

LPDM Series  
LPDH Series  
LPDP Series

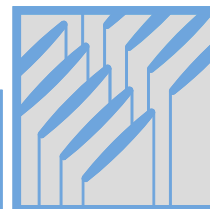
Low Pressure Drop Heat Sink  
with Attachment Holes

**ALPHA**

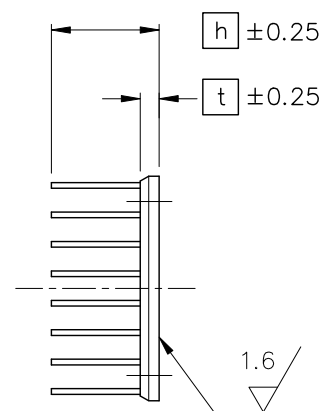
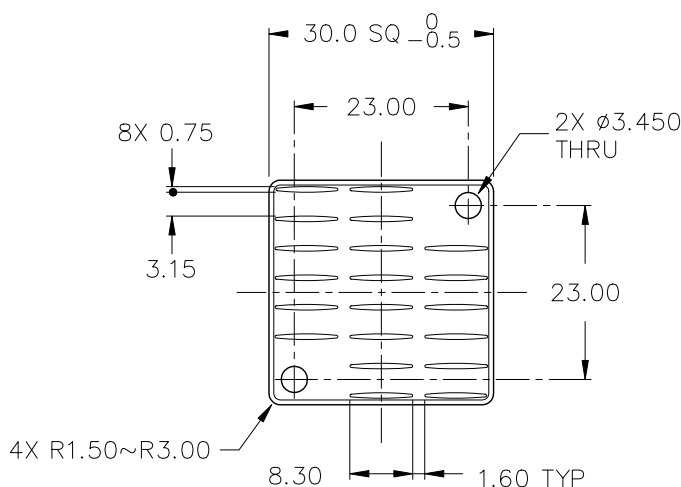
# ALPHA

Low Pressure Drop Heat Sink  
with attachment holes

# LPDM30



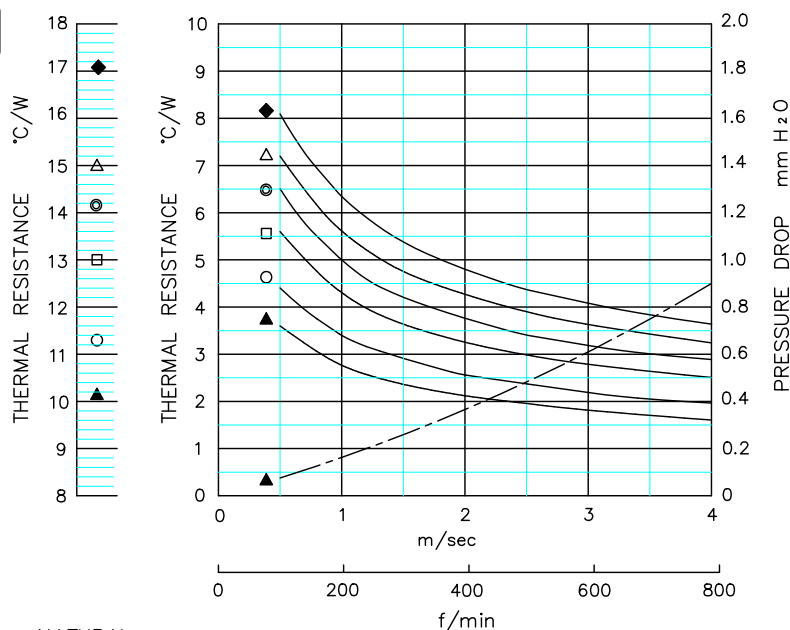
DIM



| MODEL         | HEIGHT [h]            | THICKNESS [t] | WEIGHT (grams) |
|---------------|-----------------------|---------------|----------------|
| LPDM30-8BP    | 8                     | 2.00          | 6.2            |
| LPDM30-10BP   | 10                    | 2.50          | 7.7            |
| LPDM30-12BP   | 12                    |               | 8.3            |
| LPDM30-15BP   | 15                    |               | 9.1            |
| LPDM30-20BP   | 20                    |               | 10.5           |
| LPDM30-25BP   | 25                    |               | 11.8           |
| LPDM30-[h] BP | $8 \leq [h] < 10$     | 2.00          | -              |
|               | $10 \leq [h] \leq 25$ | 2.50          | -              |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA

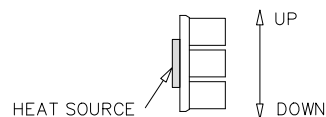


NATURAL  
CONVECTION

AIR VELOCITY: DUCTED CONDITION

- ◆ LPDM30-8BP
- △ LPDM30-10BP
- ⊙ LPDM30-12BP
- LPDM30-15BP
- LPDM30-20BP
- ▲ LPDM30-25BP

- DUCTED CONDITION  
DUMMY HEATER SIZE: 12.7 SQ  
THERMAL RESISTANCE ———  
PRESSURE DROP - - - - -
- NATURAL CONVECTION  
DUMMY HEATER SIZE: 12.7 SQ  
DISSIPATED POWER: 3.9(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  
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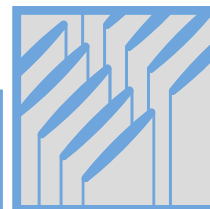
Alpha Novatech, Inc. - a subsidiary of Alpha Company.

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PHONE +1(408)567-8082  
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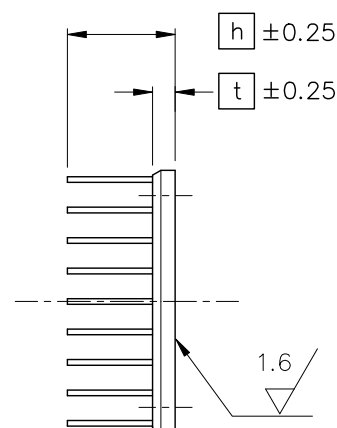
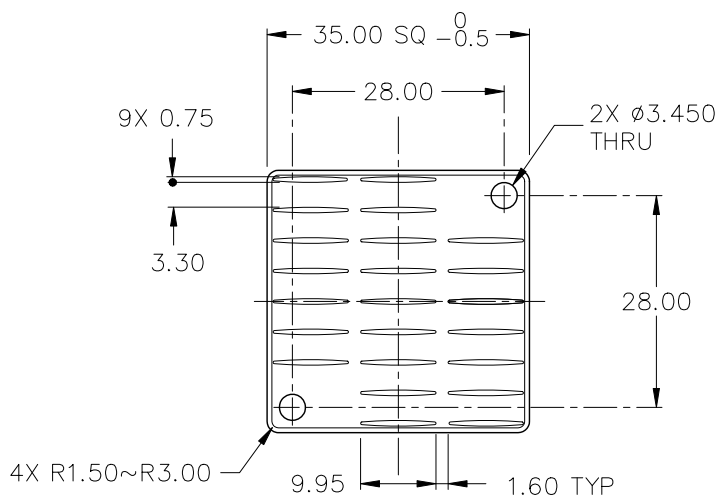
# ALPHA

Low Pressure Drop Heat Sink  
with attachment holes

# LPDM35



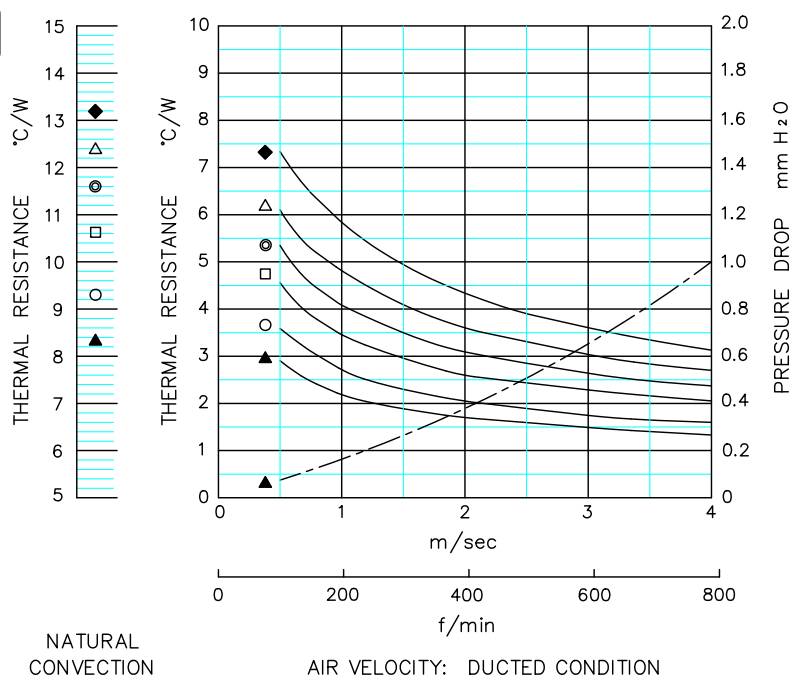
DIM



| MODEL         | HEIGHT [h]            | THICKNESS [t] | WEIGHT (grams) |
|---------------|-----------------------|---------------|----------------|
| LPDM35-8BP    | 8                     | 2.00          | 8.5            |
| LPDM35-10BP   | 10                    | 3.00          | 12.1           |
| LPDM35-12BP   | 12                    |               | 12.8           |
| LPDM35-15BP   | 15                    |               | 14.0           |
| LPDM35-20BP   | 20                    |               | 15.8           |
| LPDM35-25BP   | 25                    |               | 17.7           |
| LPDM35-[h] BP | $8 \leq [h] < 10$     | 2.00          | -              |
|               | $10 \leq [h] \leq 25$ | 3.00          | -              |

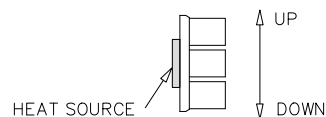
MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- ◆ LPDM35-8BP
- △ LPDM35-10BP
- ◎ LPDM35-12BP
- LPDM35-15BP
- LPDM35-20BP
- ▲ LPDM35-25BP

- DUCTED CONDITION  
DUMMY HEATER SIZE: 12.7 SQ  
THERMAL RESISTANCE ———  
PRESSURE DROP - - - - -
- NATURAL CONVECTION  
DUMMY HEATER SIZE: 12.7 SQ  
DISSIPATED POWER: 4.7(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

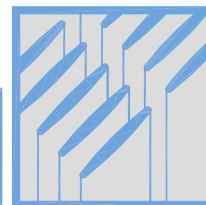
- BASED ON ALPHA'S STANDARD TEST PROCEDURE.  
REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

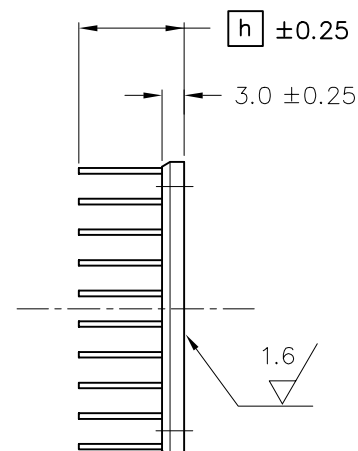
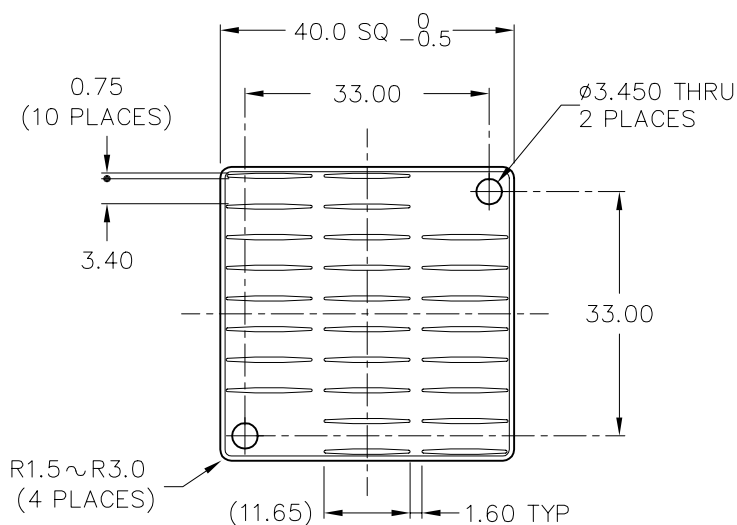
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**ALPHA**Low Pressure Drop Heat Sink  
with attachment holes**LPDM40**

