

UBM Series  
UBH Series  
UBP Series

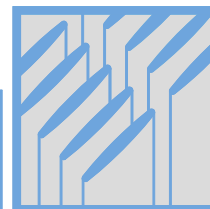
Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with Attachment Holes

**ALPHA**

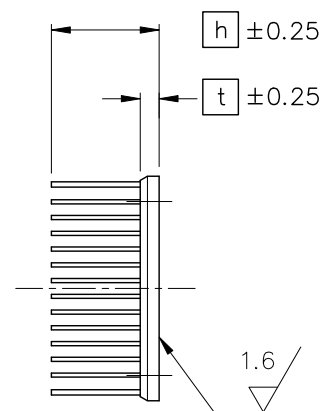
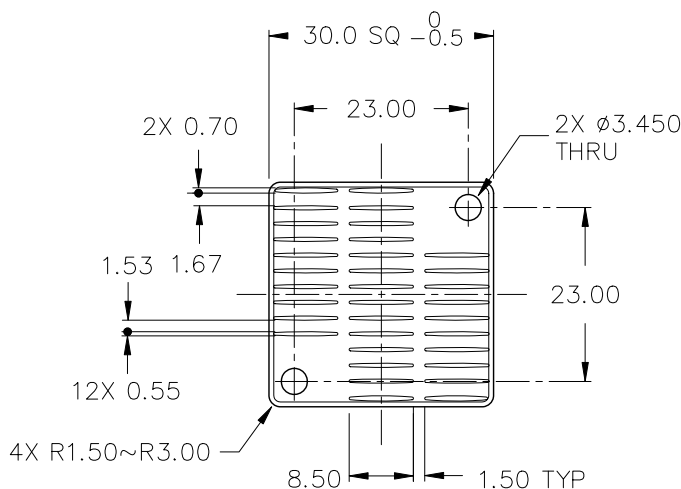
# ALPHA

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

# UBM30



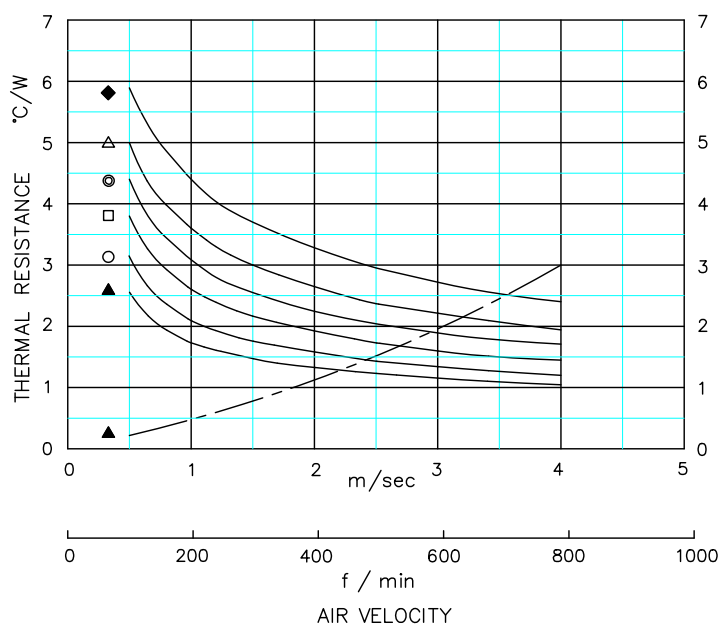
DIM



| MODEL        | HEIGHT [h]            | THICKNESS [t] | WEIGHT (grams) |
|--------------|-----------------------|---------------|----------------|
| UBM30-8BP    | 8                     | 2.00          | 6.8            |
| UBM30-10BP   | 10                    | 2.50          | 8.5            |
| UBM30-12BP   | 12                    |               | 9.3            |
| UBM30-15BP   | 15                    |               | 10.4           |
| UBM30-20BP   | 20                    |               | 12.2           |
| UBM30-25BP   | 25                    |               | 14.1           |
| UBM30-[h] BP | $8 \leq [h] < 10$     | 2.00          | -              |
|              | $10 \leq [h] \leq 25$ | 2.50          | -              |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- ◆ UBM30-8BP
- △ UBM30-10BP
- UBM30-12BP
- UBM30-15BP
- UBM30-20BP
- ▲ UBM30-25BP

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

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

Alpha Company Ltd.

