
LCH-X072012	2: 62	98	0120	3	1		LCH-A~F
LCH-X072024		98	0240	6	2		LCH-A~F
LCH-X072036		98	0360	9	3		LCH-A, C & F only
LCH-X072048		98	0480	12	4		LCH-A, C & F only
LCH-X073012	3: 84	98	0120	3	1		LCH-A~F
LCH-X073024		98	0240	6	2		LCH-A~F
LCH-X073036		98	0360	9	3		LCH-A~F
LCH-X073048		98	0480	12	4		LCH-A, C & F only
LCH-X073060		98	0600	15	5		LCH-A, C & F only
LCH-X074024	4:106	98	0240	6	2		LCH-A~F
LCH-X074036		98	0360	9	3		LCH-A~F
LCH-X074048		98	0480	12	4		LCH-A~F
LCH-X074060		98	0600	15	5		LCH-A, C & F only
LCH-X074072		98	0720	18	6		LCH-A, C & F only
LCH-X074084		98	0840	21	7		LCH-A, C & F only
LCH-X075024	5:128	98	0240	6	2		LCH-A~F
LCH-X075036		98	0360	9	3		LCH-A~F
LCH-X075048		98	0480	12	4		LCH-A~F
LCH-X075060		98	0600	15	5		LCH-A~F
LCH-X075072		98	0720	18	6		LCH-A, C & F only
LCH-X075084		98	0840	21	7		LCH-A, C & F only
LCH-X075096		98	0960	24	8		LCH-A, C & F only
LCH-X076036	6:150	98	0360	9	3		LCH-A~F
LCH-X076048		98	0480	12	4		LCH-A~F
LCH-X076060		98	0600	15	5		LCH-A~F
LCH-X076072		98	0720	18	6		LCH-A~F
LCH-X076084		98	0840	21	7		LCH-A, C & F only
LCH-X076096		98	0960	24	8		LCH-A, C & F only
LCH-X076108		98	1080	27	9		LCH-A, C & F only
LCH-X076120		98	1200	30	10		LCH-A, C & F only
LCH-X077036	7:172	98	0360	9	3		LCH-A~F
LCH-X077048		98	0480	12	4		LCH-A~F
LCH-X077060		98	0600	15	5		LCH-A~F
LCH-X077072		98	0720	18	6		LCH-A~F
LCH-X077084		98	0840	21	7		LCH-A~F
LCH-X077096		98	0960	24	8		LCH-A, C & F only
LCH-X077108		98	1080	27	9		LCH-A, C & F only
LCH-X077120		98	1200	30	10		LCH-A, C & F only
LCH-X077132		98	1320	33	11		LCH-A, C & F only
LCH-X078060	8:194	98	0600	15	5		LCH-A~F
LCH-X078072		98	0720	18	6		LCH-A~F
LCH-X078084		98	0840	21	7		LCH-A~F
LCH-X078096		98	0960	24	8		LCH-A~F
LCH-X078108		98	1080	27	9		LCH-A, C & F only
LCH-X078120		98	1200	30	10		LCH-A, C & F only
LCH-X078132		98	1320	33	11		LCH-A, C & F only
LCH-X078144		98	1440	36	12		LCH-A, C & F only

