

LPDM_S Series
LPDH_S Series
LPD_S Series

Low Pressure Drop Heat Sink
with Attachment Holes

ALPHA

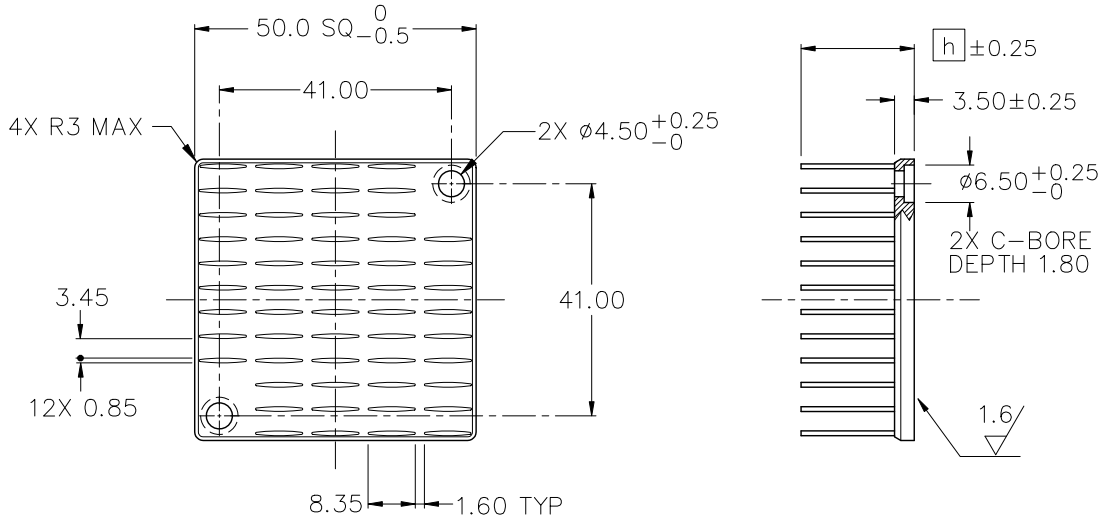
ALPHA

Low Pressure Drop Heat Sink
with attachment holes

LPDM50S



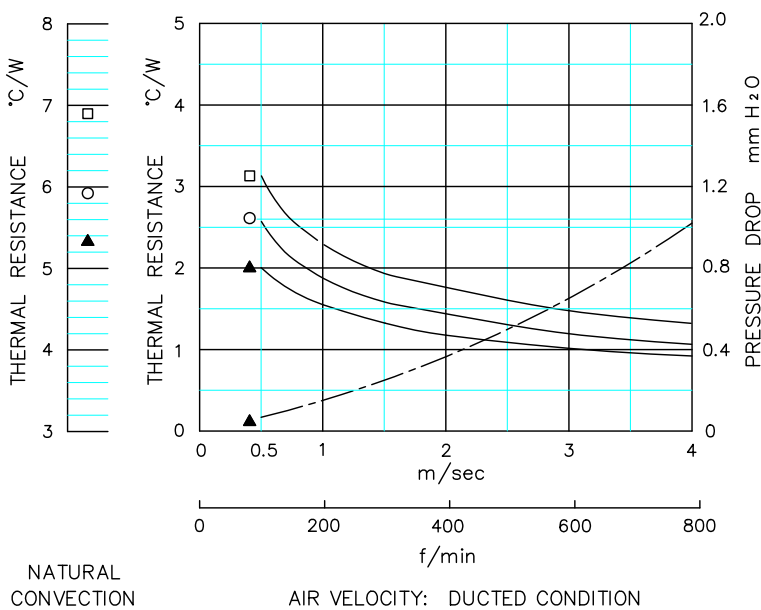
DIM



| MODEL | HEIGHT [h] | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDM50S-15B | 15 | 32.7 |
| LPDM50S-20B | 20 | 36.8 |
| LPDM50S-25B | 25 | 40.9 |

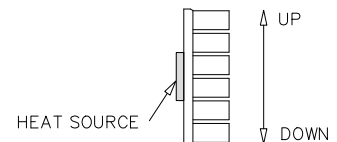
MATERIAL : A 6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



- LPDM50S-15B
- LPDM50S-20B
- ▲ LPDM50S-25B

- DUCTED CONDITION
DUMMY HEATER SIZE: 12.7 SQ
THERMAL RESISTANCE _____
PRESSURE DROP - - - - -
- NATURAL CONVECTION
DUMMY HEATER SIZE: 12.7 SQ
DISSIPATED POWER: 8.0(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

- BASED ON ALPHA'S STANDARD TEST PROCEDURE.
REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

256-1 UEDA, NUMAZU-CITY SHIZUOKA-PREF., JAPAN
PHONE +81(55)966 0789
FAX +81(55)966 9192
E mail : alpha@micforg.co.jp
URL : http://www.micforg.co.jp

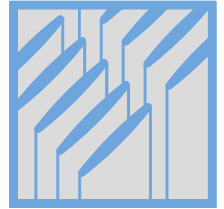
Alpha Novatech, Inc. - a subsidiary of Alpha Company.

473 Sapena Ct. #12 Santa Clara, CA 95054 USA
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FAX +1(408)567-8053
E mail : sales@alphanovatech.com
URL : http://www.alphanovatech.com

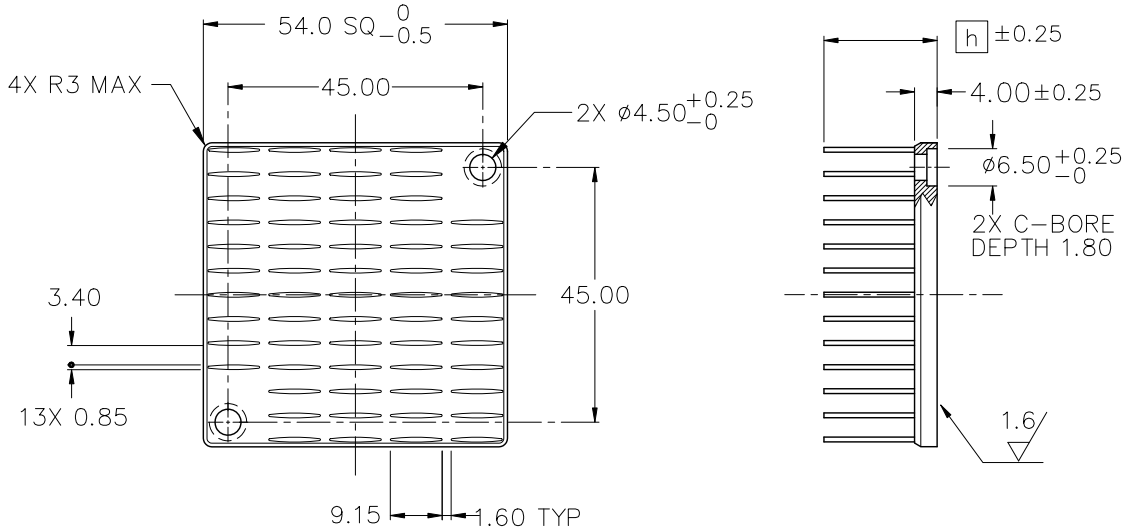
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Low Pressure Drop Heat Sink
with attachment holes