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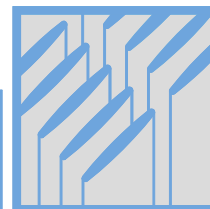
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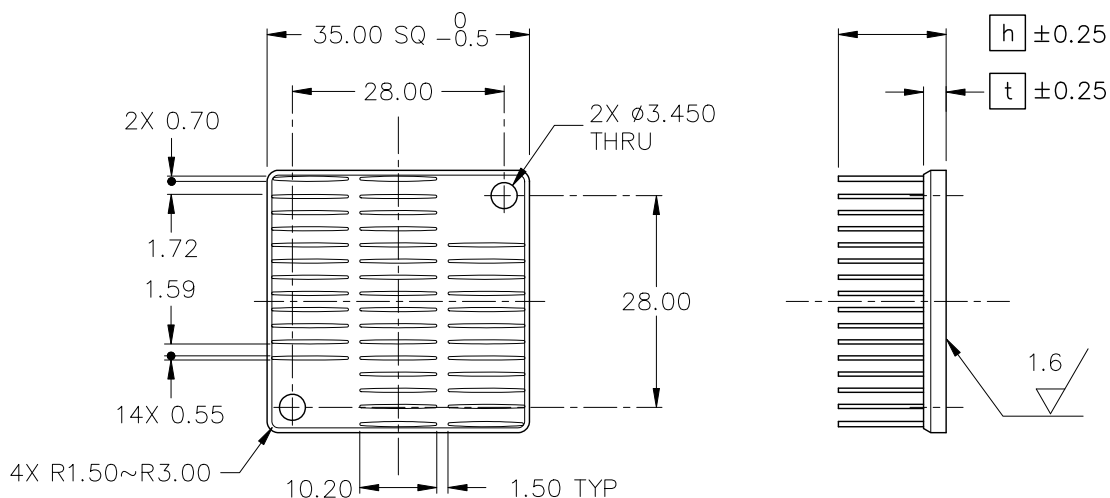
# ALPHA

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

# UBM35



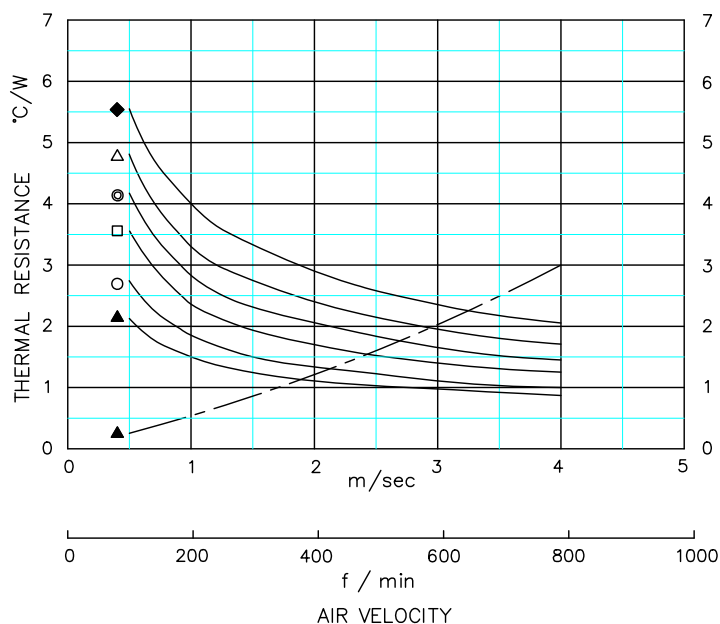
DIM



| MODEL         | HEIGHT $h$          | THICKNESS $t$ | WEIGHT (grams) |
|---------------|---------------------|---------------|----------------|
| UBM35-8BP     | 8                   | 2.00          | 9.4            |
| UBM35-10BP    | 10                  | 3.00          | 13.1           |
| UBM35-12BP    | 12                  |               | 14.2           |
| UBM35-15BP    | 15                  |               | 15.8           |
| UBM35-20BP    | 20                  |               | 18.4           |
| UBM35-25BP    | 25                  |               | 21.0           |
| UBM35- $h$ BP | $8 \leq h < 10$     | 2.00          | -              |
|               | $10 \leq h \leq 25$ | 3.00          | -              |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