PTC Heat Conductor Specifications-48V

■ DC/AC 48V

Model	L(mm)	Withstand Voltage(V)	Max. Power (W)	Min. Power (W)	Max. Inrush (A)	Surface Temperature (℃)	Suitable Models
LCH-X041012	1: 32(34)	72	0120	3	4		LCH-A~F
LCH-X041024		72	0240	6	9		LCH-A, C & F only
LCH-X042012	2: 62	72	0120	3	4		LCH-A~F
LCH-X042024		72	0240	6	9		LCH-A~F
LCH-X042036		72	0360	9	13		LCH-A, C & F only
LCH-X042048		72	0480	12	17		LCH-A, C & F only
LCH-X043012	3: 84	72	0120	3	4		LCH-A~F
LCH-X043024		72	0240	6	9		LCH-A~F
LCH-X043036		72	0360	9	13		LCH-A~F
LCH-X043048		72	0480	12	17		LCH-A, C & F only
LCH-X043060		72	0600	15	21		LCH-A, C & F only
LCH-X044024	4:106	72	0240	6	9		LCH-A~F
LCH-X044036		72	0360	9	13		LCH-A~F
LCH-X044048		72	0480	12	17		LCH-A~F
LCH-X044060		72	0600	15	21		LCH-A, C & F only
LCH-X044072		72	0720	18	26		LCH-A, C & F only
LCH-X044084		72	0840	21	30		LCH-A, C & F only
LCH-X045024	5:128	72	0240	6	9	LCH-A Standard Temperature: 240: 240℃ LCH-B~F Standard Temperatures: 220: 220℃	LCH-A~F
LCH-X045036		72	0360	9	13		LCH-A~F
LCH-X045048		72	0480	12	17		LCH-A~F
LCH-X045060		72	0600	15	21		LCH-A~F
LCH-X045072		72	0720	18	26		LCH-A, C & F only
LCH-X045084		72	0840	21	30		LCH-A, C & F only
LCH-X045096		72	0960	24	34		LCH-A, C & F only
LCH-X046036	6:150	72	0360	9	13		LCH-A~F
LCH-X046048		72	0480	12	17		LCH-A~F
LCH-X046060		72	0600	15	21		LCH-A~F
LCH-X046072		72	0720	18	26		LCH-A~F
LCH-X046084		72	0840	21	30		LCH-A, C & F only
LCH-X046096		72	0960	24	34		LCH-A, C & F only
LCH-X046108		72	1080	27	38		LCH-A, C & F only
LCH-X047036	7:172	72	0360	9	13		LCH-A~F
LCH-X047048		72	0480	12	17		LCH-A~F
LCH-X047060		72	0600	15	21		LCH-A~F
LCH-X047072		72	0720	18	26		LCH-A~F
LCH-X047084		72	0840	21	30		LCH-A~F
LCH-X047096		72	0960	24	34		LCH-A, C & F only
LCH-X047108		72	1080	27	38		LCH-A, C & F only
LCH-X048060	8:194	72	0600	15	21		LCH-A~F
LCH-X048072		72	0720	18	26		LCH-A~F
LCH-X048084		72	0840	21	30		LCH-A~F
LCH-X048096		72	0960	24	34		LCH-A~F
LCH-X048108		72	1080	27	38		LCH-A, C & F only

PTC Heat Conductor Specifications-24V

■ DC/AC 24V

Model	L(mm)	Withstand Voltage(V)	Max. Power (W)	Min. Power (W)	Max. Inrush (A)	Surface Temperature (℃)	Suitable Models
LCH-X021012	1: 32(34)	36	0120	3	9	LCH-A Standard Temperature: 240: 240℃ LCH-B~F Standard Temperatures: 220: 220℃	LCH-A~F
LCH-X021024		36	0240	6	17		LCH-A, C & F only
LCH-X022012	2: 62	36	0120	3	9		LCH-A~F
LCH-X022024		36	0240	6	17		LCH-A~F
LCH-X022036		36	0360	9	26		LCH-A, C & F only
LCH-X022048		36	0480	12	34		LCH-A, C & F only
LCH-X023012	3: 84	36	0120	3	9		LCH-A~F
LCH-X023024		36	0240	6	17		LCH-A~F
LCH-X023036		36	0360	9	26		LCH-A~F
LCH-X023048		36	0480	12	34		LCH-A, C & F only
LCH-X024024	4:106	36	0240	6	17		LCH-A~F
LCH-X024036		36	0360	9	26		LCH-A~F
LCH-X024048		36	0480	12	34		LCH-A~F
LCH-X025024	5:128	36	0240	6	17		LCH-A~F
LCH-X025036		36	0360	9	26		LCH-A~F
LCH-X025048		36	0480	12	34		LCH-A~F
LCH-X026036	6:150	36	0360	9	26		LCH-A~F
LCH-X026048		36	0480	12	34		LCH-A~F
LCH-X027036	7:172	36	0360	9	26		LCH-A~F
LCH-X027048		36	0480	12	34		LCH-A~F

PTC Heat Conductor Specifications-12V

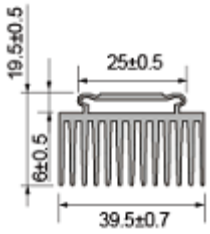
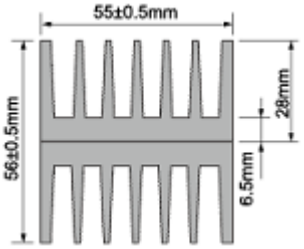
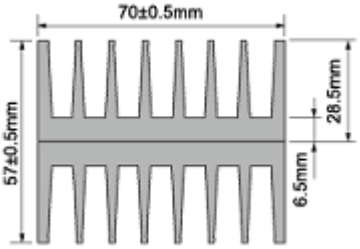
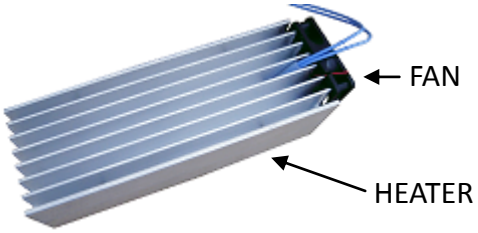
■ DC/AC 12V