LPDM54S



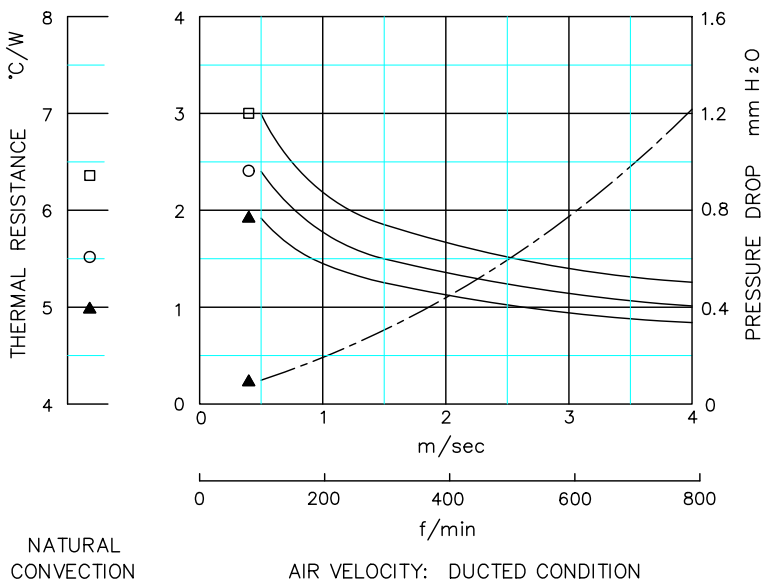
DIM



| MODEL | HEIGHT h | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDM54S-15B | 15 | 41.9 |
| LPDM54S-20B | 20 | 46.8 |
| LPDM54S-25B | 25 | 51.7 |

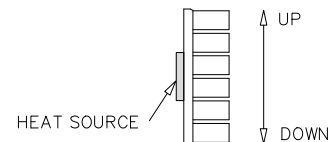
MATERIAL : A 6063
 FINISH : BLACK ANODIZE
 DIMENSIONS : mm

DATA



- LPDM54S-15B
- LPDM54S-20B
- ▲ LPDM54S-25B

- DUCTED CONDITION
 DUMMY HEATER SIZE: 12.7 SQ
 THERMAL RESISTANCE ———
 PRESURE DROP - - - - -
- NATURAL CONVECTION
 DUMMY HEATER SIZE: 12.7 SQ
 DISSPATED POWER: 8.3(W)



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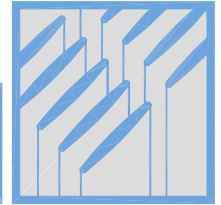
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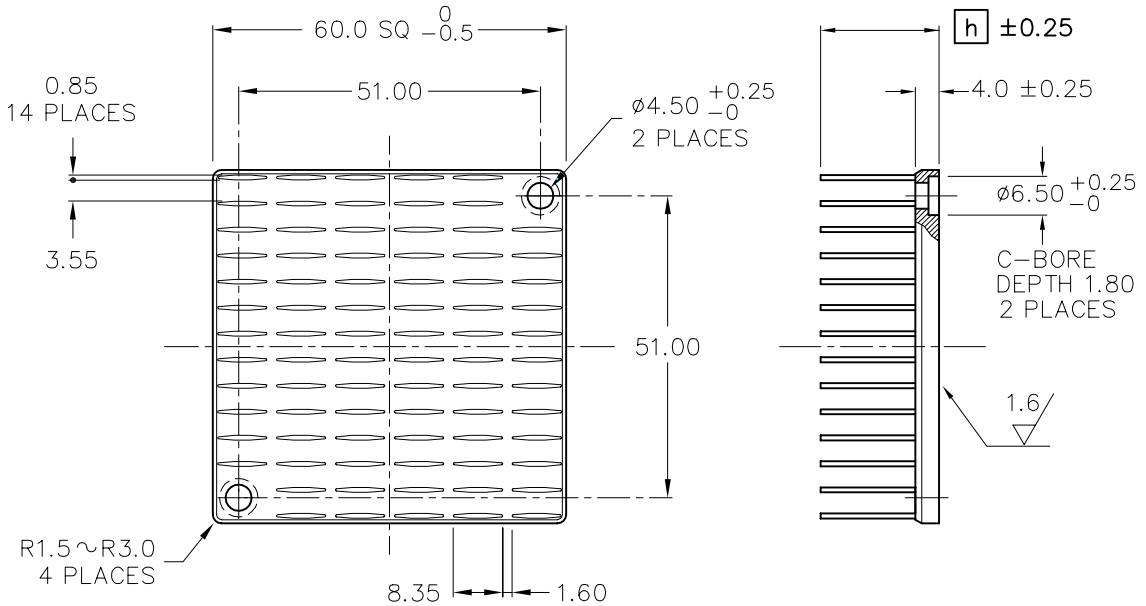
ALPHA

Low Pressure Drop Heat Sink
with attachment holes

LPDM60S



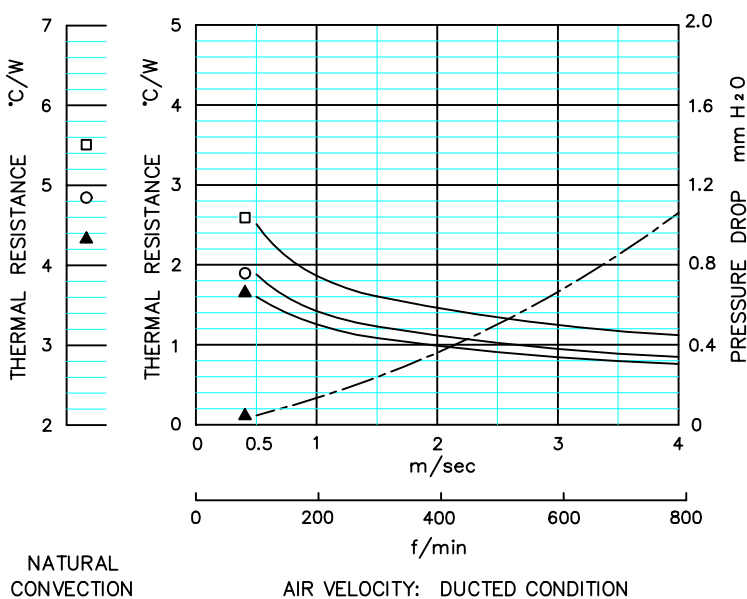
DIM



| MODEL | HEIGHT [h] | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDM60S-15B | 15 | 50.4 |
| LPDM60S-20B | 20 | 55.9 |
| LPDM60S-25B | 25 | 61.4 |

MATERIAL : A 6063
 FINISH : BLACK ANODIZE
 DIMENSIONS : mm

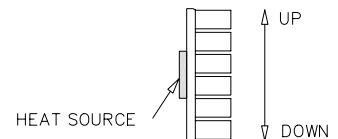
DATA



- LPDM60S-15B
- LPDM60S-20B
- ▲ LPDM60S-25B

● DUCTED CONDITION
 DUMMY HEATER SIZE: 12.7 SQ
 THERMAL RESISTANCE ———
 PRESSURE DROP - - - -

● NATURAL CONVECTION
 DUMMY HEATER SIZE: 12.7 SQ
 DISSIPATED POWER: 9.9(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