AIR VELOCITY: DUCTED CONDITION

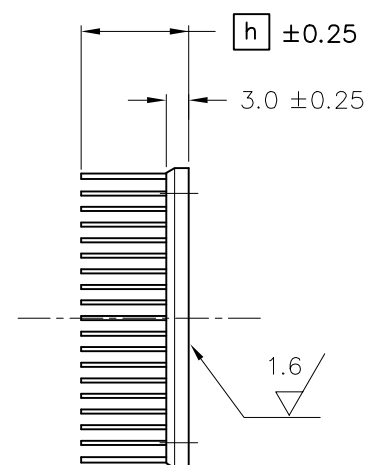
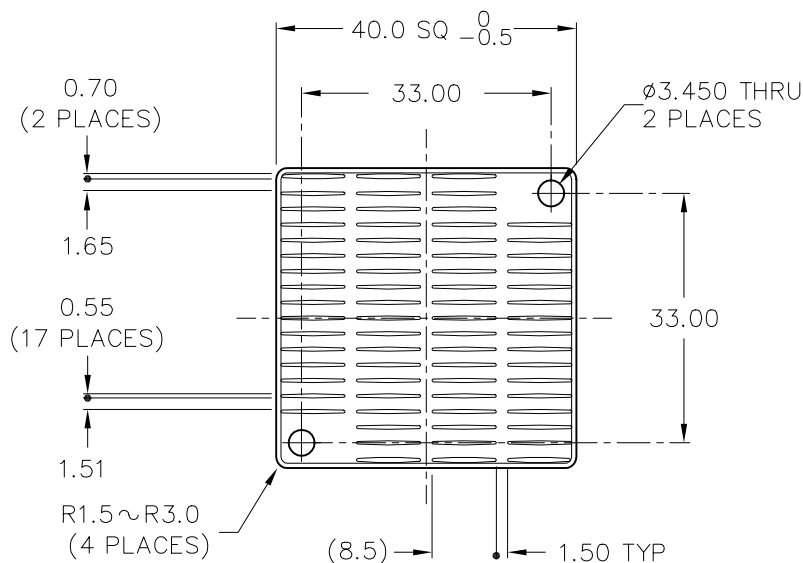
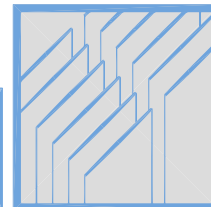
BASED ON ALPHA'S STANDARD TEST  
PROCEDURE.  
REFER TO TECHNICAL INFORMATION.

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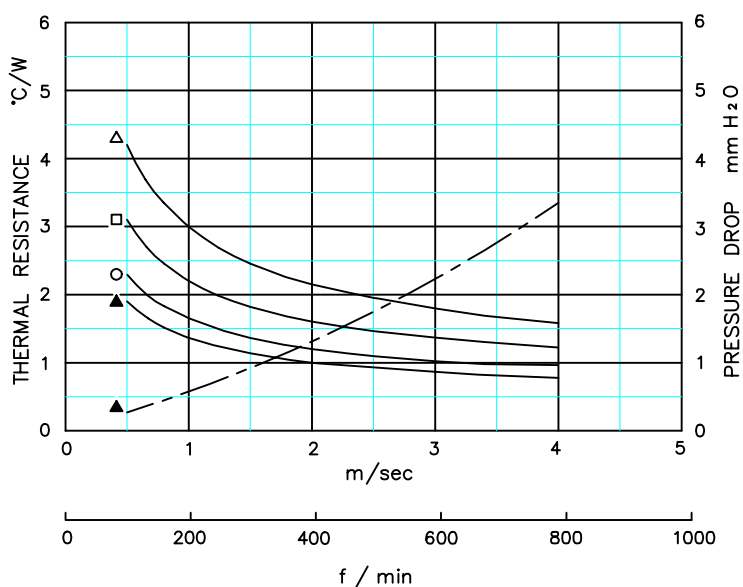
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| MODEL      | HEIGHT $\boxed{h}$ | WEIGHT<br>(grams) |
|------------|--------------------|-------------------|
| UBM40-10BP | 10                 | 17.1              |
| UBM40-15BP | 15                 | 21.5              |
| UBM40-20BP | 20                 | 26.0              |
| UBM40-25BP | 25                 | 30.3              |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm



△ UBM40-10BP  
 □ UBM40-15BP  
 ○ UBM40-20BP  
 ▲ UBM40-25BP

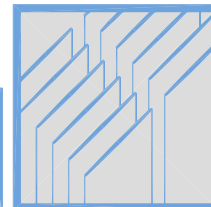
● DUCTED CONDITION  
DUMMY HEATER SIZE: 12.7 SQ  
THERMAL RESISTANCE \_\_\_\_\_  
PRESURE DROP \_\_\_\_\_