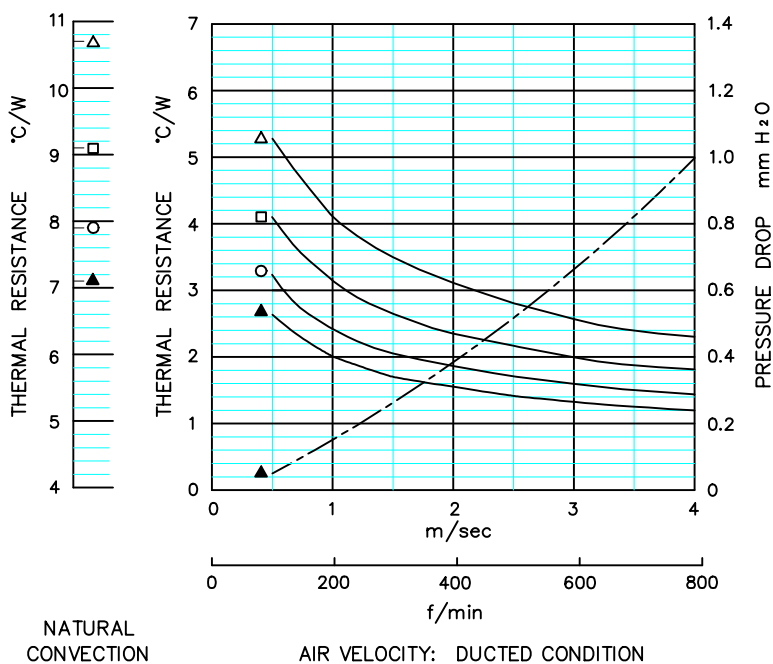
DIM



| MODEL       | HEIGHT [h] | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDM40-10BP | 10         | 15.7           |
| LPDM40-15BP | 15         | 18.1           |
| LPDM40-20BP | 20         | 20.6           |
| LPDM40-25BP | 25         | 23.0           |

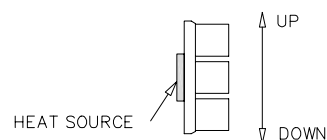
MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- △ LPDM40-10BP
- LPDM40-15BP
- LPDM40-20BP
- ▲ LPDM40-25BP

- DUCTED CONDITION  
DUMMY HEATER SIZE: 12.7 SQ  
THERMAL RESISTANCE ———  
PRESSURE DROP - - - - -
- NATURAL CONVECTION  
DUMMY HEATER SIZE: 12.7 SQ  
DISSIPATED POWER: 6.0(W)



NOTE ORIENTATION OF HEAT SINK USED  
FOR NATURAL CONVECTION TESTING

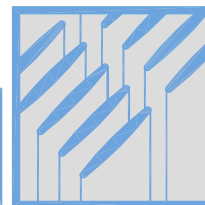
- BASED ON ALPHA'S STANDARD TEST PROCEDURE.  
REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

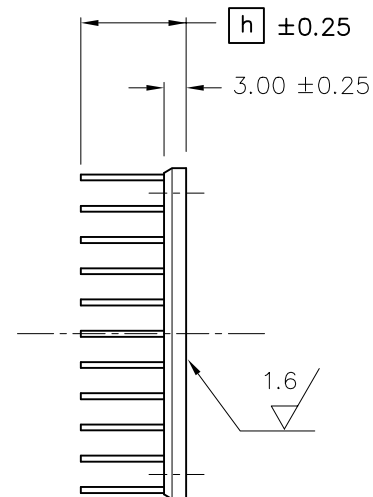
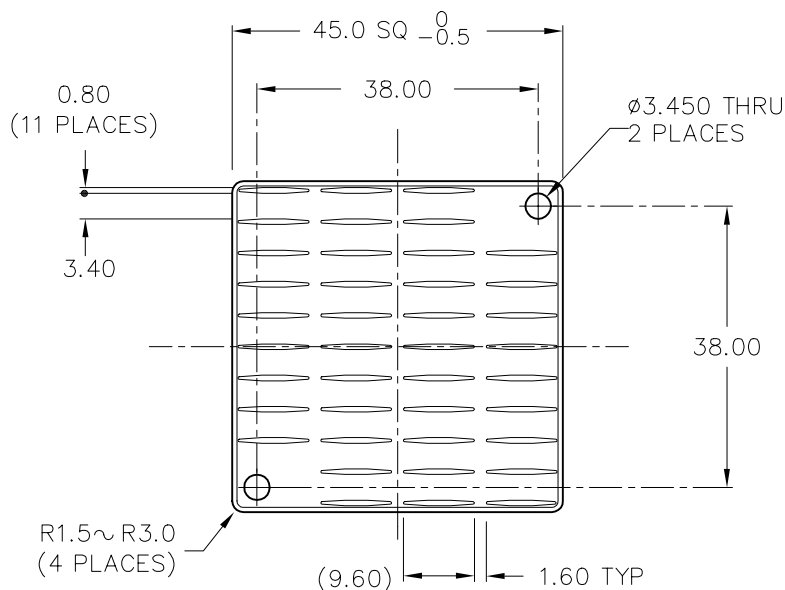
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**ALPHA**Low Pressure Drop Heat Sink  
with attachment holes**LPDM 45**

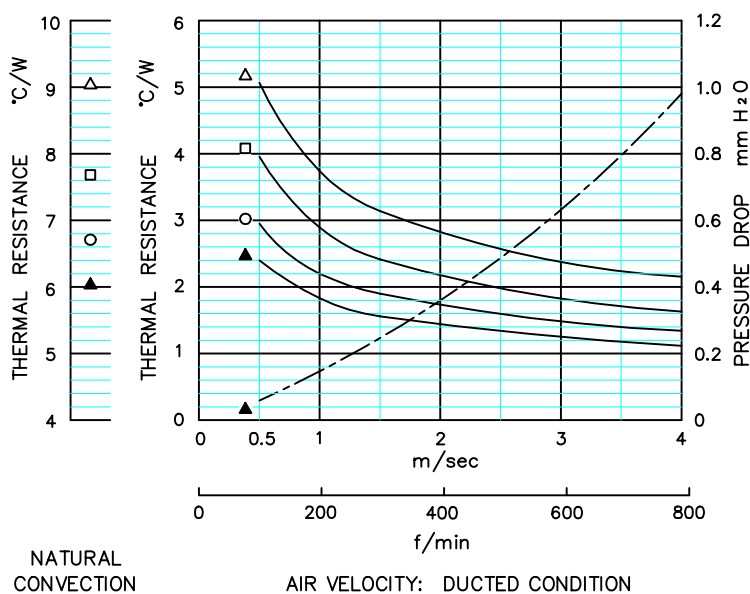
DIM



| MODEL       | HEIGHT $h$ | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDM45-10BP | 10         | 20.6           |
| LPDM45-15BP | 15         | 23.8           |
| LPDM45-20BP | 20         | 26.9           |
| LPDM45-25BP | 25         | 30.1           |

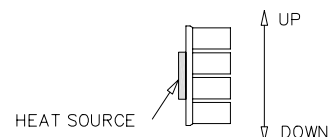
MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



- △ LPDM45-10BP
- LPDM45-15BP
- LPDM45-20BP
- ▲ LPDM45-25BP

- DUCTED CONDITION  
 DUMMY HEATER SIZE: 12.7 SQ  
 THERMAL RESISTANCE ———  
 PRESURE DROP - - - - -
- NATURAL CONVECTION  
 DUMMY HEATER SIZE: 12.7 SQ  
 DISSIPATED POWER: 7.5(W)



NOTE ORIENTATION OF HEAT SINK USED  
 FOR NATURAL CONVECTION TESTING

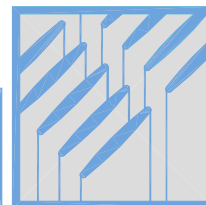
- BASED ON ALPHA'S STANDARD TEST  
 PROCEDURE.  
 REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

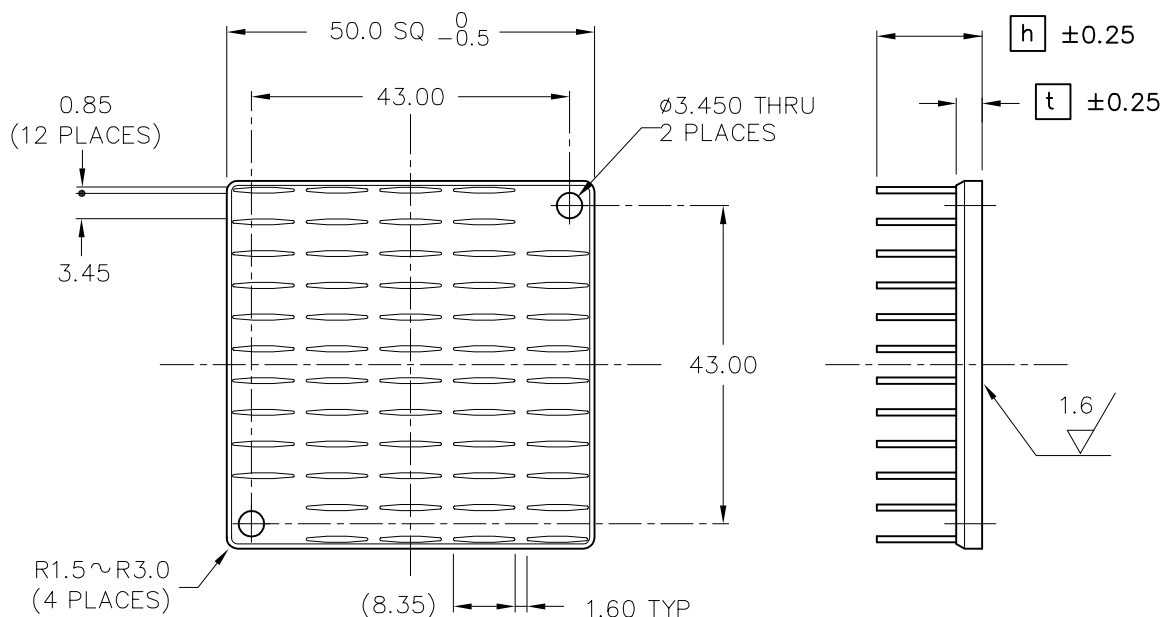
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**ALPHA**Low Pressure Drop Heat Sink  
with attachment holes**LPDM 50**