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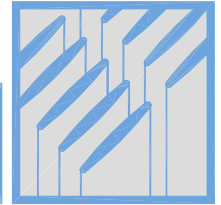
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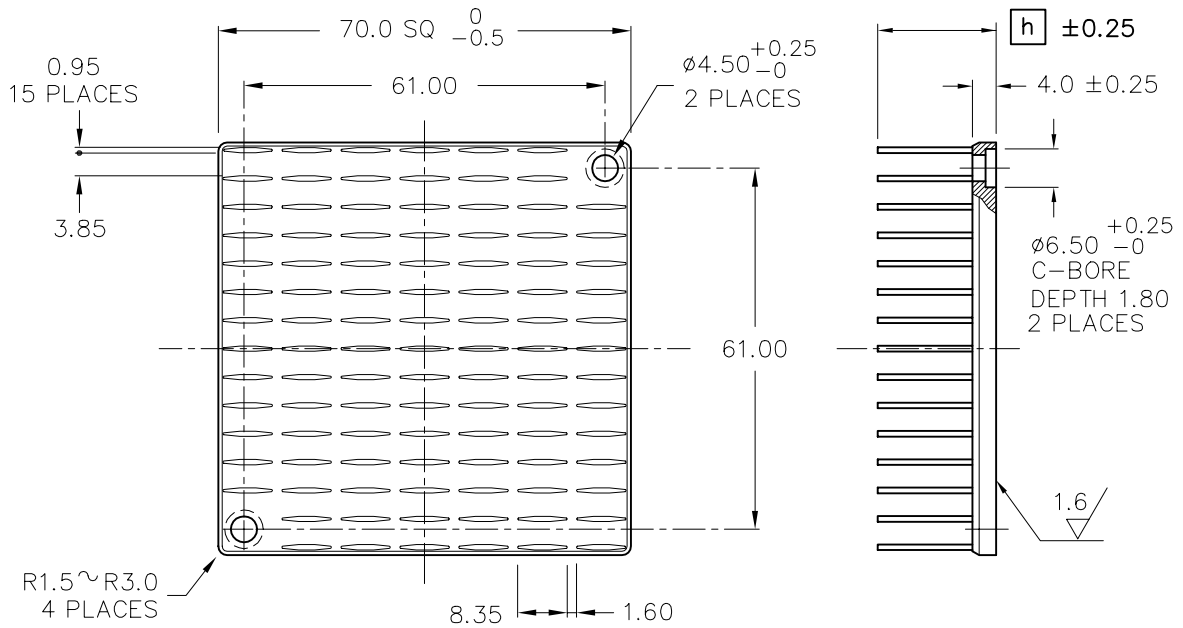
ALPHA

Low Pressure Drop Heat Sink
with attachment holes

LPDM70S



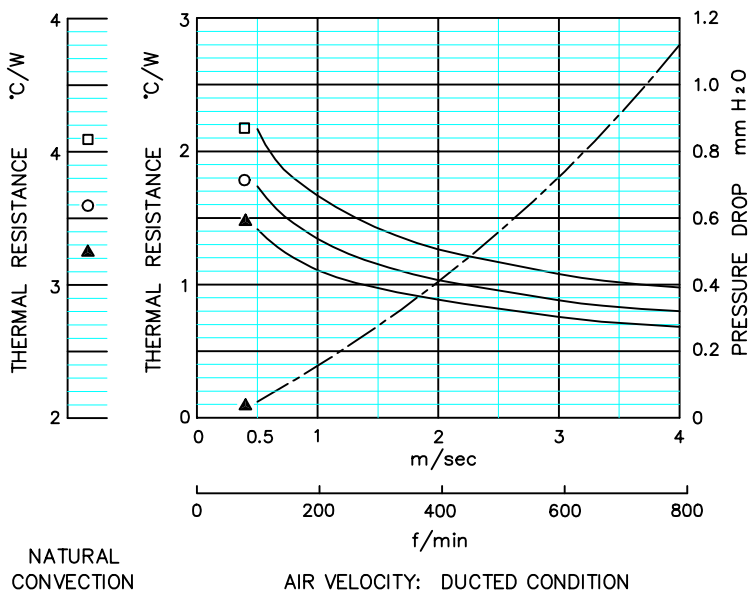
DIM



| MODEL | HEIGHT [h] | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDM70S-15B | 15 | 70.7 |
| LPDM70S-20B | 20 | 78.6 |
| LPDM70S-25B | 25 | 86.6 |

MATERIAL : A 6063
 FINISH : BLACK ANODIZE
 DIMENSIONS : mm

DATA



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

BASED ON ALPHA'S STANDARD TEST PROCEDURE. REFER TO TECHNICAL INFORMATION.

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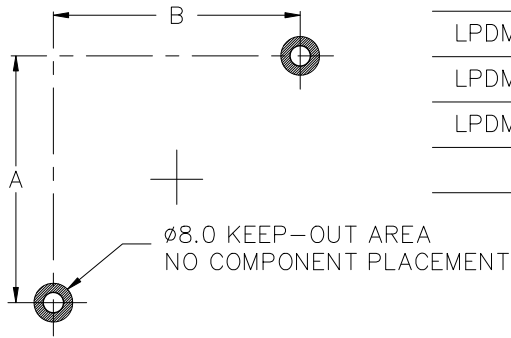
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REF



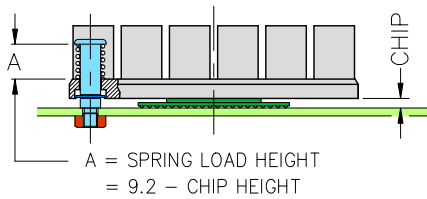
● BOARD KEEPOUT PATTERNS



| | | |
|--------------------|------|------|
| LPDM50S AND UBM50S | 41.0 | 41.0 |
| LPDM54S AND UBM54S | 45.0 | 45.0 |
| LPDM60S AND UBM60S | 51.0 | 51.0 |
| LPDM70S AND UBM70S | 61.0 | 61.0 |
| MODEL | A | B |

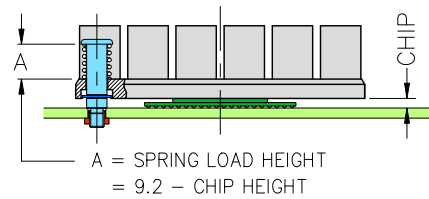
● INSTALLATION

USE HEX NUTS M3x0.5



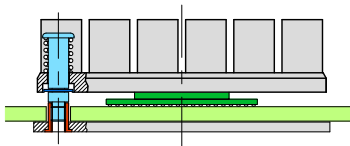
REQUIRES $\phi 3.30$ THRU HOLES IN BOARD.
RECOMMENDED P.C.B THICKNESS 1.6mm.
MINIMUM CHIP HEIGHT 1.5mm.

USE MAC8 TH-1.6-XX-M3



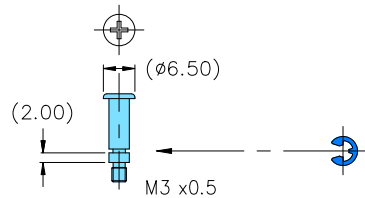
REQUIRES $\phi 3.70$ THRU HOLES IN BOARD.
MAC8 THREAD INSERT NEED THE SOLDERING.
RECOMMENDED P.C.B THICKNESS
MINIMUM 1.6mm ~ MAXIMUM 3.7mm
MINIMUM CHIP HEIGHT 1.5mm.

USE CUSTOM BACKING-PLATE



CUSTOM DESIGN FOR ANY PCB THICKNESS.

SHOULDER-SCREW/RETAINING RING E-2.5

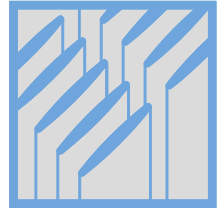


REFER TO THE DRAWING FOR DETAIL SPECIFICATION.