Model	L(mm)	Withstand Voltage(V)	Max. Power (W)	Min. Power (W)	Max. Inrush (A)	Surface Temperature (℃)	Suitable Models
LCH-X011012	1: 32(34)	24	0120	3	15	LCH-A Standard Temperature: 200: 200℃ 240: 240℃ LCH-B~F Standard Temperatures: 220: 220℃	LCH-A~F
LCH-X011024		24	0240	6	30		LCH-A, C & F only
LCH-X012012	2: 62	24	0120	3	15		LCH-A~F
LCH-X012024		24	0240	6	30		LCH-A~F
LCH-X012036		24	0360	9	45		LCH-A, C & F only
LCH-X013012	3: 84	24	0120	3	15		LCH-A~F
LCH-X013024		24	0240	6	30		LCH-A~F
LCH-X013036		24	0360	9	45		LCH-A~F
LCH-X014024	4:106	24	0240	6	30		LCH-A~F
LCH-X014036		24	0360	9	45		LCH-A~F
LCH-X015024	5:128	24	0240	6	30		LCH-A~F
LCH-X015036		24	0360	9	45		LCH-A~F
LCH-X016036	6:150	24	0360	9	45		LCH-A~F
LCH-X017036	7:172	24	0360	9	45		LCH-A~F

Natural Convection Heater (LCH-H~ LCH-K)

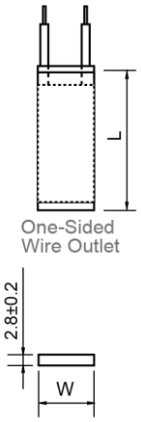
LCH-H to LCH-K type PTC heat conductors are great natural convection heaters due to its rugged aluminum extrusion, allowing it to effectively transfer heat into ambient air without the use of fan. The use of PTC's unique self -regulating characteristic and fin extrusion makes LCH-H~K series of PTC heat conductor a safe and quiet choice for your heater design. Nevertheless, installation of fans to the side of LCH-I and LCH-K types is also an option for quicker heat up of ambient air.

Specifications

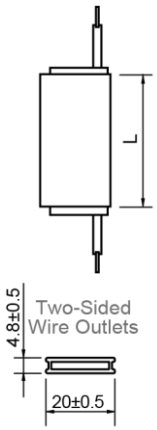
Items	LCH-H Series	LCH-IA Series	LCH-IB Series
Image			
Wattage Range	6W~2000W		
Max. Surface Temperature	220℃		
Voltage Range	AC/DC 12V~600V		
Dimension	39.5 x 19.5 x L	55 x 28 x L	70 x 28.5 x L
Material	Aluminum AL6061/6063		
Optional (PTC Heater + Fan)			