AIR VELOCITY: DUCTED CONDITION

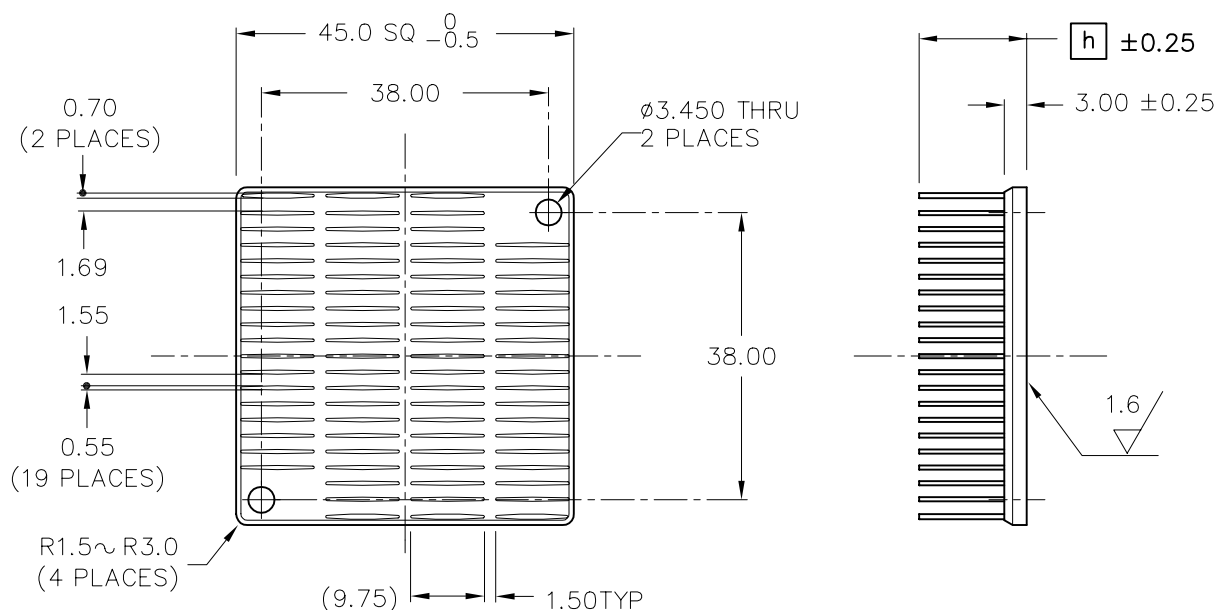
BASED ON ALPHA'S STANDARD TEST  
PROCEDURE.  
REFER TO TECHNICAL INFORMATION.

**ALPHA**

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

**UBM 45**

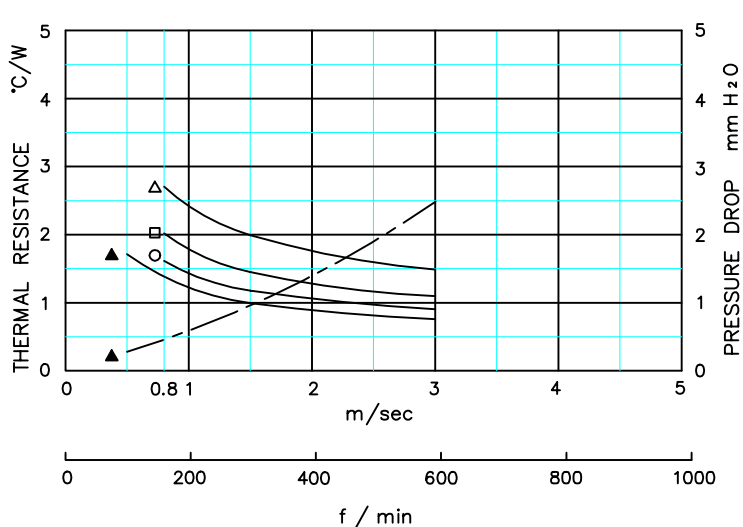
DIM



| MODEL      | HEIGHT $h$ | WEIGHT (grams) |
|------------|------------|----------------|
| UBM45-10BP | 10         | 21.1           |
| UBM45-15BP | 15         | 26.9           |
| UBM45-20BP | 20         | 32.8           |
| UBM45-25BP | 25         | 38.6           |

MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



- △ UBM45-10BP
- UBM45-15BP
- UBM45-20BP
- ▲ UBM45-25BP

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

AIR VELOCITY: DUCTED CONDITION

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

Alpha Company Ltd.

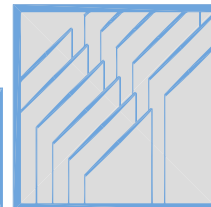
256-1 UEDA, NUMAZU-CITY SHIZUOKA-PREF., JAPAN  
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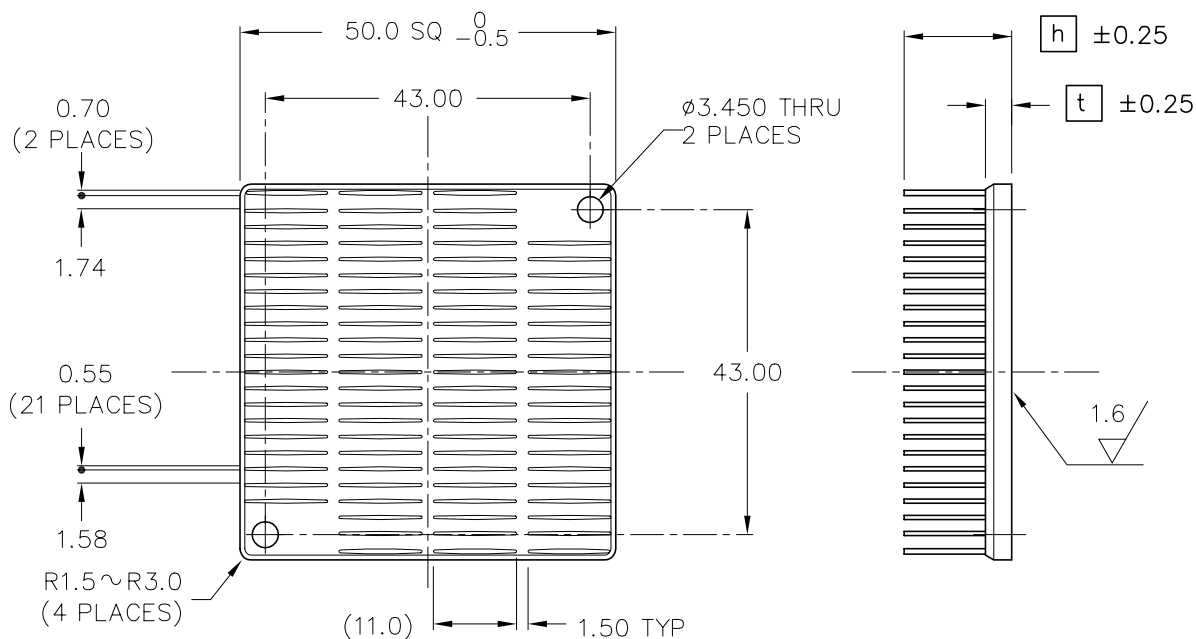
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**ALPHA**