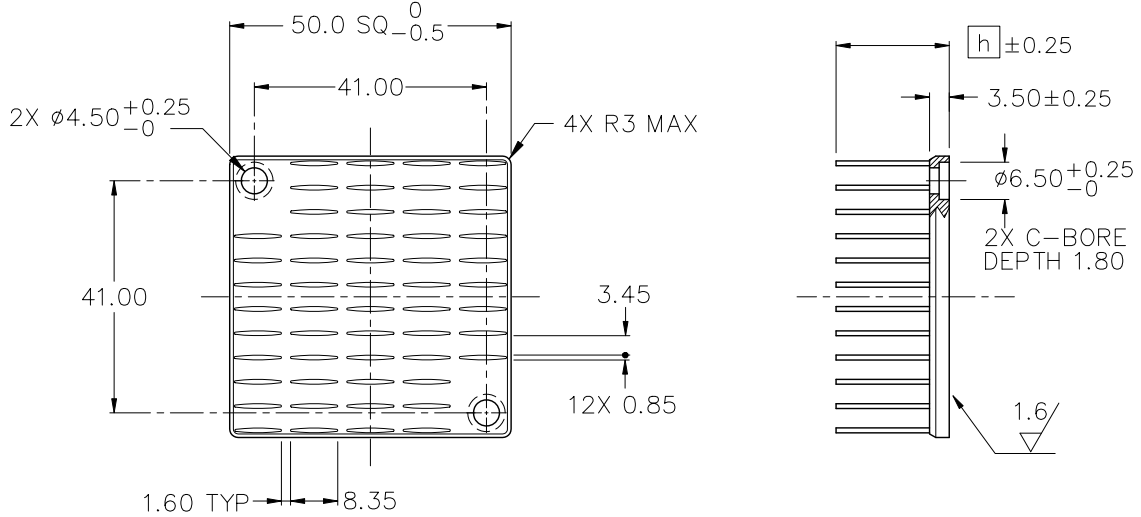
ALPHA

Low Pressure Drop Heat Sink
with attachment holes

LPDH50S



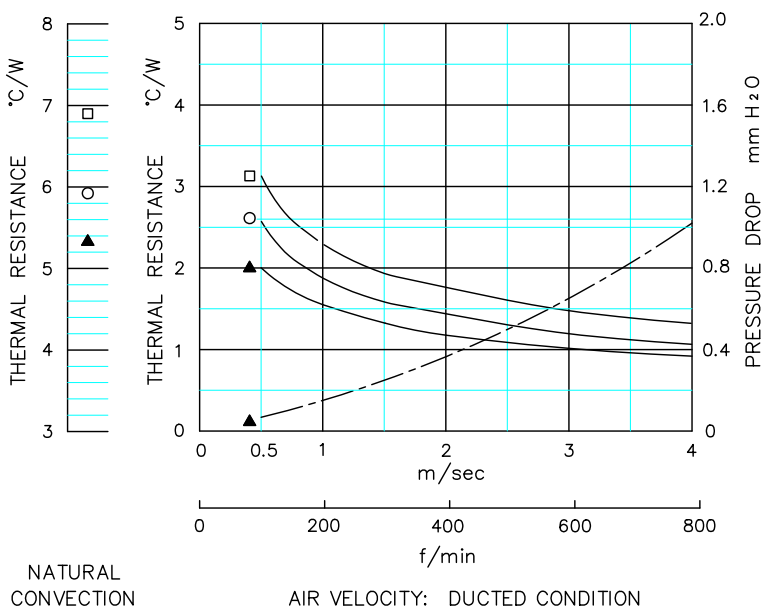
DIM



| MODEL | HEIGHT [h] | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDH50S-15B | 15 | 32.7 |
| LPDH50S-20B | 20 | 36.8 |
| LPDH50S-25B | 25 | 40.9 |

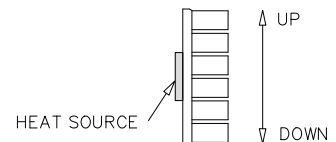
MATERIAL : A 6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



- LPDH50S-15B
- LPDH50S-20B
- ▲ LPDH50S-25B

- DUCTED CONDITION
DUMMY HEATER SIZE: 12.7 SQ
THERMAL RESISTANCE _____
PRESSURE DROP - - - - -
- NATURAL CONVECTION
DUMMY HEATER SIZE: 12.7 SQ
DISSIPATED POWER: 8.0(W)



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- BASED ON ALPHA'S STANDARD TEST PROCEDURE.
REFER TO TECHNICAL INFORMATION.

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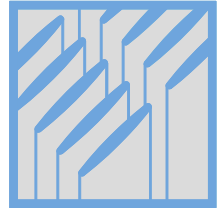
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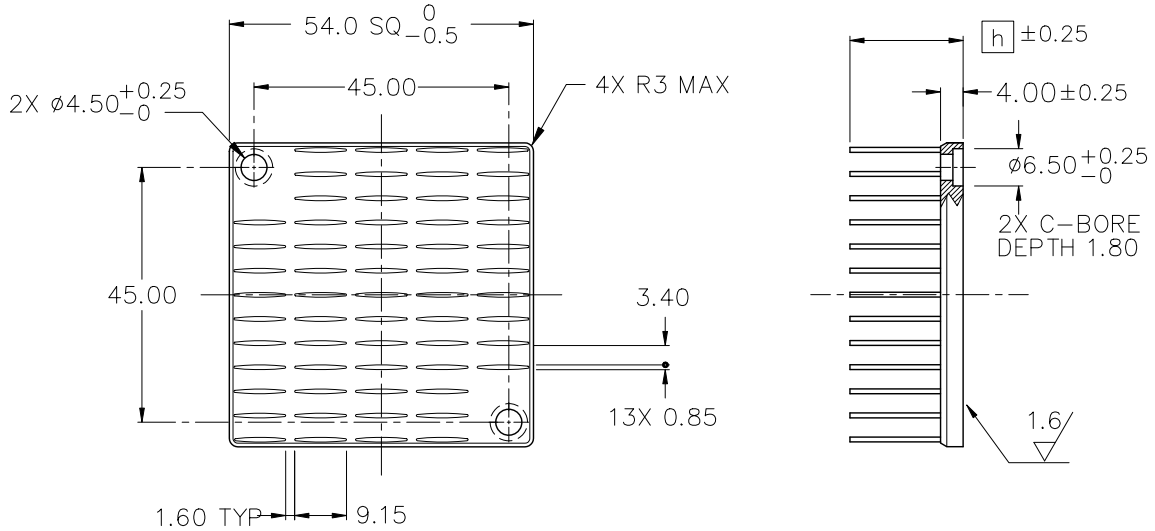
ALPHA

Low Pressure Drop Heat Sink
with attachment holes

LPDH54S



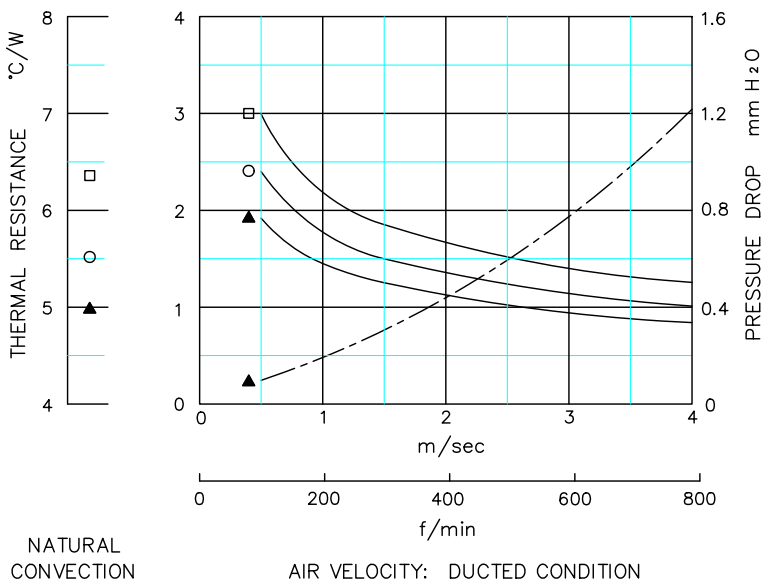
DIM



| MODEL | HEIGHT [h] | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDH54S-15B | 15 | 41.9 |
| LPDH54S-20B | 20 | 46.8 |
| LPDH54S-25B | 25 | 51.7 |

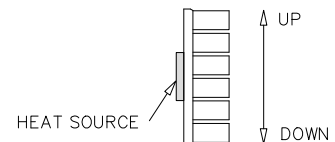
MATERIAL : A 6063
 FINISH : BLACK ANODIZE
 DIMENSIONS : mm

DATA



- LPDH54S-15B
- LPDH54S-20B
- ▲ LPDH54S-25B

- DUCTED CONDITION
 DUMMY HEATER SIZE: 12.7 SQ
 THERMAL RESISTANCE _____
 PRESSURE DROP - - - - -
- NATURAL CONVECTION
 DUMMY HEATER SIZE: 12.7 SQ
 DISSIPATED POWER: 8.3(W)