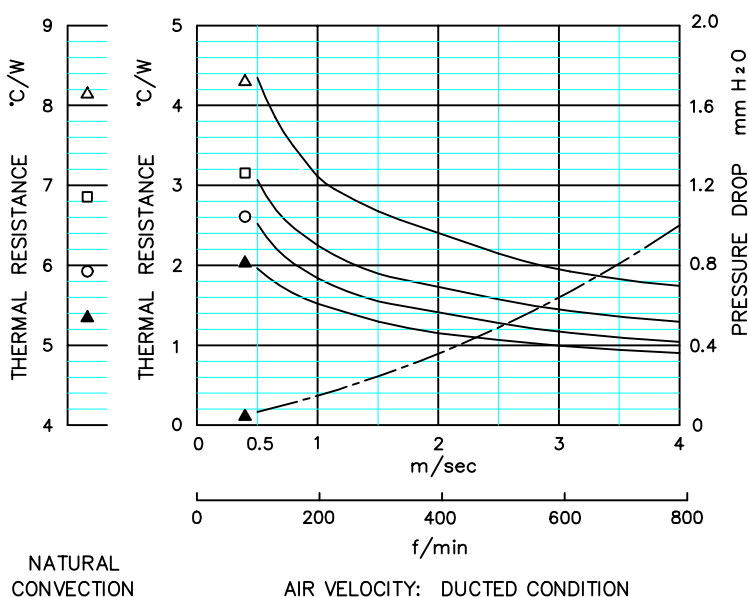
DIM



| MODEL       | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDM50-10BP | 10         | 3.0           | 29.9           |
| LPDM50-15BP | 15         | 3.5           | 35.4           |
| LPDM50-20BP | 20         |               | 37.9           |
| LPDM50-25BP | 25         |               | 40.5           |

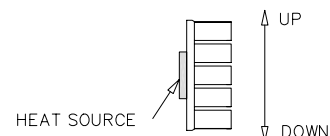
MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



- △ LPDM50-10BP
- LPDM50-15BP
- LPDM50-20BP
- ▲ LPDM50-25BP

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



NOTE ORIENTATION OF HEAT SINK USED  
 FOR NATURAL CONVECTION TESTING

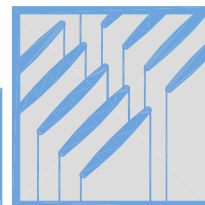
- BASED ON ALPHA'S STANDARD TEST  
 PROCEDURE.  
 REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

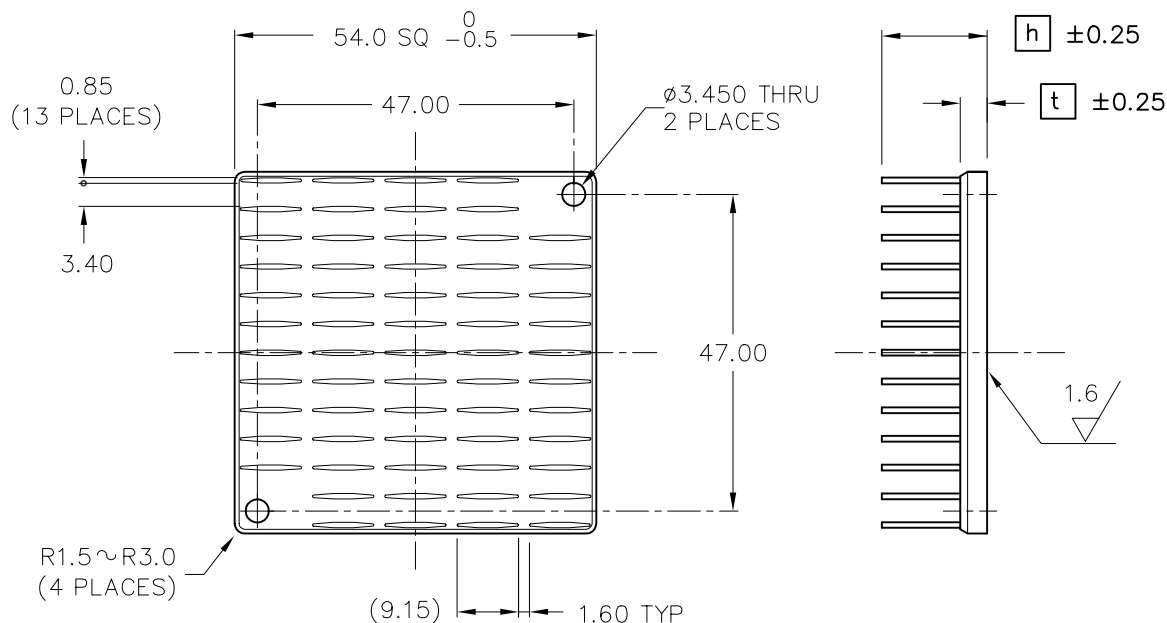
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**ALPHA**Low Pressure Drop Heat Sink  
with attachment holes**LPDM 54**

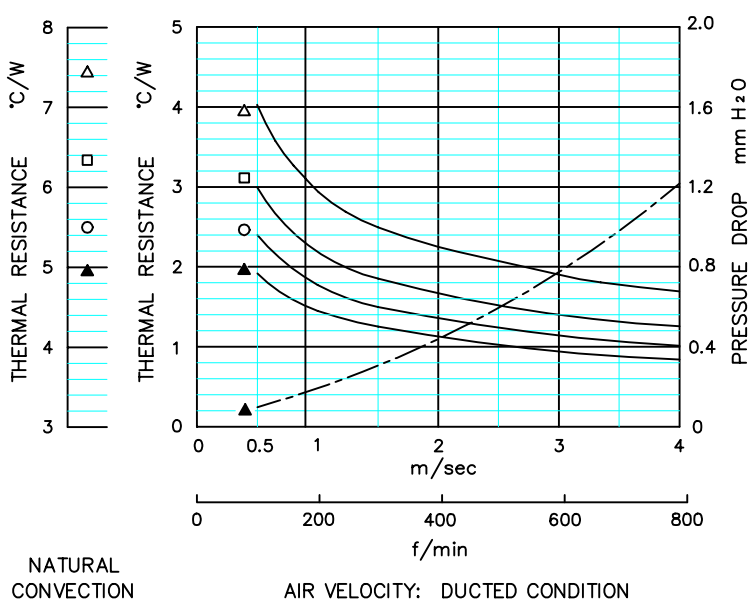
DIM



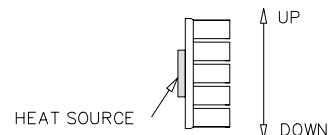
| MODEL       | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDM54-10BP | 10         | 3.0           | 30.4           |
| LPDM54-15BP | 15         | 4.0           | 41.5           |
| LPDM54-20BP | 20         |               | 46.1           |
| LPDM54-25BP | 25         |               | 50.7           |

MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



- $\Delta$  LPDM54-10BP
- $\square$  LPDM54-15BP
- $\circ$  LPDM54-20BP
- $\blacktriangle$  LPDM54-25BP
- DUCTED CONDITION  
DUMMY HEATER SIZE: 12.7 SQ  
THERMAL RESISTANCE ———  
PRESURE DROP - - -
- NATURAL CONVECTION  
DUMMY HEATER SIZE: 12.7 SQ  
DISSIPATED POWER: 8.3(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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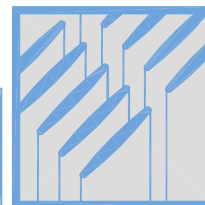
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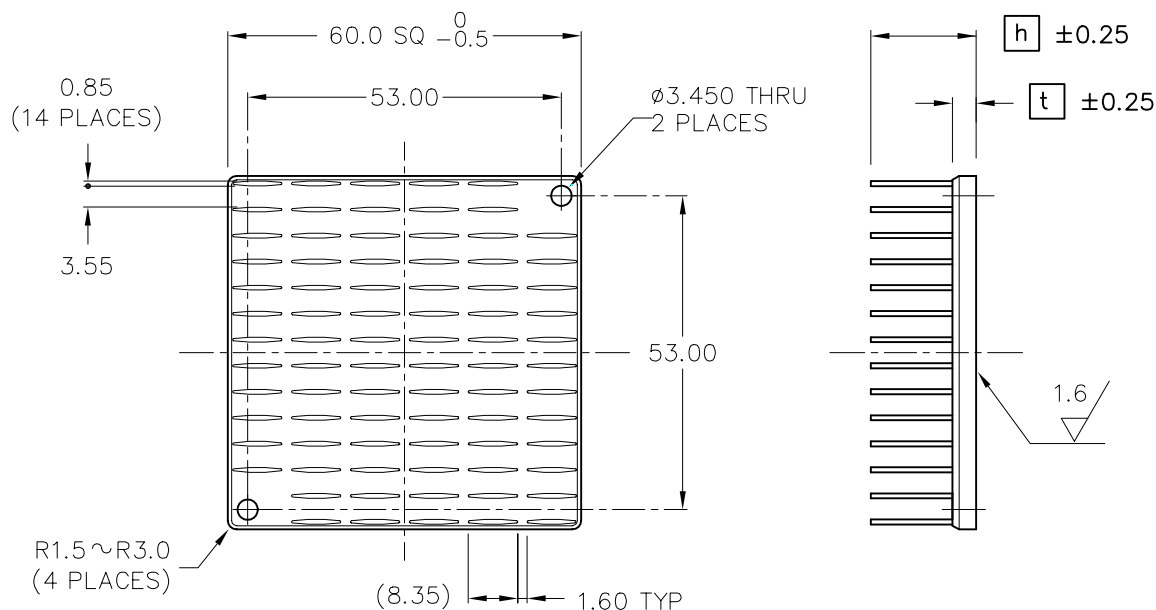
# ALPHA

Low Pressure Drop Heat Sink  
with attachment holes

# LPDM 60



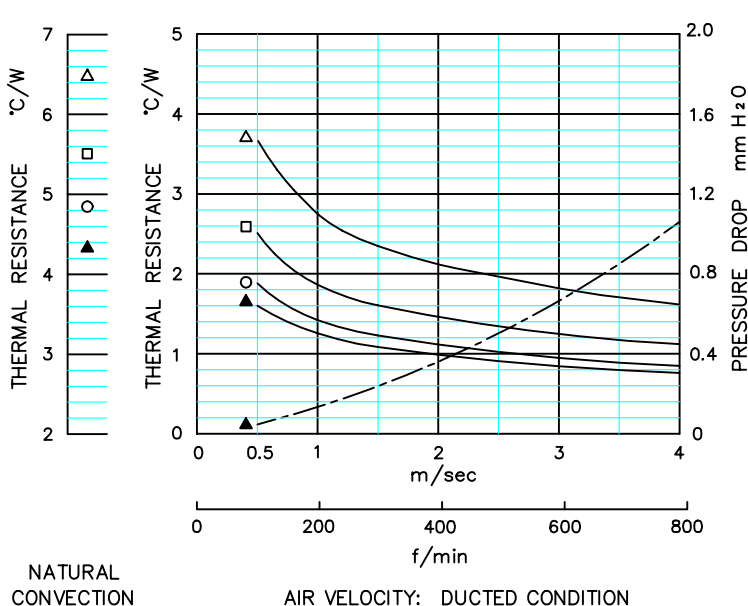
DIM



| MODEL       | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDM60-10BP | 10         | 3.0           | 36.8           |
| LPDM60-15BP | 15         | 4.0           | 50.6           |
| LPDM60-20BP | 20         |               | 56.1           |
| LPDM60-25BP | 25         |               | 61.6           |

MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



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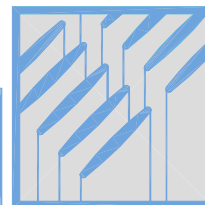
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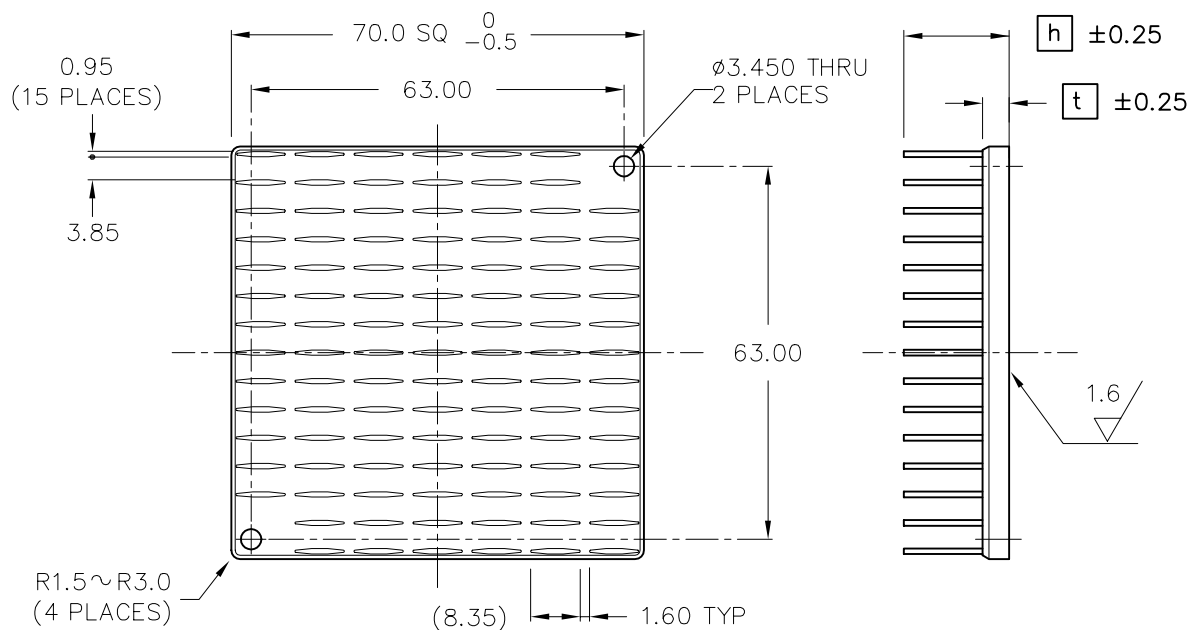
# ALPHA

## Low Pressure Drop Heat Sink with attachment holes

# LPDM 70



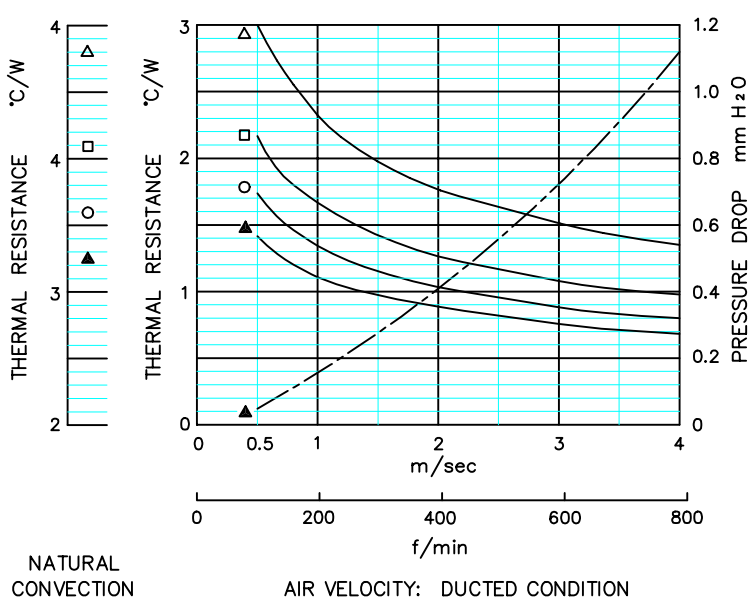
DIM



| MODEL       | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDM70-10BP | 10         | 3.0           | 59.4           |
| LPDM70-15BP | 15         | 4.0           | 70.9           |
| LPDM70-20BP | 20         |               | 78.8           |
| LPDM70-25BP | 25         |               | 86.8           |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

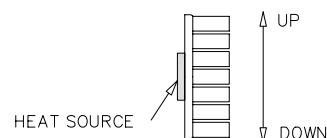
DATA



$\Delta$  LPDM70-10BP  
 $\square$  LPDM70-15BP  
 $\circ$  LPDM70-20BP  
 $\blacktriangle$  LPDM70-25BP

$\bullet$  DUCTED CONDITION  
DUMMY HEATER SIZE: 12.7 SQ  
THERMAL RESISTANCE (solid line)  
PRESURE DROP (dashed line)

$\circ$  NATURAL CONVECTION  
DUMMY HEATER SIZE: 25.4 SQ  
DISSIPATED POWER: 13.3(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

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

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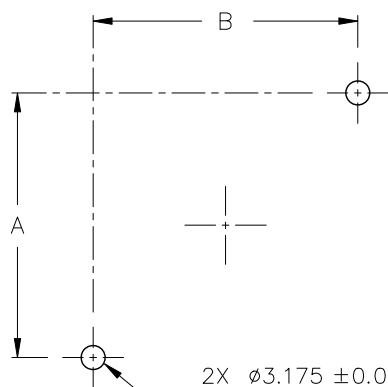
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REF



## PCB HOLE LAYOUT



2X  $\phi 3.175 \pm 0.05$  [ $\phi .125 \pm .002$ ]

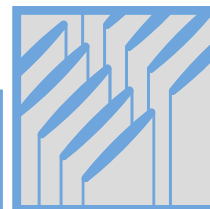
USE OF PLATED HOLES TO REDUCE EXCESSIVE WEAR  
AND INSERTION FORCE IS RECOMMENDED.

|                     |      |      |
|---------------------|------|------|
| LPDM30, UBM30, ZM30 | 23.0 | 23.0 |
| LPDM35, UBM35, ZM35 | 28.0 | 28.0 |
| LPDM40, UBM40, ZM40 | 33.0 | 33.0 |
| LPDM45, UBM45, ZM45 | 38.0 | 38.0 |
| LPDM50, UBM50, ZM50 | 43.0 | 43.0 |
| LPDM54, UBM54, ZM54 | 47.0 | 47.0 |
| LPDM60, UBM60, ZM60 | 53.0 | 53.0 |
| LPDM70, UBM70       | 63.0 | 63.0 |
| MODEL               | A    | B    |

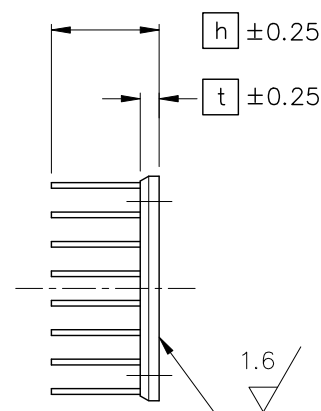
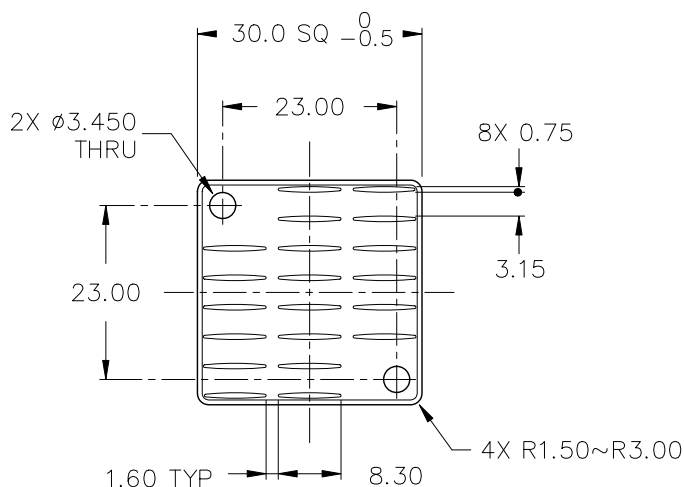
# ALPHA

Low Pressure Drop Heat Sink  
with attachment holes

# LPDH 30



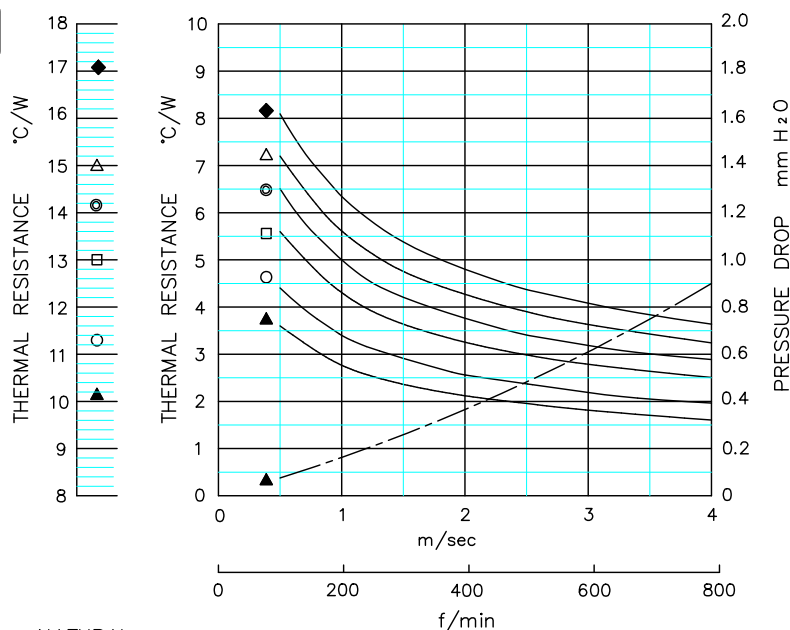
DIM



| MODEL         | HEIGHT [h]            | THICKNESS [t] | WEIGHT (grams) |
|---------------|-----------------------|---------------|----------------|
| LPDH30-8BP    | 8                     | 2.00          | 6.2            |
| LPDH30-10BP   | 10                    | 2.50          | 7.7            |
| LPDH30-12BP   | 12                    |               | 8.3            |
| LPDH30-15BP   | 15                    |               | 9.1            |
| LPDH30-20BP   | 20                    |               | 10.5           |
| LPDH30-25BP   | 25                    |               | 11.8           |
| LPDH30-[h] BP | $8 \leq [h] < 10$     | 2.00          | —              |
|               | $10 \leq [h] \leq 25$ | 2.50          | —              |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA

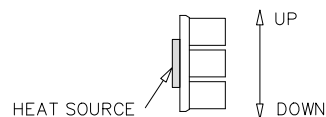


NATURAL  
CONVECTION

AIR VELOCITY: DUCTED CONDITION

- ◆ LPDH30-8BP
- △ LPDH30-10BP
- ◎ LPDH30-12BP
- LPDH30-15BP
- LPDH30-20BP
- ▲ LPDH30-25BP

- DUCTED CONDITION  
DUMMY HEATER SIZE: 12.7 SQ  
THERMAL RESISTANCE ———  
PRESSURE DROP - - - -
- NATURAL CONVECTION  
DUMMY HEATER SIZE: 12.7 SQ  
DISSIPATED POWER: 3.9(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>

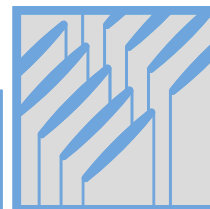
Alpha Novatech, Inc. - a subsidiary of Alpha Company.