Low Pressure Drop and  
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with attachment holes

**UBM50**

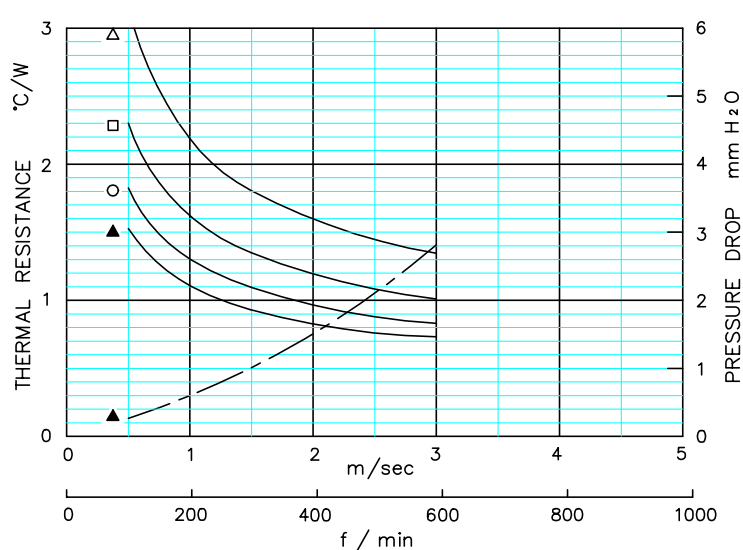
DIM



| MODEL      | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|------------|------------|---------------|----------------|
| UBM50-10BP | 10         | 3.0           | 27.0           |
| UBM50-15BP | 15         | 3.5           | 36.8           |
| UBM50-20BP | 20         |               | 43.8           |
| UBM50-25BP | 25         |               | 50.9           |

MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



AIR VELOCITY: DUCTED CONDITION

- △ UBM50-10BP
- UBM50-15BP
- UBM50-20BP
- ▲ UBM50-25BP

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

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

Alpha Company Ltd.

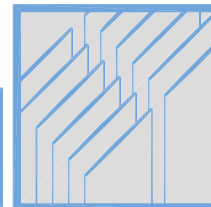
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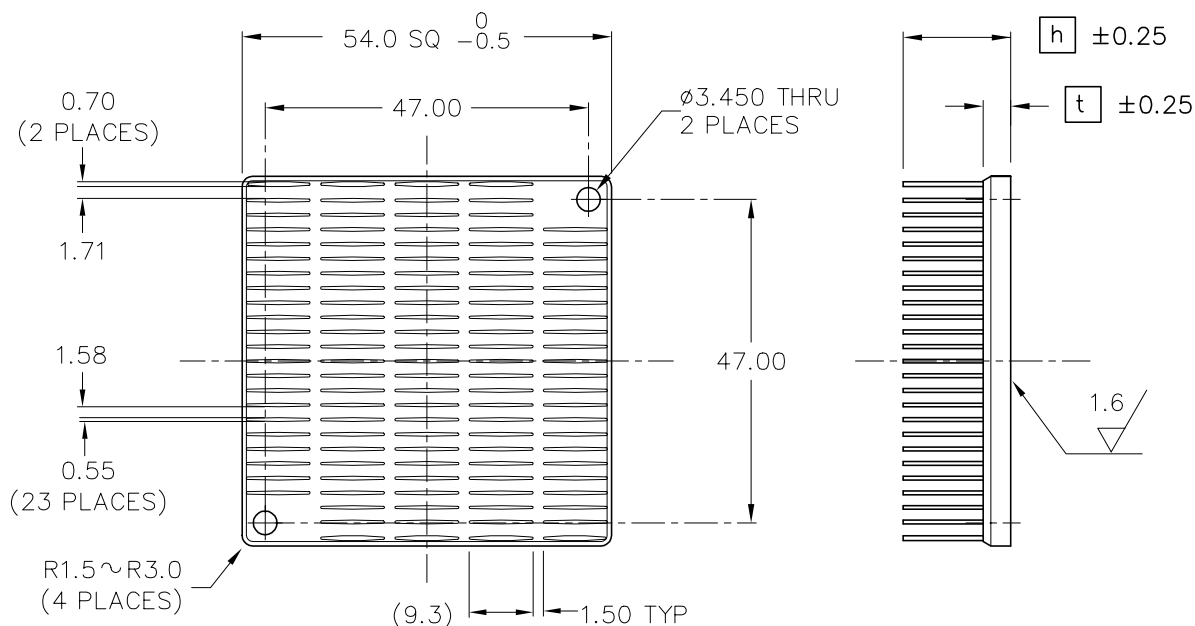
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**ALPHA**