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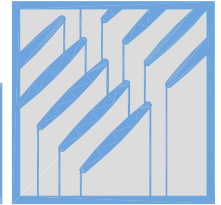
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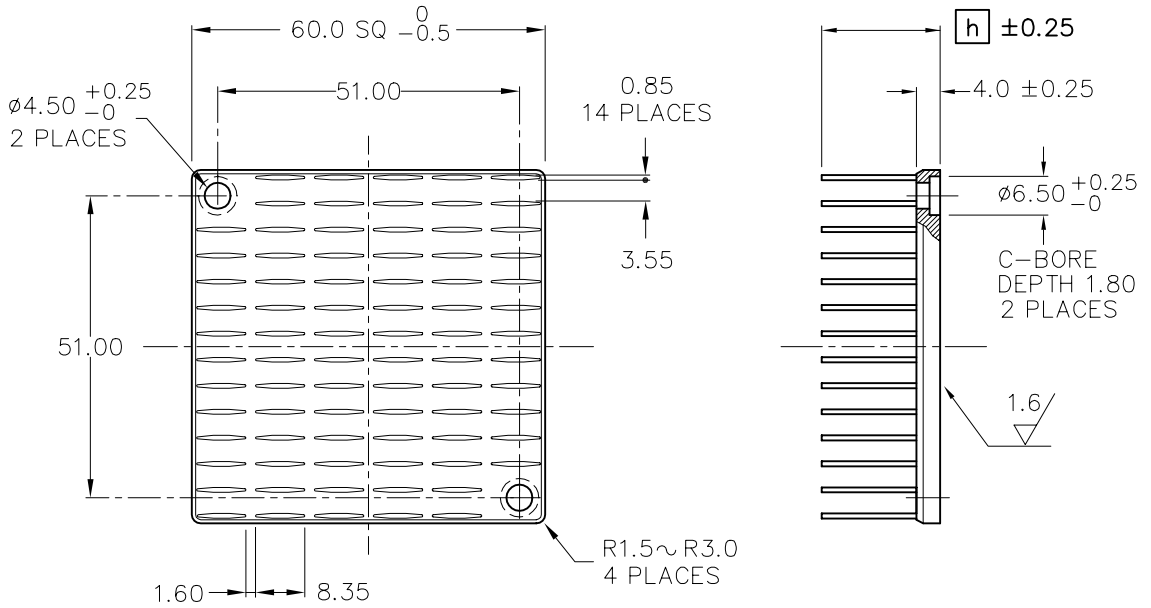
ALPHA

Low Pressure Drop Heat Sink
with attachment holes

LPDH60S



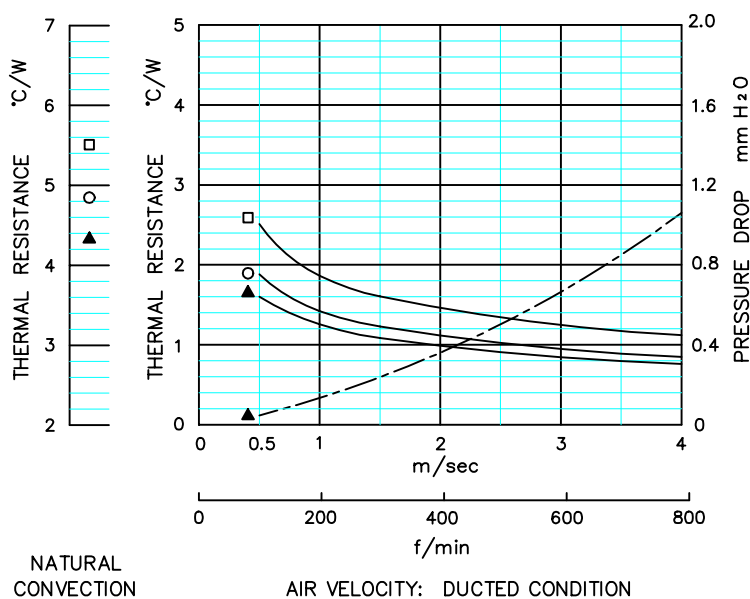
DIM



| MODEL | HEIGHT [h] | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDH60S-15B | 15 | 50.4 |
| LPDH60S-20B | 20 | 55.9 |
| LPDH60S-25B | 25 | 61.4 |

MATERIAL : A 6063
 FINISH : BLACK ANODIZE
 DIMENSIONS : mm

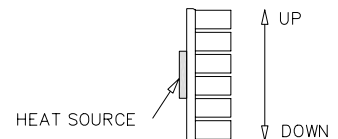
DATA



- LPDH60S-15B
- LPDH60S-20B
- ▲ LPDH60S-25B

● DUCTED CONDITION
 DUMMY HEATER SIZE: 12.7 SQ
 THERMAL RESISTANCE _____
 PRESSURE DROP - - - - -

● NATURAL CONVECTION
 DUMMY HEATER SIZE: 12.7 SQ
 DISSIPATED POWER: 9.9(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

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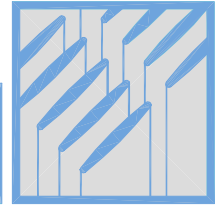
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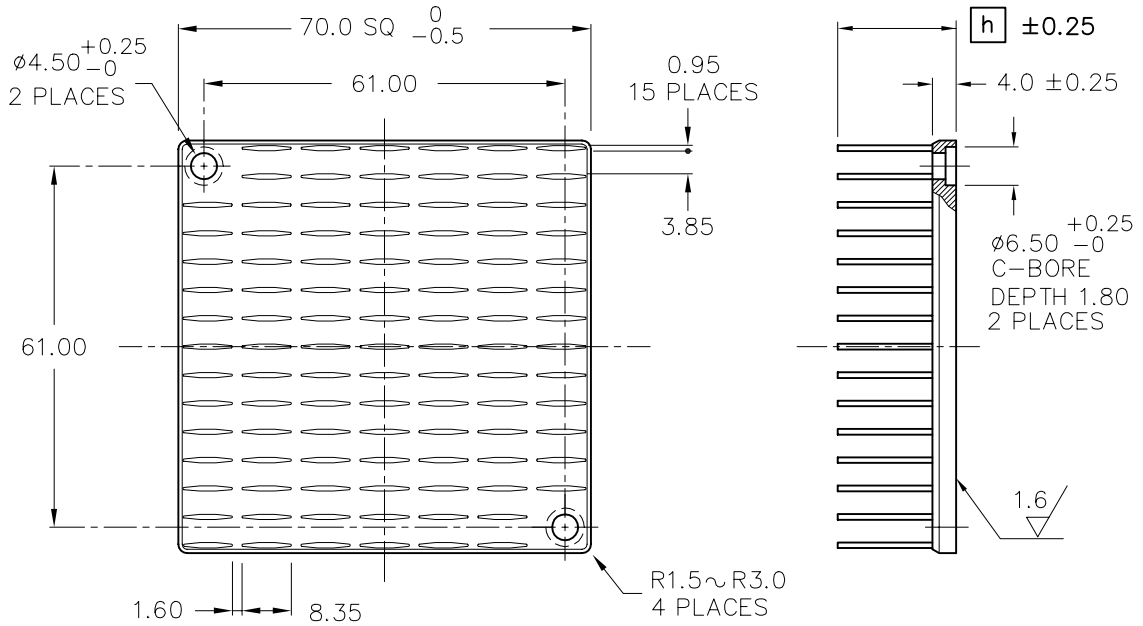
ALPHA