LCH Type PTC Dimensions

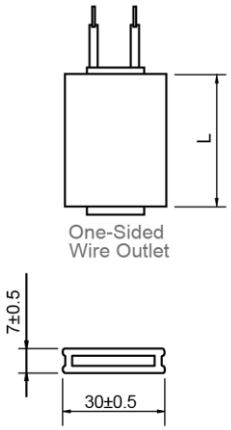
LCH-A



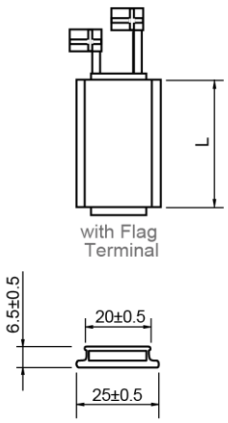
LCH-B



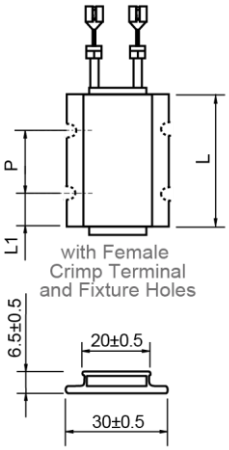
LCH-C



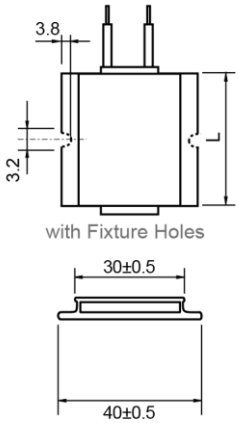
LCH-D



LCH-E

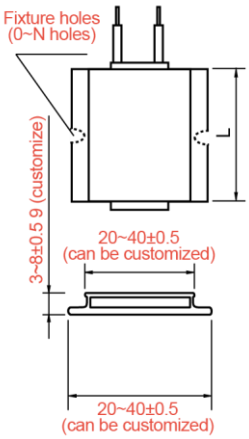


LCH-F

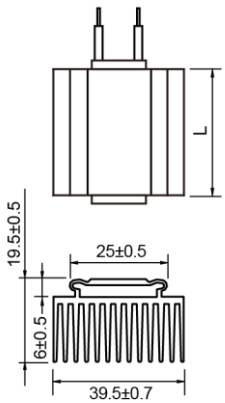


LCH-G

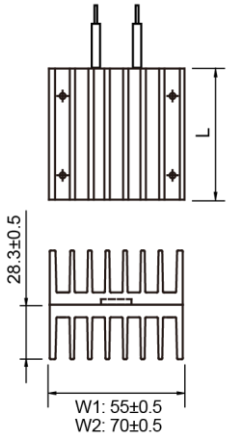
(Customized)



LCH-H

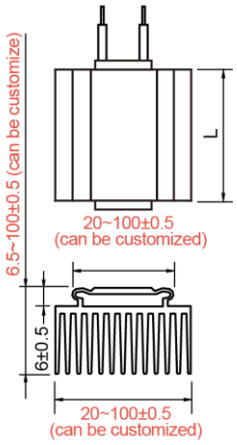


LCH-I



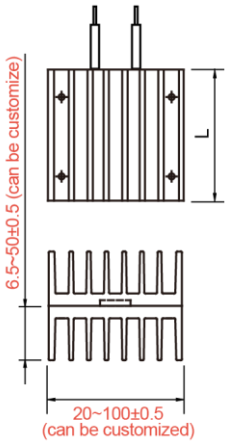
LCH-J

(Customized)



LCH-K

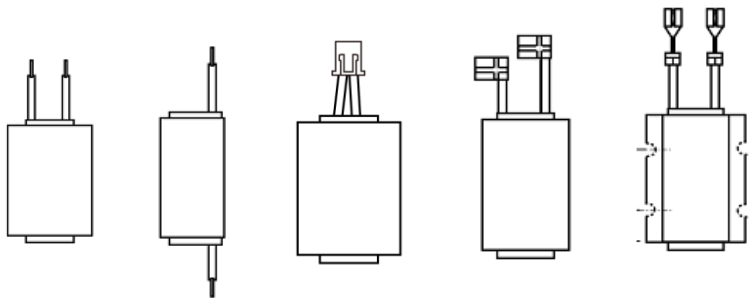
(Customized)

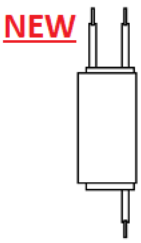


LCH Type PTC Wire Output & Terminals

The height, width, length, fin design, fixture hole location, lead wire exit location and wire terminals of PTC Heat Conductors can be customized according to customer requirements (may require tooling charge). If not specified, PTC heat conductor with standard one-sided wire outlet without terminals will be provided. Below are some of our typical design options for each PTC Heat Conductor type.

	One-Sided Wire Outlet (Standard)	Two-Sided Wire Outlet	Terminal Types			with Fixture Holes	with Fixture Plate	Three-Phase Heating Wire Outlet (Special)
			with Connector (Standard)	with Female Crimp Terminal	with Flag Terminal			
LCH-A	✓	✓	✓	✓	✓		✓	✓
LCH-B	✓	✓	✓	✓	✓		✓	✓
LCH-C	✓	✓	✓	✓	✓		✓	✓
LCH-D	✓	✓	✓	✓	✓		✓	✓
LCH-E	✓	✓	✓	✓	✓	✓		✓
LCH-F	✓	✓	✓	✓	✓	✓		✓
LCH-G	✓	✓	✓	✓	✓	✓		✓
LCH-H	✓	✓	✓	✓	✓	✓		✓
LCH-I	✓	✓	✓	✓	✓			✓
LCH-J	✓	✓	✓	✓	✓	✓		✓
LCH-K	✓	✓	✓	✓	✓			✓