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

**UBM54**

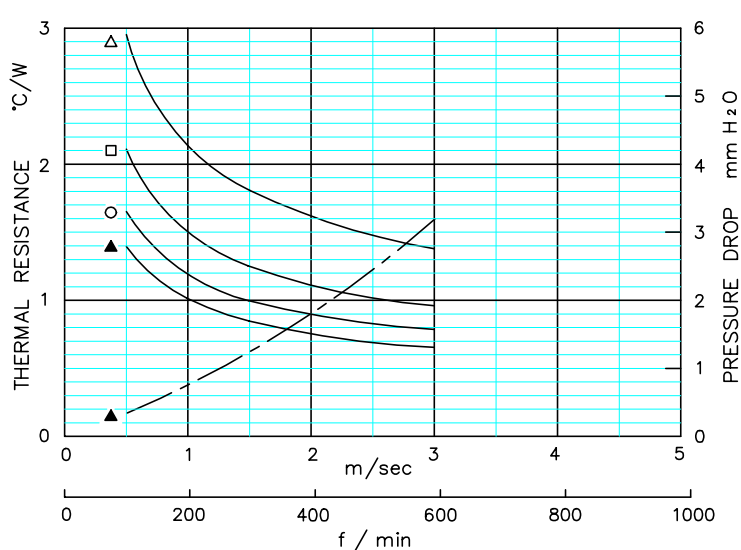
DIM



| MODEL      | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|------------|------------|---------------|----------------|
| UBM54-10BP | 10         | 3.0           | 32.2           |
| UBM54-15BP | 15         | 4.0           | 46.5           |
| UBM54-20BP | 20         |               | 54.4           |
| UBM54-25BP | 25         |               | 62.2           |

MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



AIR VELOCITY: DUCTED CONDITION

- △ UBM54-10BP
- UBM54-15BP
- UBM54-20BP
- ▲ UBM54-25BP

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

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

Alpha Company Ltd.

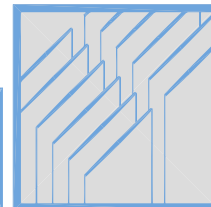
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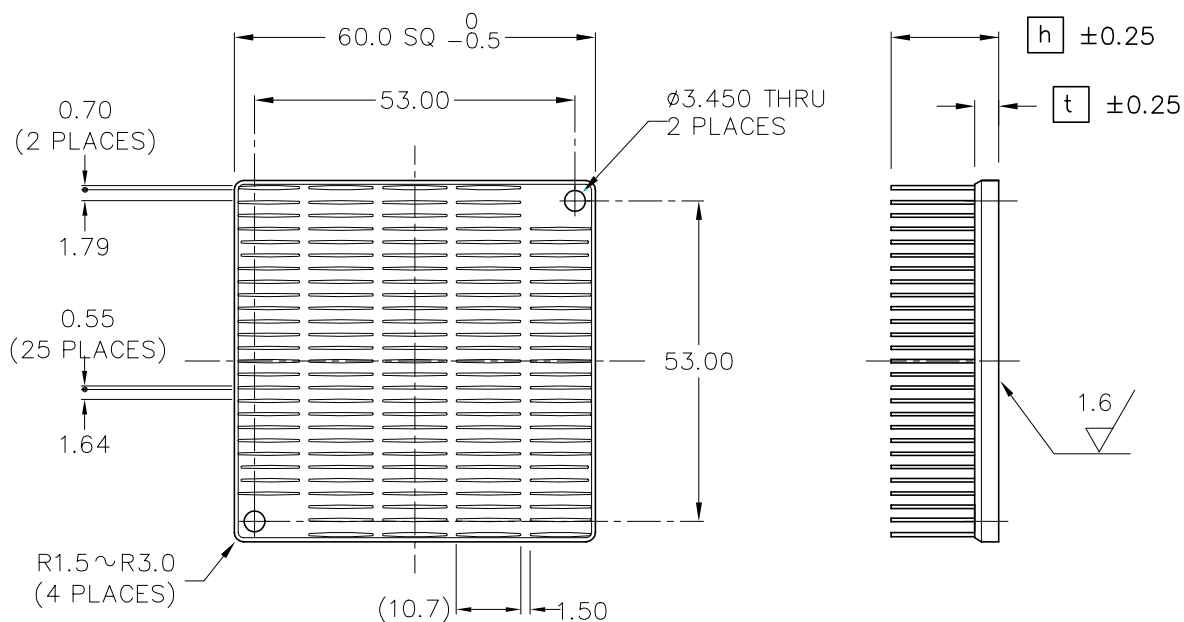
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**ALPHA**