Low Pressure Drop Heat Sink
with attachment holes

LPDH70S



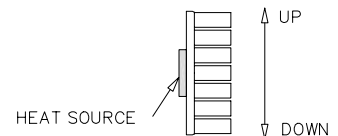
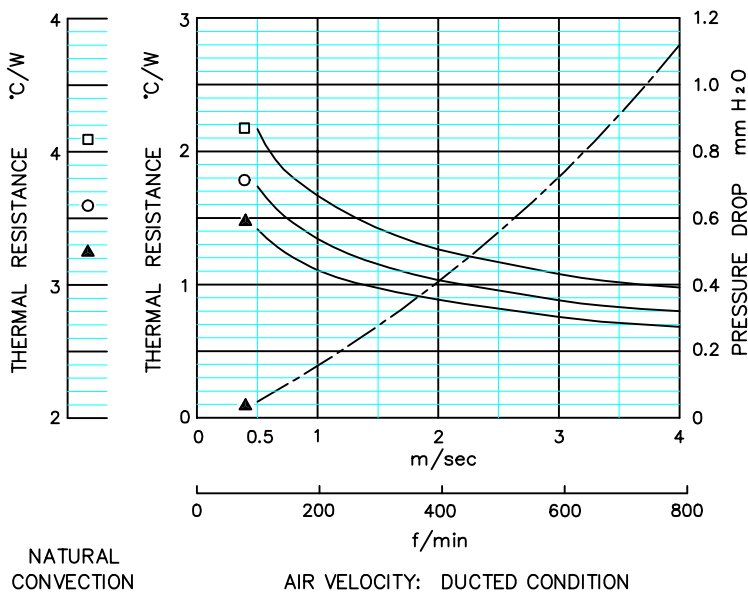
DIM



| MODEL | HEIGHT [h] | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDH70S-15B | 15 | 70.7 |
| LPDH70S-20B | 20 | 78.6 |
| LPDH70S-25B | 25 | 86.6 |

MATERIAL : A 6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

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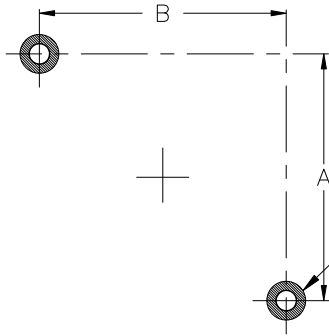
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REF



● BOARD KEEPOUT PATTERNS

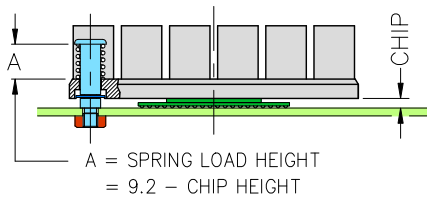


| | | |
|--------------------|------|------|
| LPDH50S AND UBH50S | 41.0 | 41.0 |
| LPDH54S AND UBH54S | 45.0 | 45.0 |
| LPDH60S AND UBH60S | 51.0 | 51.0 |
| LPDH70S AND UBH70S | 61.0 | 61.0 |
| MODEL | A | B |

ø8.0 KEEP-OUT AREA
NO COMPONENT PLACEMENT

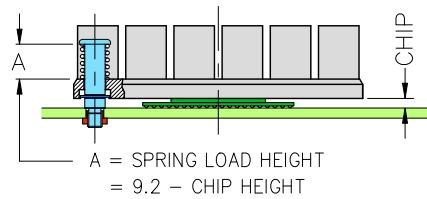
● INSTALLATION

USE HEX NUTS M3x0.5



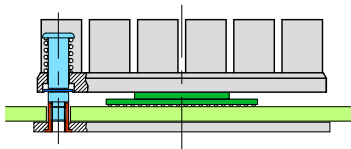
REQUIRES ø3.30 THRU HOLES IN BOARD.
RECOMMENDED P.C.B THICKNESS 1.6mm.
MINIMUM CHIP HEIGHT 1.5mm.

USE MAC8 TH-1.6-XX-M3



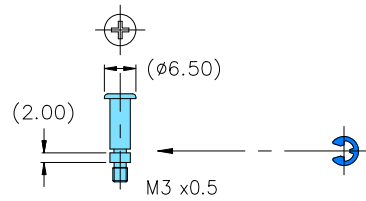
REQUIRES ø3.70 THRU HOLES IN BOARD.
MAC8 THREAD INSERT NEED THE SOLDERING.
RECOMMENDED P.C.B THICKNESS
MINIMUM 1.6mm ~ MAXIMUM 3.7mm
MINIMUM CHIP HEIGHT 1.5mm.

USE CUSTOM BACKING-PLATE



CUSTOM DESIGN FOR ANY PCB THICKNESS.

SHOULDER-SCREW/RETAINING RING E-2.5

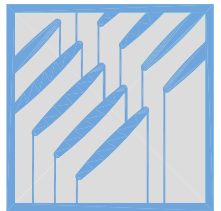


REFER TO THE DRAWING FOR DETAIL SPECIFICATION.

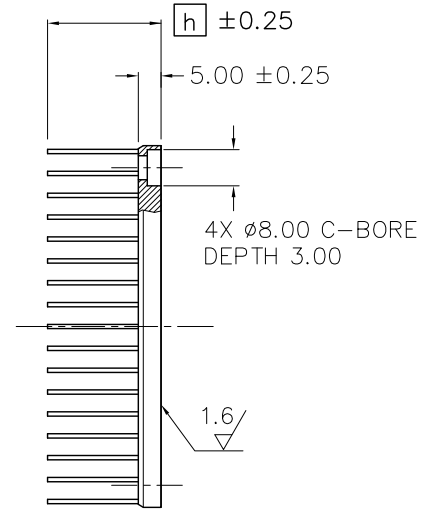
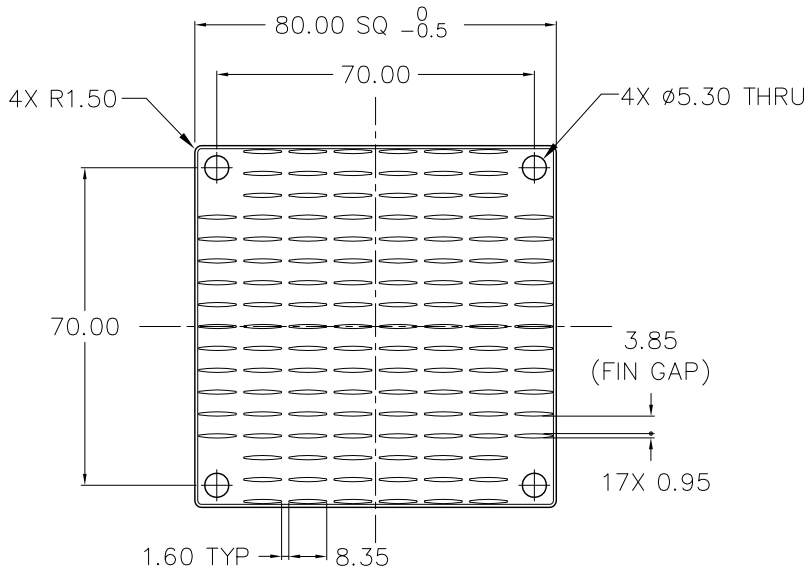
ALPHA

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LPD80S



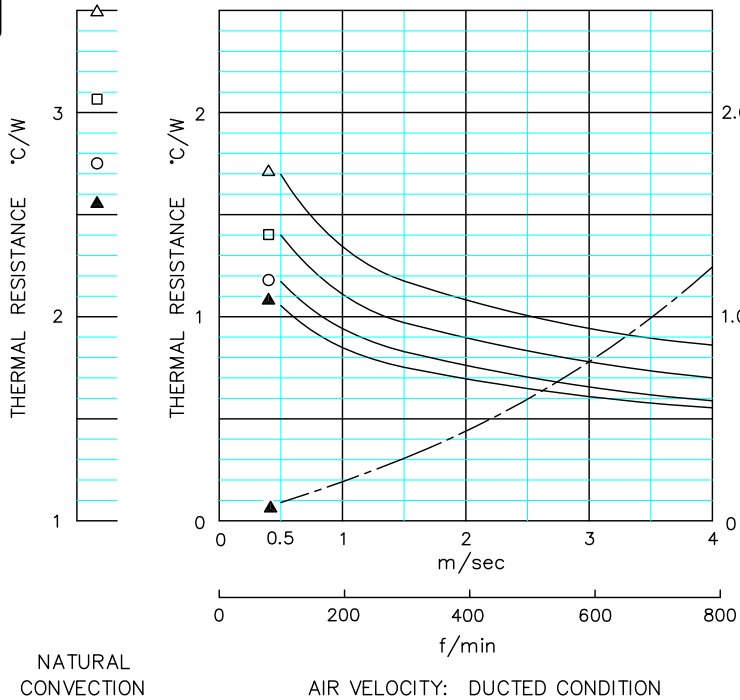
DIM



| MODEL | HEIGHT h | WEIGHT (grams) |
|------------|------------|----------------|
| LPD80S-15B | 15 | 103.6 |
| LPD80S-20B | 20 | 113.9 |
| LPD80S-25B | 25 | 124.1 |
| LPD80S-30B | 30 | 134.4 |