473 Sapena Ct. #12 Santa Clara, CA 95054 USA  
PHONE +1(408)567-8082  
FAX +1(408)567-8053  
E mail : sales@alphanovatech.com  
URL : <http://www.alphanovatech.com>

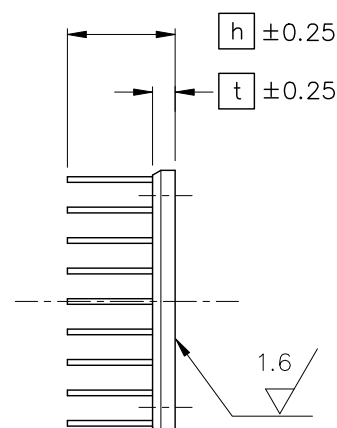
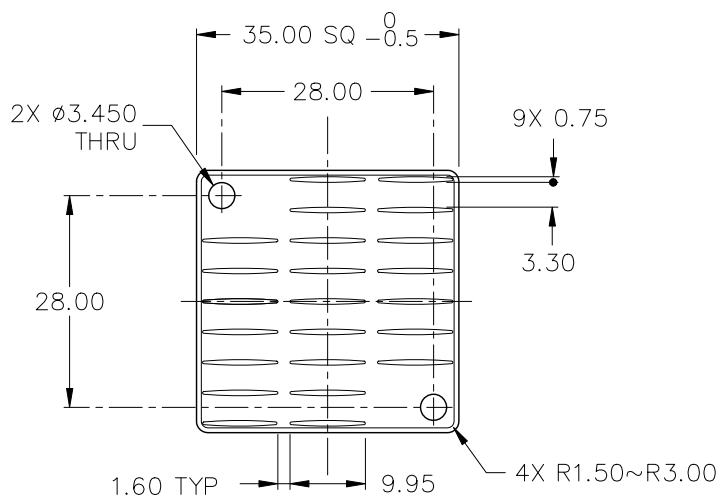
# ALPHA

Low Pressure Drop Heat Sink  
with attachment holes

# LPDH 35



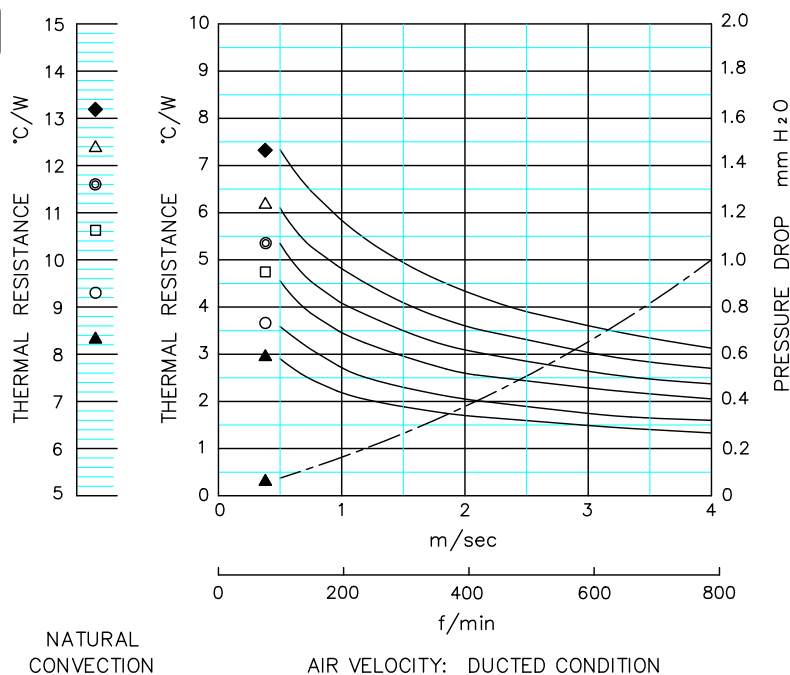
DIM



| MODEL         | HEIGHT [h]            | THICKNESS [t] | WEIGHT (grams) |
|---------------|-----------------------|---------------|----------------|
| LPDH35-8BP    | 8                     | 2.00          | 8.5            |
| LPDH35-10BP   | 10                    | 3.00          | 12.1           |
| LPDH35-12BP   | 12                    |               | 12.8           |
| LPDH35-15BP   | 15                    |               | 14.0           |
| LPDH35-20BP   | 20                    |               | 15.8           |
| LPDH35-25BP   | 25                    |               | 17.7           |
| LPDH35-[h] BP | $8 \leq [h] < 10$     | 2.00          | —              |
|               | $10 \leq [h] \leq 25$ | 3.00          | —              |

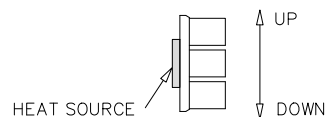
MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- ◆ LPDH35-8BP
- △ LPDH35-10BP
- ⊙ LPDH35-12BP
- LPDH35-15BP
- LPDH35-20BP
- ▲ LPDH35-25BP

- DUCTED CONDITION  
DUMMY HEATER SIZE: 12.7 SQ  
THERMAL RESISTANCE ———  
PRESSURE DROP - - - - -
- NATURAL CONVECTION  
DUMMY HEATER SIZE: 12.7 SQ  
DISSIPATED POWER: 4.7(W)



NOTE ORIENTATION OF HEAT SINK USED  
FOR NATURAL CONVECTION TESTING

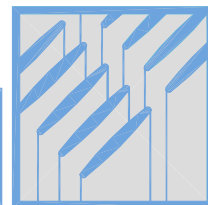
- BASED ON ALPHA'S STANDARD TEST  
PROCEDURE.  
REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

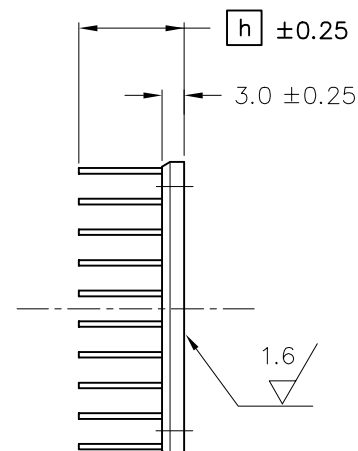
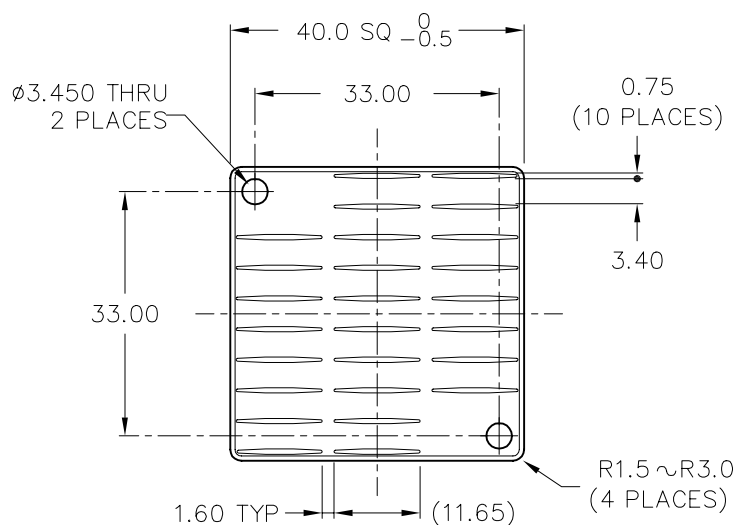
256-1 UEDA, NUMAZU-CITY SHIZUOKA-PREF., JAPAN  
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E mail : sales@alphanovatech.com  
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**ALPHA****Low Pressure Drop Heat Sink  
with attachment holes****LPDH 40**

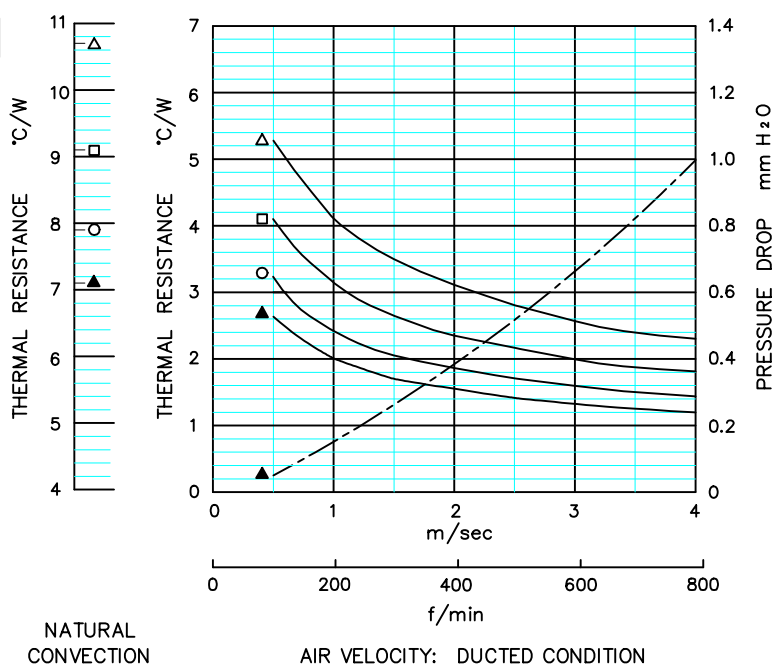
DIM



| MODEL       | HEIGHT [h] | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDH40-10BP | 10         | 15.7           |
| LPDH40-15BP | 15         | 18.1           |
| LPDH40-20BP | 20         | 20.6           |
| LPDH40-25BP | 25         | 23.0           |

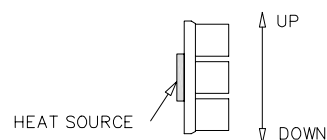
MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



- △ LPDH40-10BP
- LPDH40-15BP
- LPDH40-20BP
- ▲ LPDH40-25BP

- DUCTED CONDITION  
 DUMMY HEATER SIZE: 12.7 SQ  
 THERMAL RESISTANCE \_\_\_\_\_  
 PRESURE DROP \_\_\_\_\_
- NATURAL CONVECTION  
 DUMMY HEATER SIZE: 12.7 SQ  
 DISSIPATED POWER: 6.0(W)



NOTE ORIENTATION OF HEAT SINK USED  
 FOR NATURAL CONVECTION TESTING

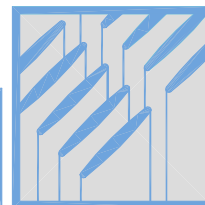
- BASED ON ALPHA'S STANDARD TEST  
 PROCEDURE.  
 REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

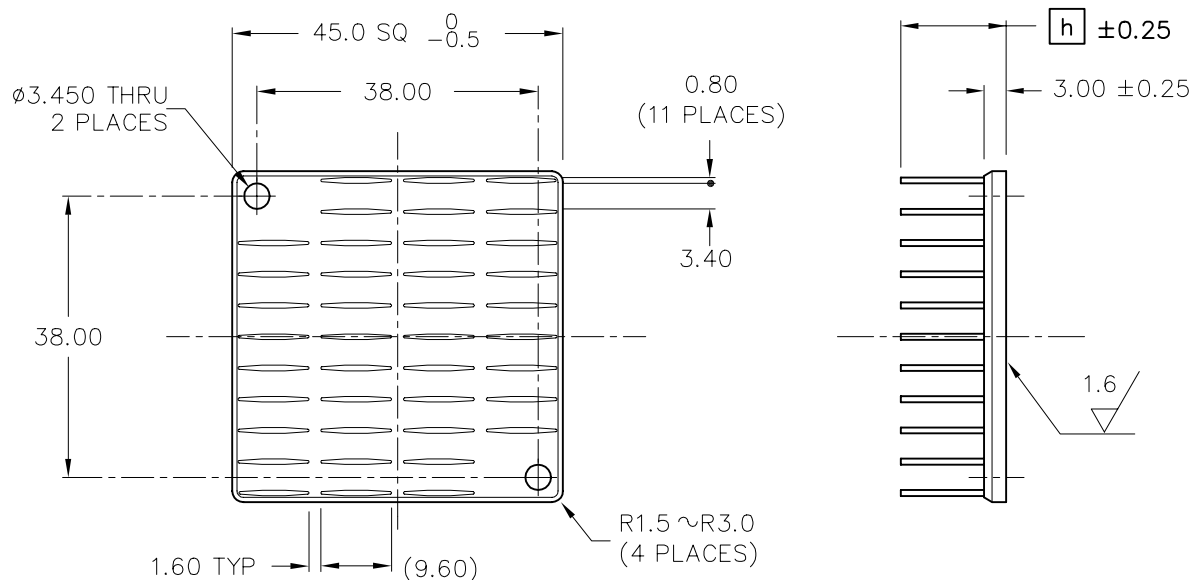
256-1 UEDA, NUMAZU-CITY SHIZUOKA-PREF., JAPAN  
 PHONE +81(55)966 0789  
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**ALPHA****Low Pressure Drop Heat Sink  
with attachment holes****LPDH 45**