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

**UBM 60**

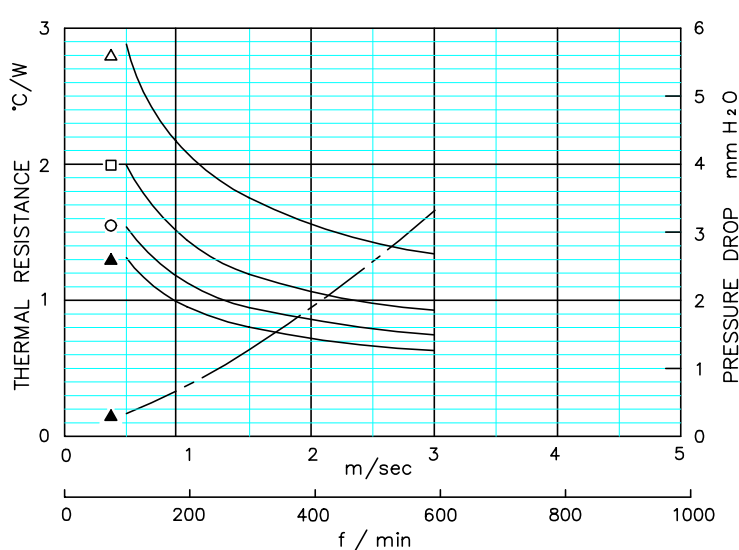
DIM



| MODEL      | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|------------|------------|---------------|----------------|
| UBM60-10BP | 10         | 3.0           | 41.0           |
| UBM60-15BP | 15         | 4.0           | 57.0           |
| UBM60-20BP | 20         |               | 65.0           |
| UBM60-25BP | 25         |               | 73.0           |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



AIR VELOCITY: DUCTED CONDITION

■ BASED ON ALPHA'S STANDARD TEST PROCEDURE.  
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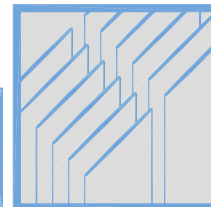
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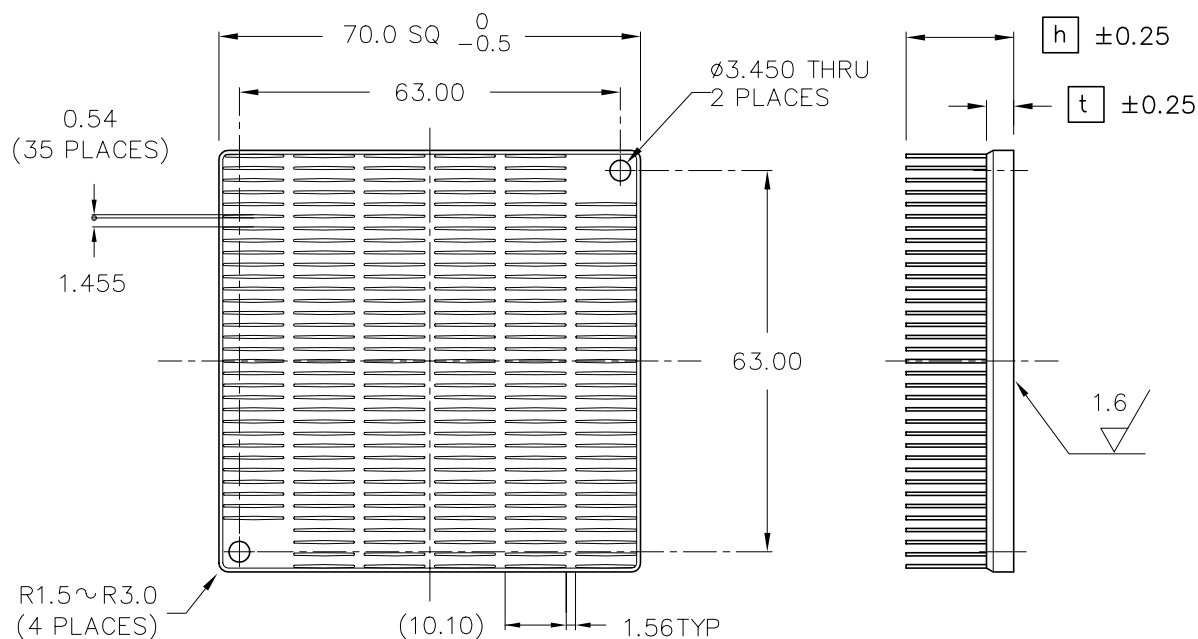
# ALPHA