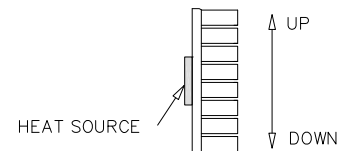
MATERIAL : A 6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



- △ LPD80S-15B
- LPD80S-20B
- LPD80S-25B
- ▲ LPD80S-30B

- DUCTED CONDITION
DUMMY HEATER SIZE: 12.7 SQ
THERMAL RESISTANCE ———
PRESURE DROP - - - -
- NATURAL CONVECTION
DUMMY HEATER SIZE: 25.4 SQ
DISSIPATED POWER: 16.0(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

- BASED ON ALPHA'S STANDARD TEST PROCEDURE.
REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

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URL : <http://www.micforg.co.jp>

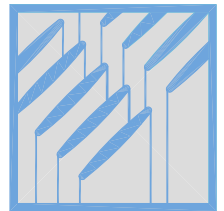
Alpha Novatech, Inc. - a subsidiary of Alpha Company.

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FAX +1(408)567-8053
E mail : sales@alphanovatech.com
URL : <http://www.alphanovatech.com>

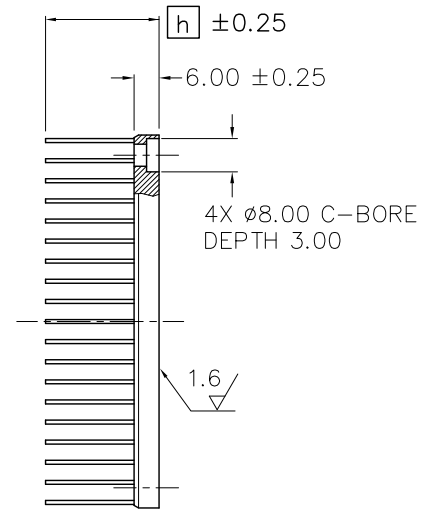
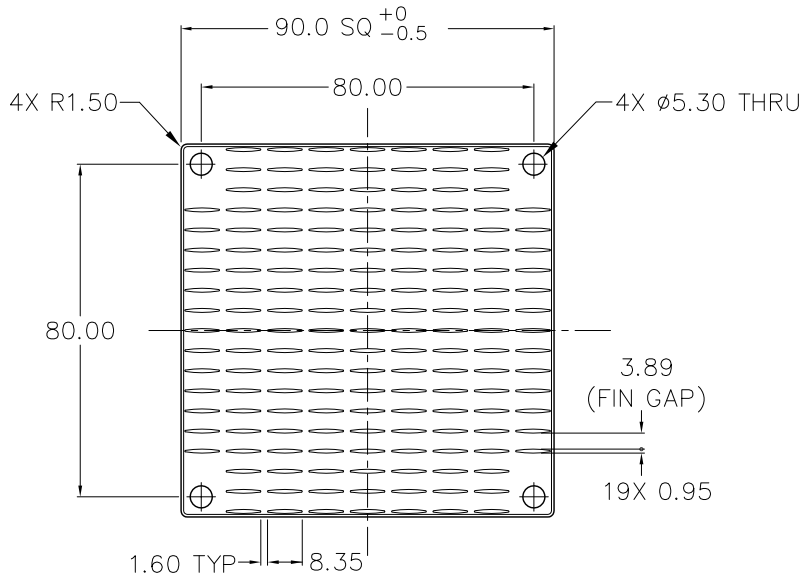
ALPHA

Low Pressure Drop Heat Sink
with attachment holes

LPD90S



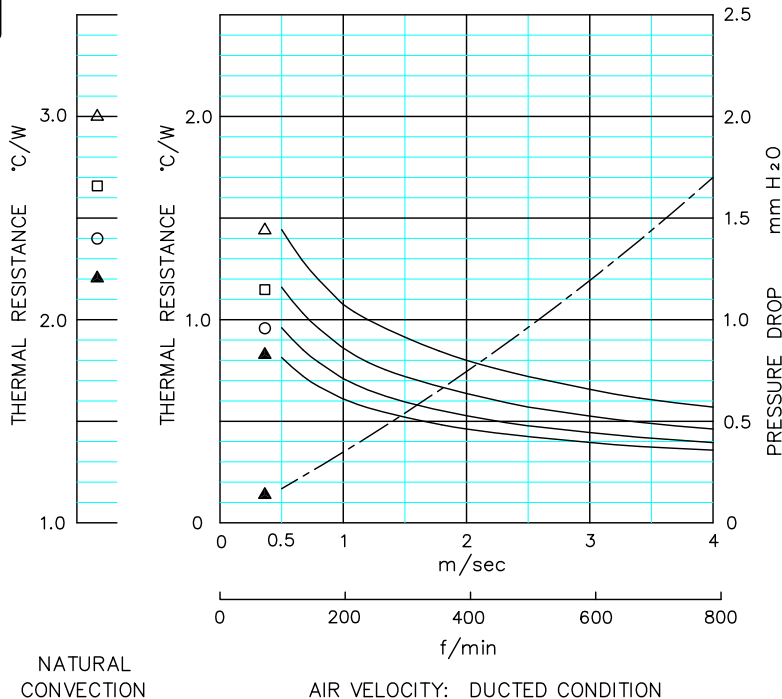
DIM



| MODEL | HEIGHT [h] | WEIGHT (grams) |
|------------|------------|----------------|
| LPD90S-15B | 15 | 150.9 |
| LPD90S-20B | 20 | 164.0 |
| LPD90S-25B | 25 | 177.1 |
| LPD90S-30B | 30 | 190.2 |

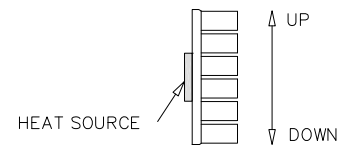
MATERIAL : A 6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



- △ LPD90S-15B
- LPD90S-20B
- LPD90S-25B
- ▲ LPD90S-30B

- DUCTED CONDITION
DUMMY HEATER SIZE: 25.4 SQ
THERMAL RESISTANCE _____
PRESSURE DROP - - - - -
- NATURAL CONVECTION
DUMMY HEATER SIZE: 25.4 SQ
DISSIPATED POWER: 18.6(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

- BASED ON ALPHA'S STANDARD TEST PROCEDURE. REFER TO TECHNICAL INFORMATION.