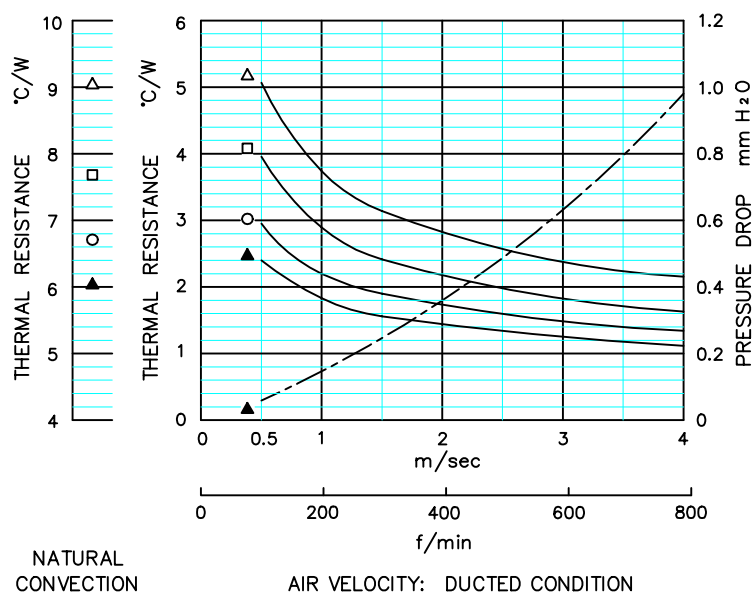
DIM



| MODEL       | HEIGHT $h$ | WEIGHT (grams) |
|-------------|------------|----------------|
| LPDH45-10BP | 10         | 20.6           |
| LPDH45-15BP | 15         | 23.8           |
| LPDH45-20BP | 20         | 26.9           |
| LPDH45-25BP | 25         | 30.1           |

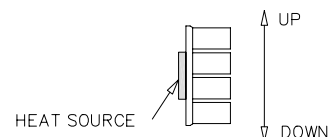
MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



- $\triangle$  LPDH45-10BP
- $\square$  LPDH45-15BP
- $\circ$  LPDH45-20BP
- $\blacktriangle$  LPDH45-25BP

- $\bullet$  DUCTED CONDITION  
 DUMMY HEATER SIZE: 12.7 SQ  
 THERMAL RESISTANCE ———  
 PRESURE DROP - - - - -
- $\bullet$  NATURAL CONVECTION  
 DUMMY HEATER SIZE: 12.7 SQ  
 DISSIPATED POWER: 7.5(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

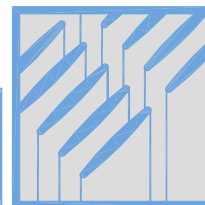
- $\blacksquare$  BASED ON ALPHA'S STANDARD TEST PROCEDURE.  
 REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

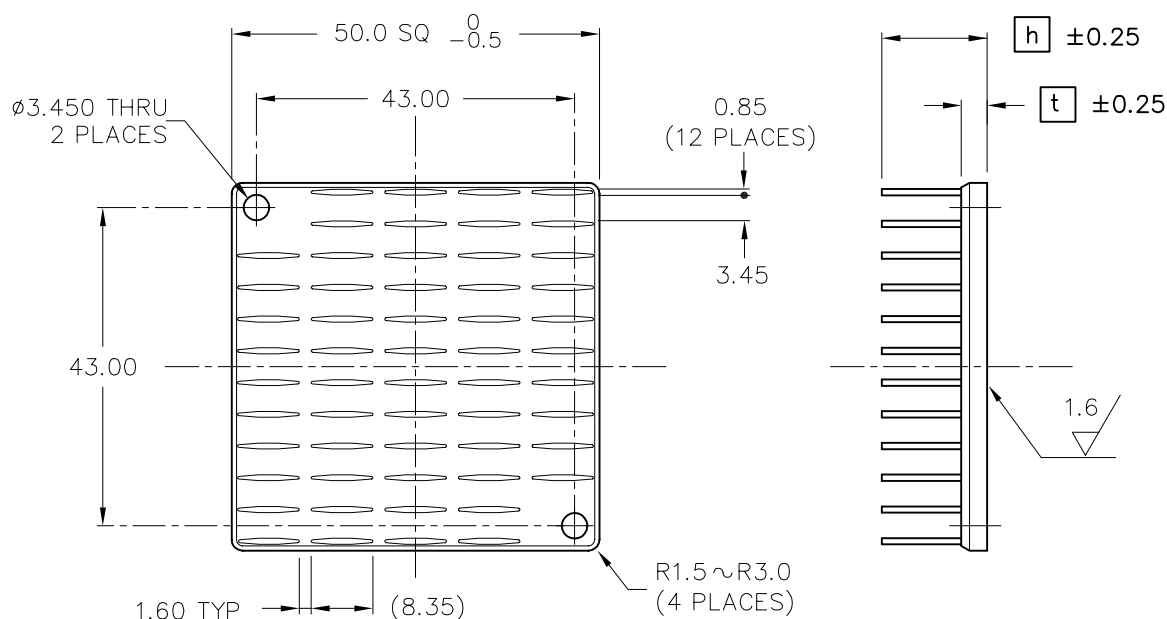
256-1 UEDA, NUMAZU-CITY SHIZUOKA-PREF., JAPAN  
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 URL : <http://www.alphanovatech.com>

**ALPHA**Low Pressure Drop Heat Sink  
with attachment holes**LPDH 50**

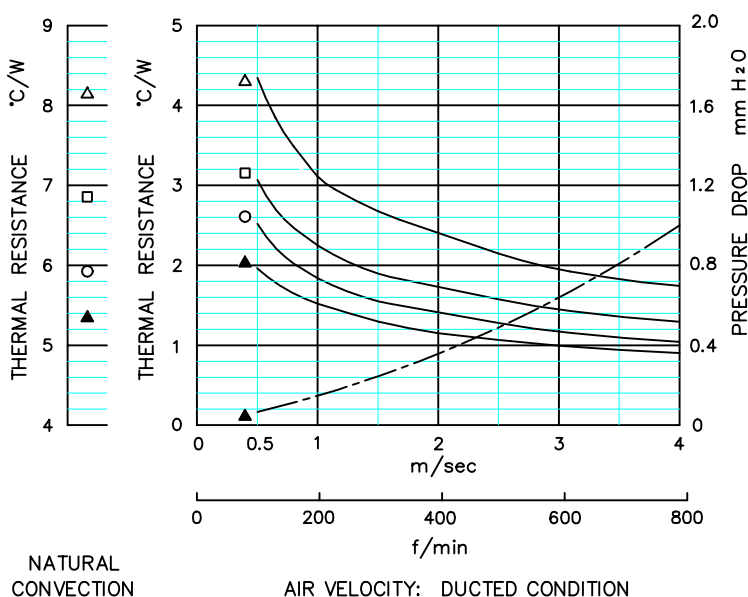
DIM



| MODEL       | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDH50-10BP | 10         | 3.0           | 29.9           |
| LPDH50-15BP | 15         | 3.5           | 35.4           |
| LPDH50-20BP | 20         |               | 37.9           |
| LPDH50-25BP | 25         |               | 40.5           |

MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA

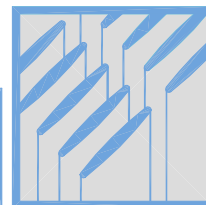


Alpha Company Ltd.

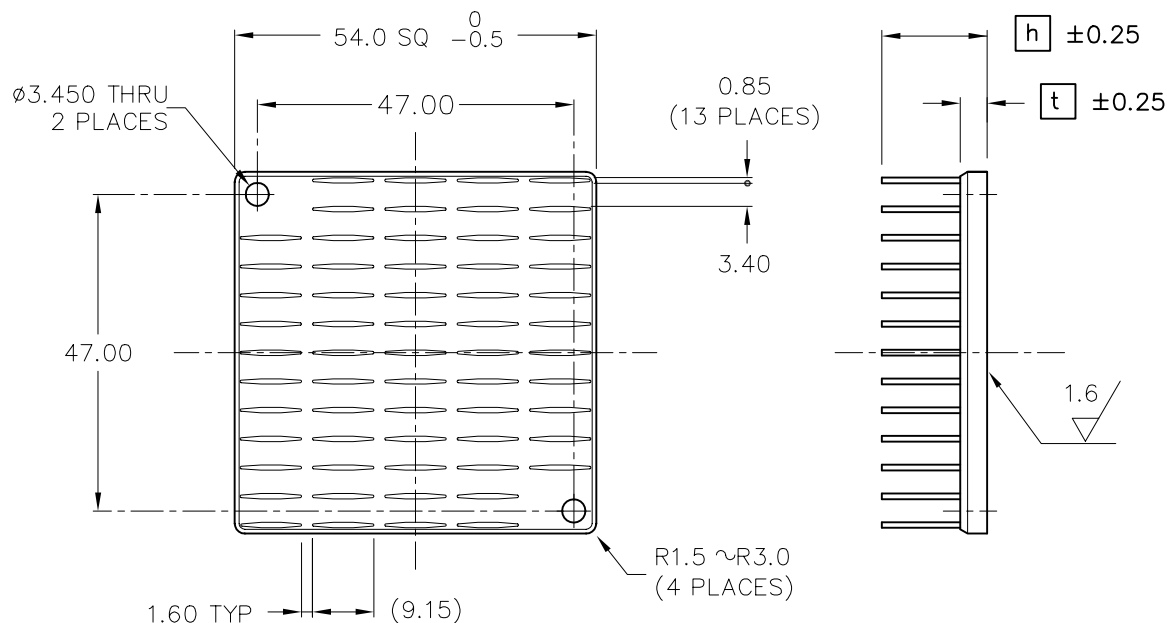
256-1 UEDA, NUMAZU-CITY SHIZUOKA-PREF., JAPAN  
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**ALPHA**Low Pressure Drop Heat Sink  
with attachment holes**LPDH 54**

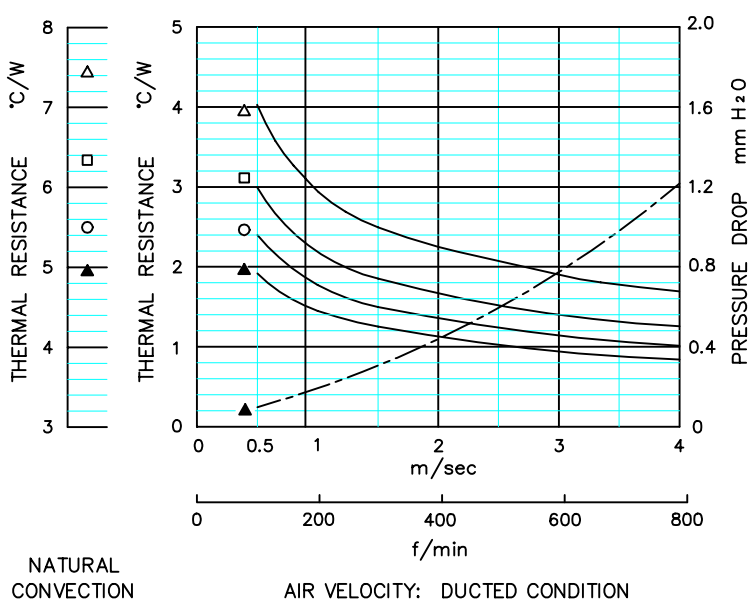
DIM



| MODEL       | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDH54-10BP | 10         | 3.0           | 30.4           |
| LPDH54-15BP | 15         | 4.0           | 41.5           |
| LPDH54-20BP | 20         |               | 46.1           |
| LPDH54-25BP | 25         |               | 50.7           |

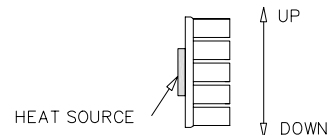
MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



- △ LPDH54-10BP
- LPDH54-15BP
- LPDH54-20BP
- ▲ LPDH54-25BP

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



NOTE ORIENTATION OF HEAT SINK USED  
 FOR NATURAL CONVECTION TESTING

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

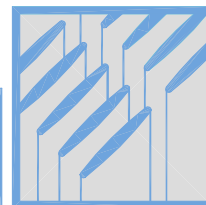
Alpha Company Ltd.