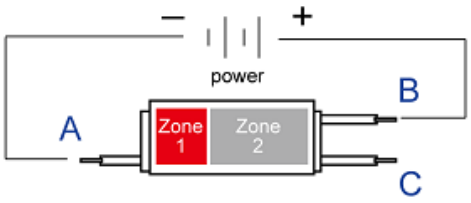
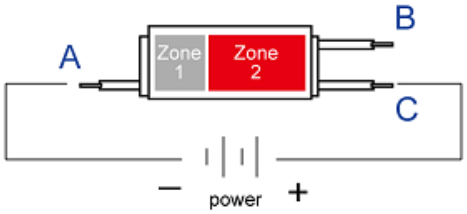
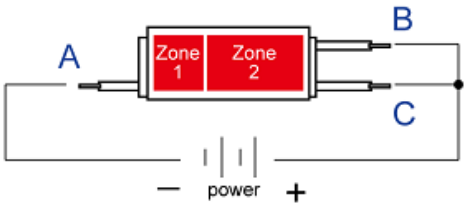




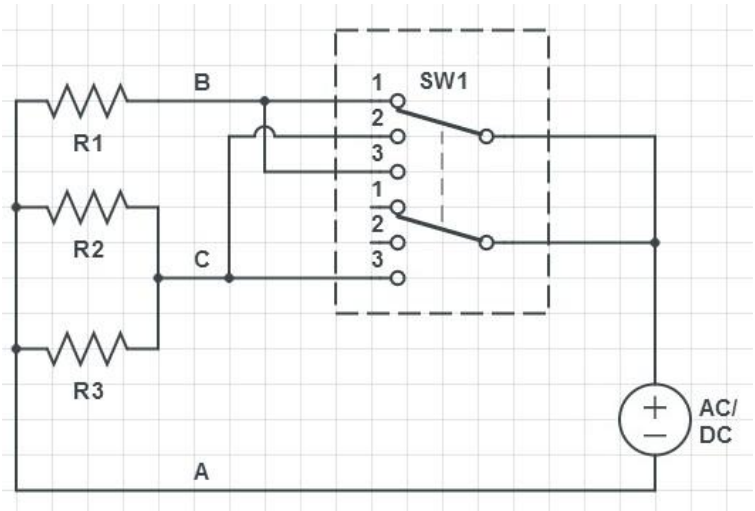
Multi-Stage Heating PTC Heat Conductor

Three Stage Power Settings (LCH-AS ~ LCH-IS Types)

The new multi-stage heating PTC Heat Conductor allows for high, medium and low power (temperature) settings in a single heater. Effectively increase the life span of the heater and provides flexibility in your product design. The PTC heat conductor is separated into two zones (per customer requirement), by powering each zone independently or at the same time would allow for three choices of temperature settings (High, Medium and Low) in a single heat conductor.

Settings	Wire Connection
Low Temperature Connect **A** + **B**: Zone 1 heated	
Medium Temperature Connect **A** + **C**: Zone 2 heated	
High Temperature Connect **A** + **B** + **C**: Both Zone1 and Zone 2 are heated	

Installation (Circuit Connection)



To install, simply connect the three lead wires to a control switch as per the circuit diagram.

R1	= ZONE1
R2 & R3	= ZONE2
1	= A+B
2	= A+B
3	= A+B+C

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File E315621 Vol 1 Issued: 2007-09-03
Revised:

FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

COMPONENT - HEATERS, SPECIALTY
(KSOT2,KSOT8)

Manufacturer: (100224-698)
TAIWAN KING LUNG CHIN PTC CO LTD
NO 81 TAN FU RD SEC 1
TAN TZU HSIANG
TAICHUNG HSIEN
42753 TAIWAN

Applicant: (623071-001)
TAIWAN KING LUNG CHIN PTC CO LTD
NO 81 TAN FU RD SEC 1
TAN TZU HSIANG
TAICHUNG HSIEN
42753 TAIWAN

Recognized Company: (623071-001)
SAME AS APPLICANT

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Stephen Hewson
Senior Vice President
Global Follow-Up Service Operations

William R. Carney
Director
North American Certification Program

Cautions

Hazard of fire:

- ✧ Do not mount PTC air heaters near combustible materials or within a hazardous area.
- ✧ PTC heaters should never be used in an explosive atmosphere.

Electrical Shock:

- ✧ Disconnect electrical power before servicing heater. All electrical wiring must be done in accordance to local electrical codes by a qualified service technician.
- ✧ Do not touch the PTC air heater after power is applied.
- ✧ Never immerse PTC air heaters in liquids.

Severe Burns:

- ✧ PTC heaters operate at high temperatures. Do not touch heaters after power is applied.

Operating Environment:

- ✧ Do not operate PTC heaters at a surface temperature greater than 1292°F (700°C)
- ✧ The operation of PTC heaters with insufficient air flow will lead to an impairment of its functions and life-time.
- ✧ PTC heater is designed for operation in dry and dust free environment.