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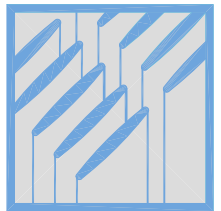
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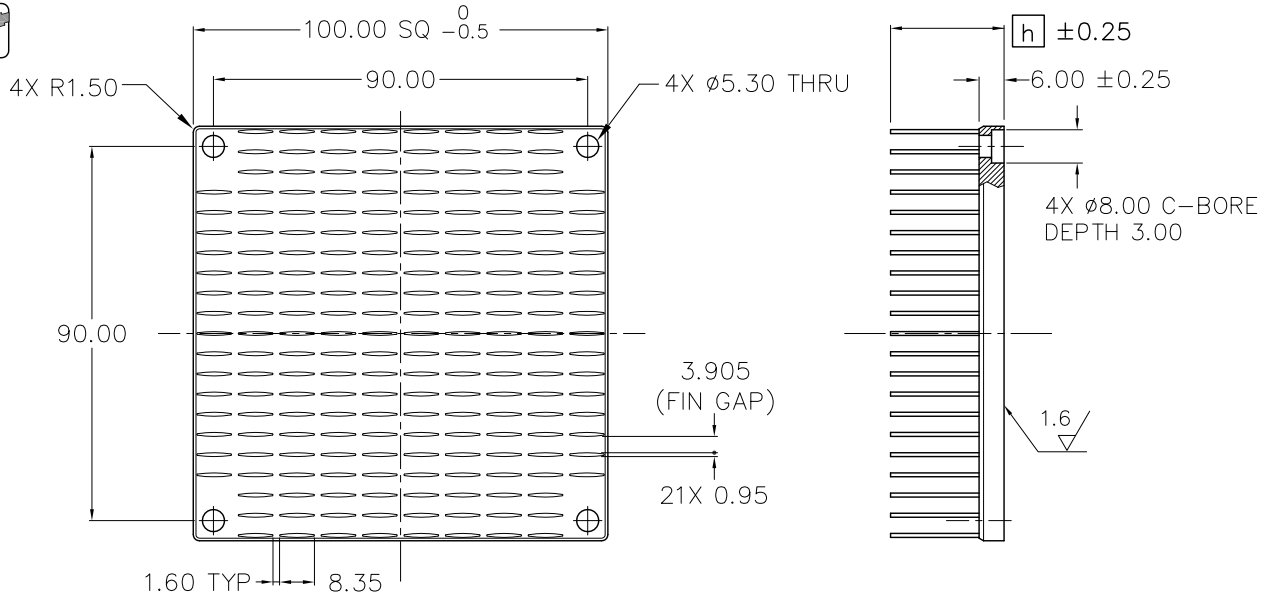
ALPHA

Low Pressure Drop Heat Sink
with attachment holes

LPD100S



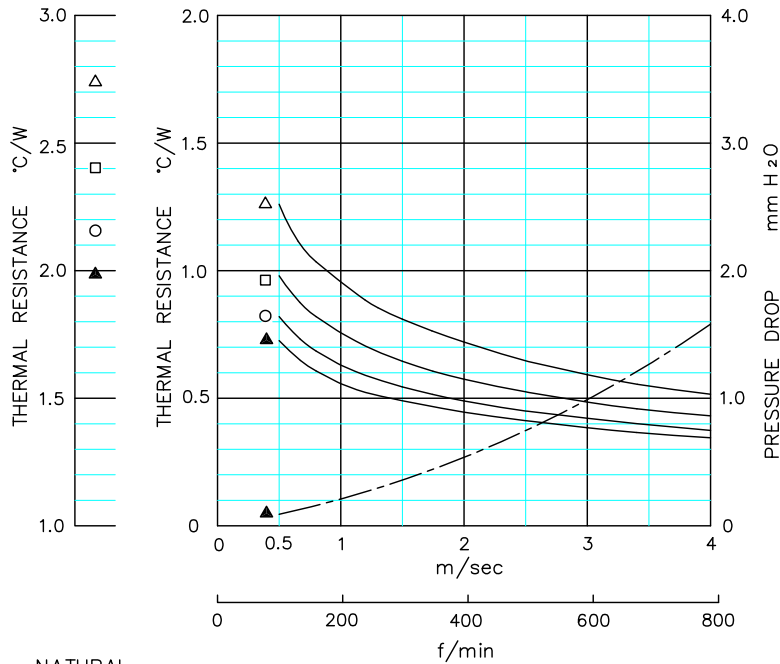
DIM



| MODEL | HEIGHT h | WEIGHT (grams) |
|-------------|------------|----------------|
| LPD100S-15B | 15 | 187.3 |
| LPD100S-20B | 20 | 203.7 |
| LPD100S-25B | 25 | 220.0 |
| LPD100S-30B | 30 | 236.4 |

MATERIAL : A 6063
FINISH : BLACK ANODIZE
DIMENSIONS : mm

DATA



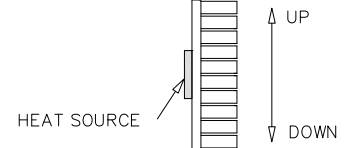
NATURAL CONVECTION

AIR VELOCITY: DUCTED CONDITION

- △ LPD100S-15B
- LPD100S-20B
- LPD100S-25B
- ▲ LPD100S-30B

● DUCTED CONDITION
DUMMY HEATER SIZE: 25.4 SQ
THERMAL RESISTANCE ———
PRESSURE DROP - - - - -

● NATURAL CONVECTION
DUMMY HEATER SIZE: 25.4 SQ
DISSIPATED POWER: 20.6(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

■ BASED ON ALPHA'S STANDARD TEST PROCEDURE.
REFER TO TECHNICAL INFORMATION.

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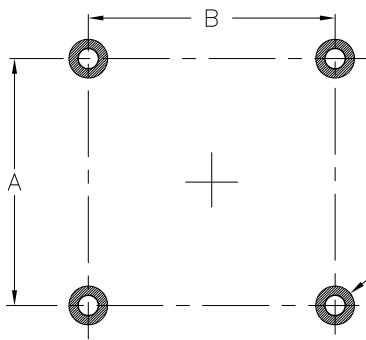
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REF



● BOARD KEEPOUT PATTERNS

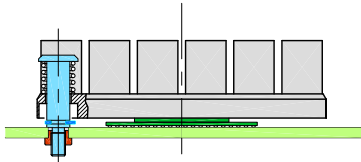


| | | |
|--------------------|------|------|
| LPD80S AND UB80S | 70.0 | 70.0 |
| LPD90S AND UB90S | 80.0 | 80.0 |
| LPD100S AND UB100S | 90.0 | 90.0 |
| MODEL | A | B |

ø8.0 KEEP-OUT AREA
NO COMPONENT PLACEMENT

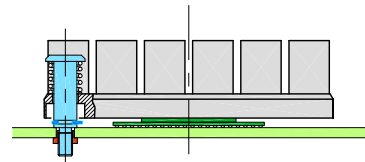
● INSTALLATION

USE PEM SMTSO-M3-**



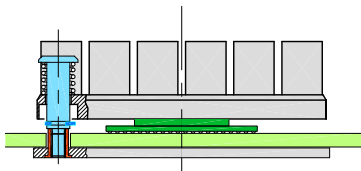
REQUIRES ø4.22 THRU HOLES IN BOARD.
PEM NUTS NEED THE SOLDERING.

USE MAC8 TH-1.6-**-M3



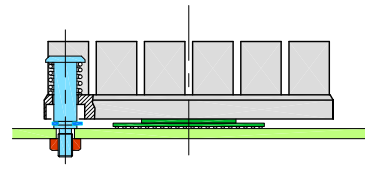
REQUIRES ø3.70 THRU HOLES IN BOARD.
MAC8 THREAD INSERT NEED THE SOLDERING.
RECOMMENDED P.C.B THICKNESS
MIN 1.6mm ~ MAX 3.7mm

USE ALPHA STANDARD BACKING PLATE



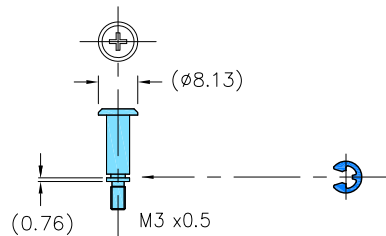
REQUIRES ø4.80 THRU HOLES IN BOARD.

USE HEX NUTS M3x0.5



REQUIRES ø3.30 THRU HOLES IN BOARD.

SHOULDER-SCREW / RETAINING RING E-3.0



REFER TO THE DRAWING FOR DETAIL SPECIFICATION.