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 PHONE +81(55)966 0789  
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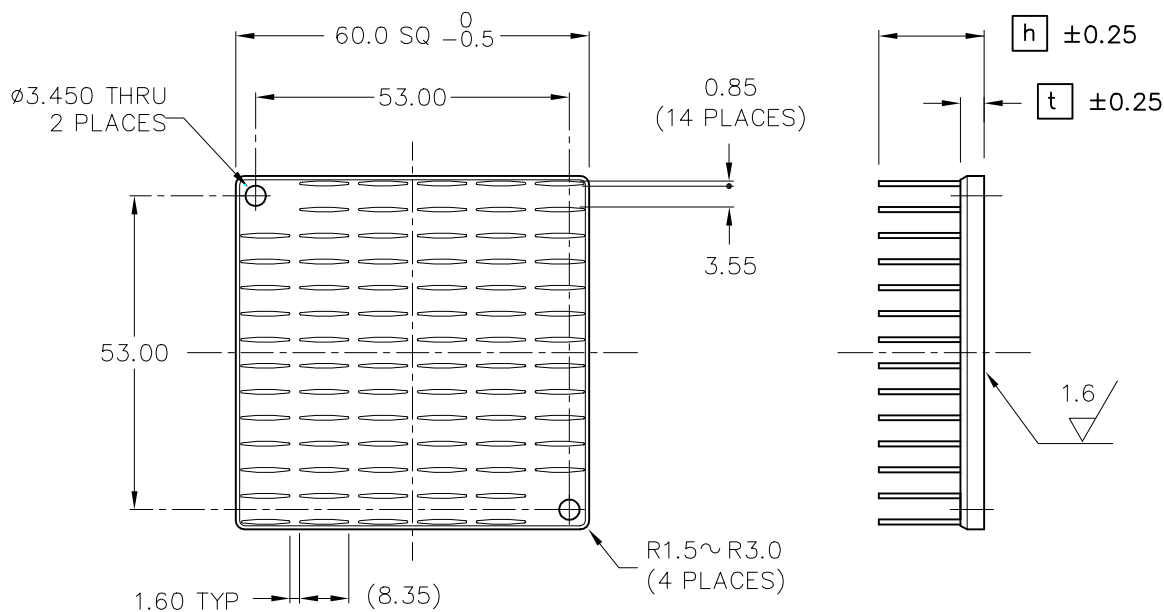
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**ALPHA**Low Pressure Drop Heat Sink  
with attachment holes**LPDH 60**

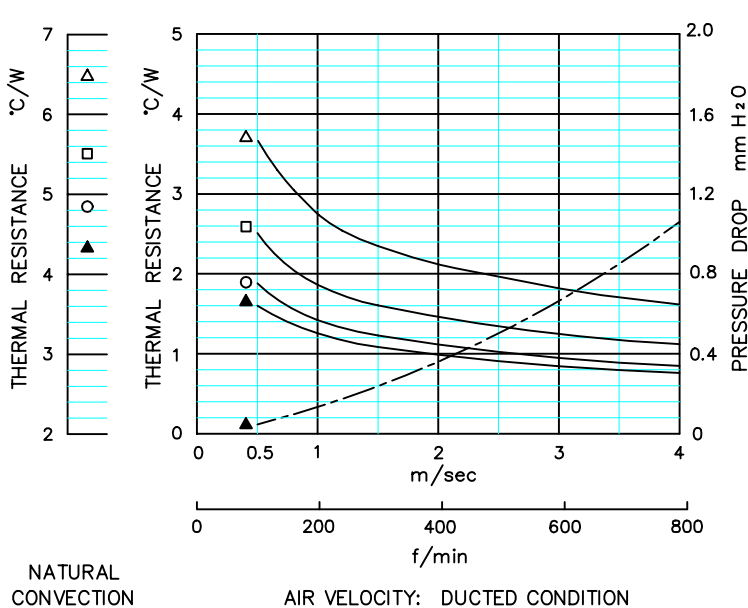
DIM



| MODEL       | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDH60-10BP | 10         | 3.0           | 36.8           |
| LPDH60-15BP | 15         | 4.0           | 50.6           |
| LPDH60-20BP | 20         |               | 56.1           |
| LPDH60-25BP | 25         |               | 61.6           |

MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA

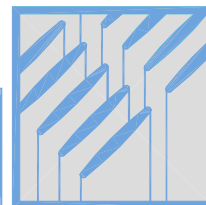


Alpha Company Ltd.

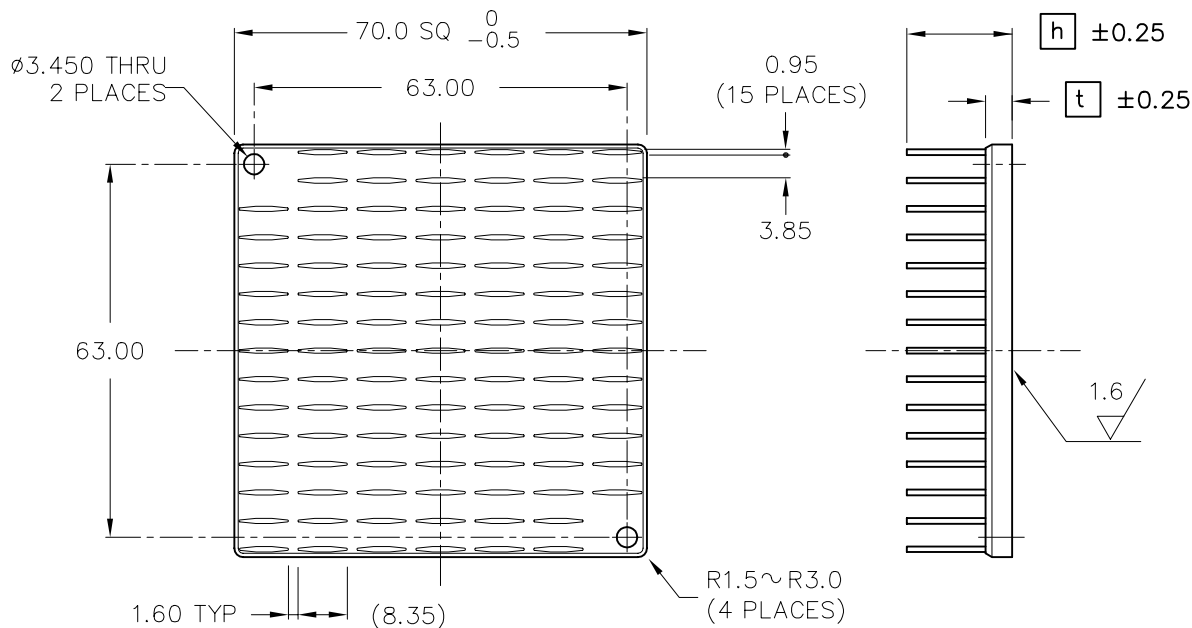
256-1 UEDA, NUMAZU-CITY SHIZUOKA-PREF., JAPAN  
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**ALPHA**Low Pressure Drop Heat Sink  
with attachment holes**LPDH 70**

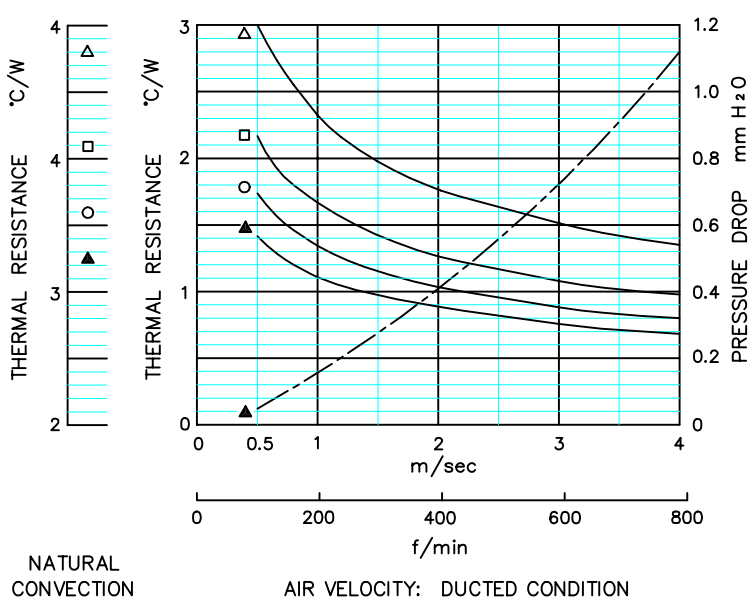
DIM



| MODEL       | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDH70-10BP | 10         | 3.0           | 59.4           |
| LPDH70-15BP | 15         | 4.0           | 70.9           |
| LPDH70-20BP | 20         |               | 78.8           |
| LPDH70-25BP | 25         |               | 86.8           |

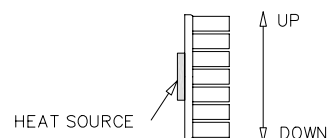
MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



- $\triangle$  LPDH70-10BP
- $\square$  LPDH70-15BP
- $\circ$  LPDH70-20BP
- $\blacktriangle$  LPDH70-25BP

- DUCTED CONDITION  
 DUMMY HEATER SIZE: 12.7 SQ  
 THERMAL RESISTANCE ———  
 PRESURE DROP - - - -
- NATURAL CONVECTION  
 DUMMY HEATER SIZE: 25.4 SQ  
 DISSIPATED POWER: 13.3(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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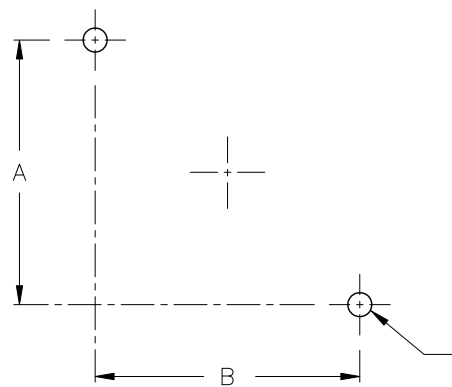
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REF



PCB HOLE LAYOUT



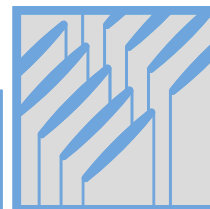
2X  $\phi 3.175 \pm 0.05$  [ $\phi .125 \pm .002$ ]  
USE OF PLATED HOLES TO REDUCE EXCESSIVE WEAR  
AND INSERTION FORCE IS RECOMMENDED.

|                     |      |      |
|---------------------|------|------|
| LPDH30, UBH30, ZH30 | 23.0 | 23.0 |
| LPDH35, UBH35, ZH35 | 28.0 | 28.0 |
| LPDH40, UBH40, ZH40 | 33.0 | 33.0 |
| LPDH45, UBH45, ZH45 | 38.0 | 38.0 |
| LPDH50, UBH50, ZH50 | 43.0 | 43.0 |
| LPDH54, UBH54, ZH54 | 47.0 | 47.0 |
| LPDH60, UBH60, ZH60 | 53.0 | 53.0 |
| LPDH70, UBH70       | 63.0 | 63.0 |
| MODEL               | A    | B    |

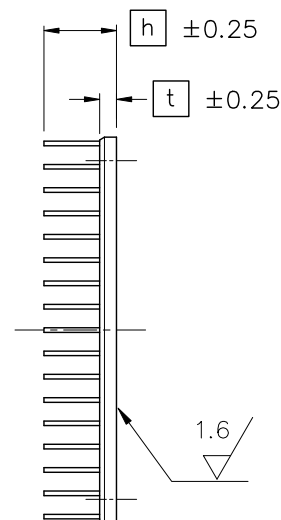
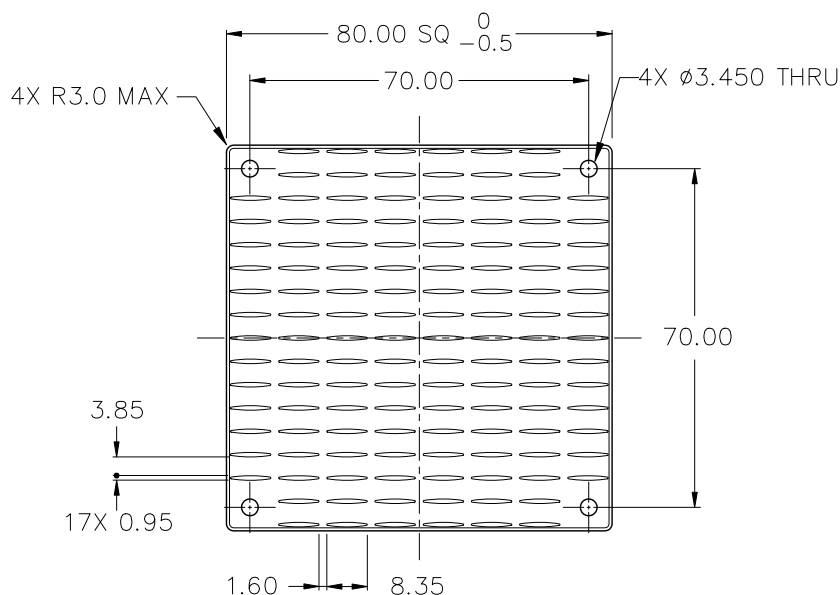
# ALPHA

Low Pressure Drop Heat Sink  
with attachment holes

# LPDP 80



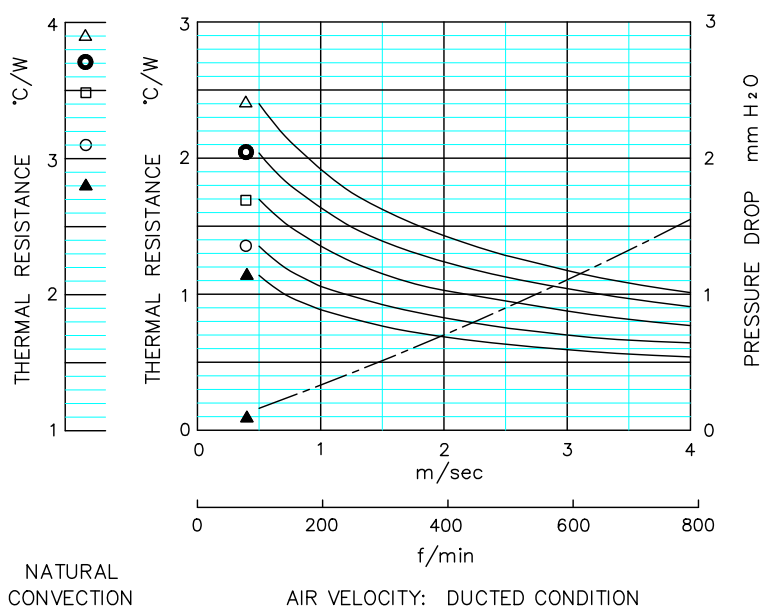
DIM



| MODEL      | HEIGHT [h] | THICKNESS [t] | WEIGHT (grams) |
|------------|------------|---------------|----------------|
| LPDP80-10B | 10         | 3.50          | 75             |
| LPDP80-12B | 12         |               | 79             |
| LPDP80-15B | 15         |               | 86             |
| LPDP80-20B | 20         | 5.00          | 119            |
| LPDP80-25B | 25         |               | 131            |

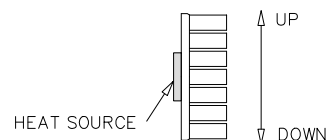
MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- △ LPDP80-10B
- LPDP80-12B
- LPDP80-15B
- ◇ LPDP80-20B
- ▲ LPDP80-25B

- DUCTED CONDITION  
DUMMY HEATER SIZE: 25.4 SQ  
THERMAL RESISTANCE ———  
PRESSURE DROP - - - - -
- NATURAL CONVECTION  
DUMMY HEATER SIZE: 25.4 SQ  
DISSIPATED POWER: 14.5(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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E mail : alpha@micforg.co.jp  
URL : <http://www.micforg.co.jp>

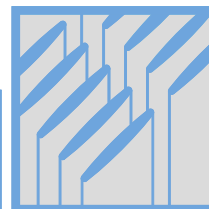
Alpha Novatech, Inc. - a subsidiary of Alpha Company.

473 Sapena Ct. #12 Santa Clara, CA 95054 USA  
PHONE +1(408)567-8082  
FAX +1(408)567-8053  
E mail : sales@alphanovatech.com  
URL : <http://www.alphanovatech.com>

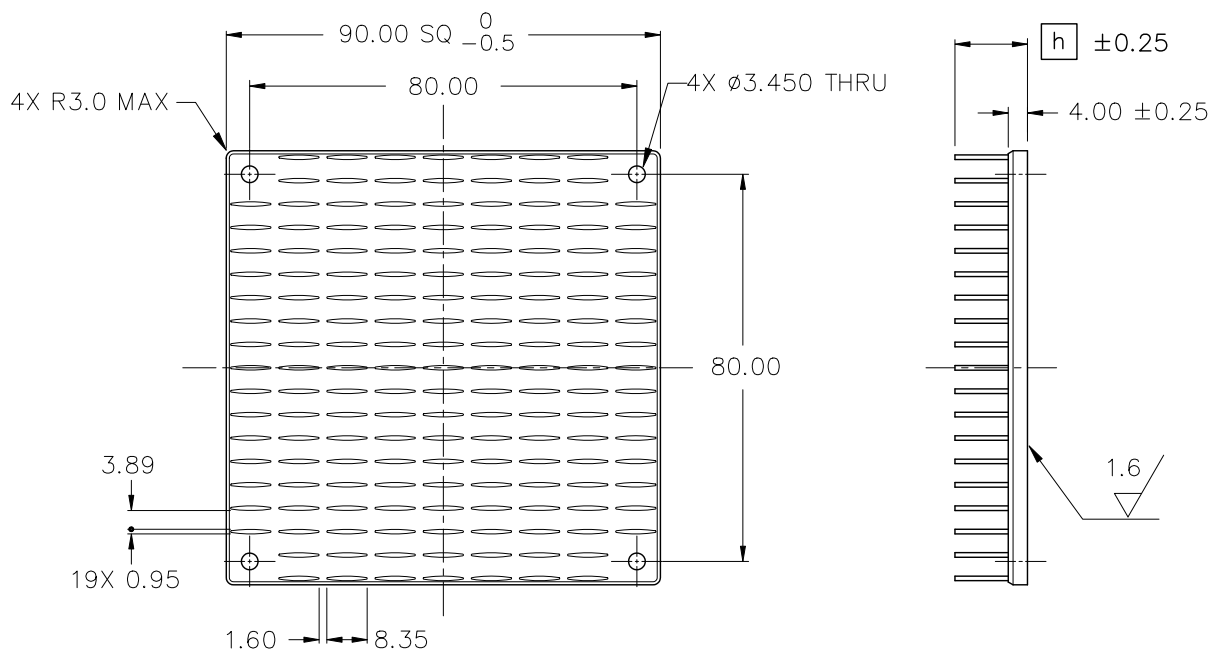
# ALPHA

Low Pressure Drop Heat Sink  
with attachment holes

# LPDP 90



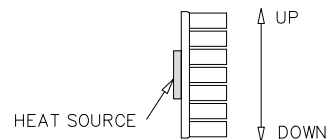
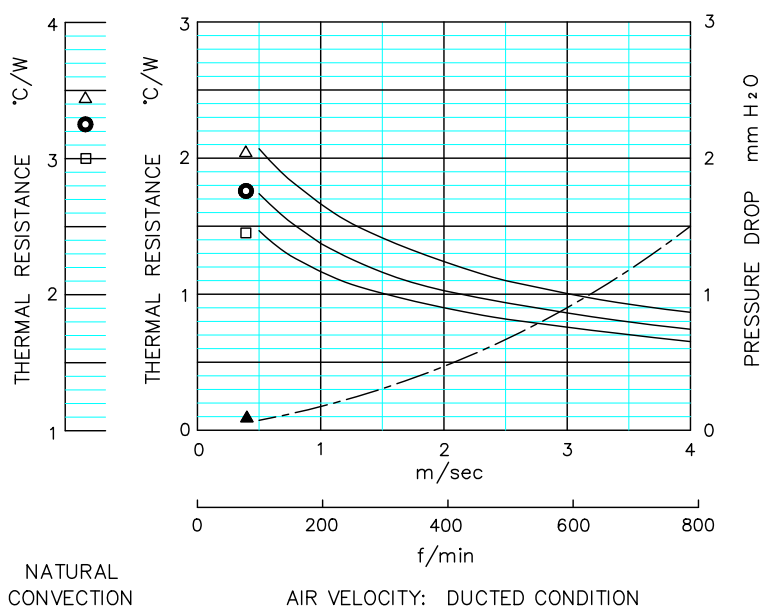
DIM



| MODEL      | HEIGHT $h$ | WEIGHT (grams) |
|------------|------------|----------------|
| LPDP90-10B | 10         | 104            |
| LPDP90-12B | 12         | 109            |
| LPDP90-15B | 15         | 118            |

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.

Alpha Company Ltd.

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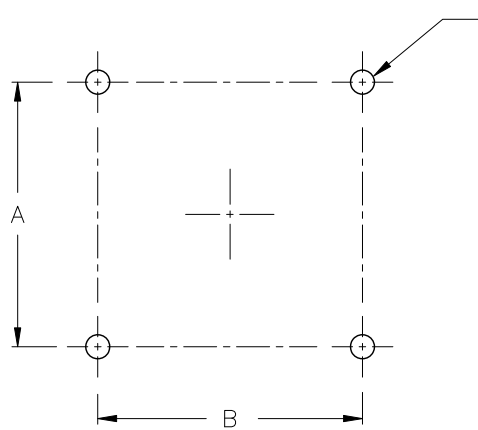
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REF



PCB HOLE LAYOUT



4X  $\varnothing 3.175 \pm 0.05$  [ $\varnothing.125 \pm .002$ ]  
USE OF PLATED HOLES TO REDUCE EXCESSIVE WEAR  
AND INSERTION FORCE IS RECOMMENDED.

|               |      |      |
|---------------|------|------|
| LPDP80, UBP80 | 70.0 | 70.0 |
| LPDP90, UBP90 | 80.0 | 80.0 |
| MODEL         | A    | B    |