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

# UBM70



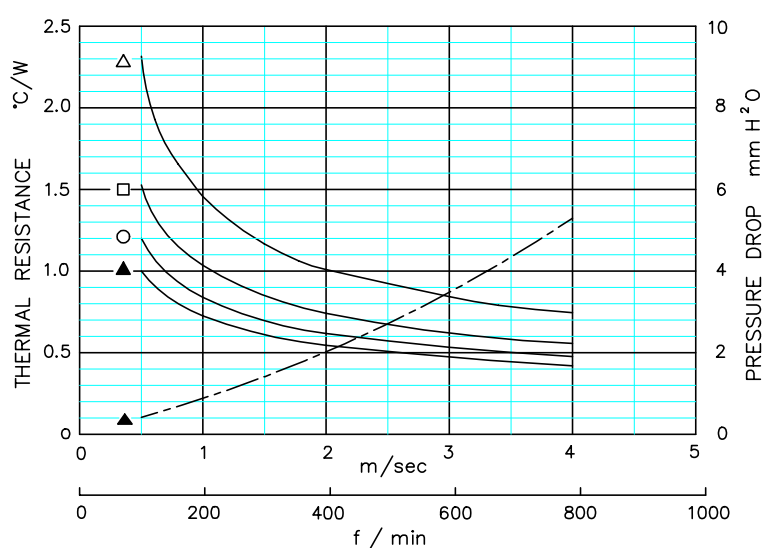
DIM



| MODEL      | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|------------|------------|---------------|----------------|
| UBM70-10BP | 10         | 3.0           | 75.1           |
| UBM70-15BP | 15         | 4.0           | 97.2           |
| UBM70-20BP | 20         |               | 108.9          |
| UBM70-25BP | 25         |               | 120.6          |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



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

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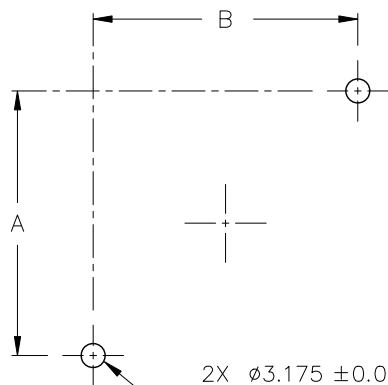
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REF



PCB HOLE LAYOUT



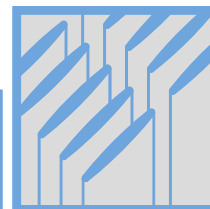
2X  $\phi 3.175 \pm 0.05$  [ $\phi .125 \pm .002$ ]  
USE OF PLATED HOLES TO REDUCE EXCESSIVE WEAR  
AND INSERTION FORCE IS RECOMMENDED.

|                     |      |      |
|---------------------|------|------|
| 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    |

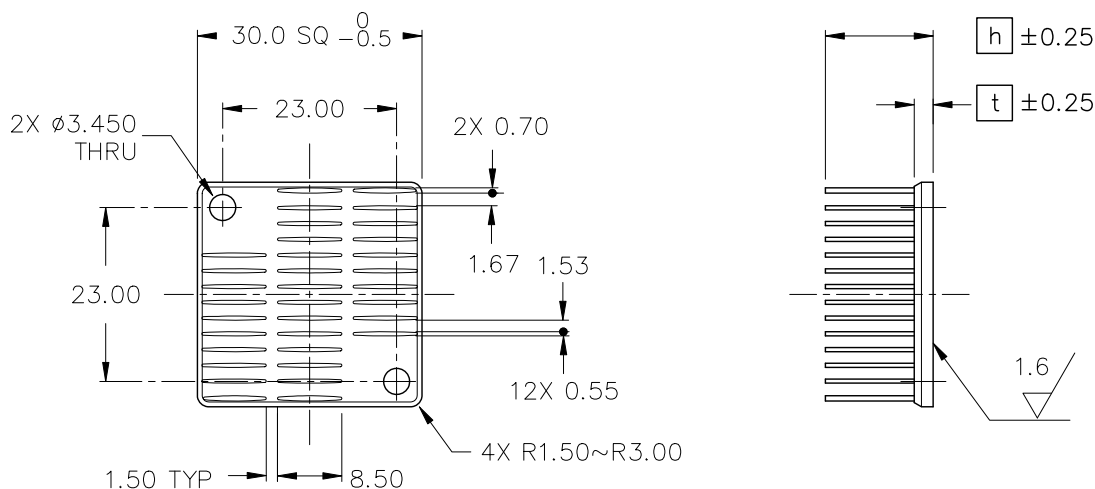
# ALPHA

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

# UBH 30



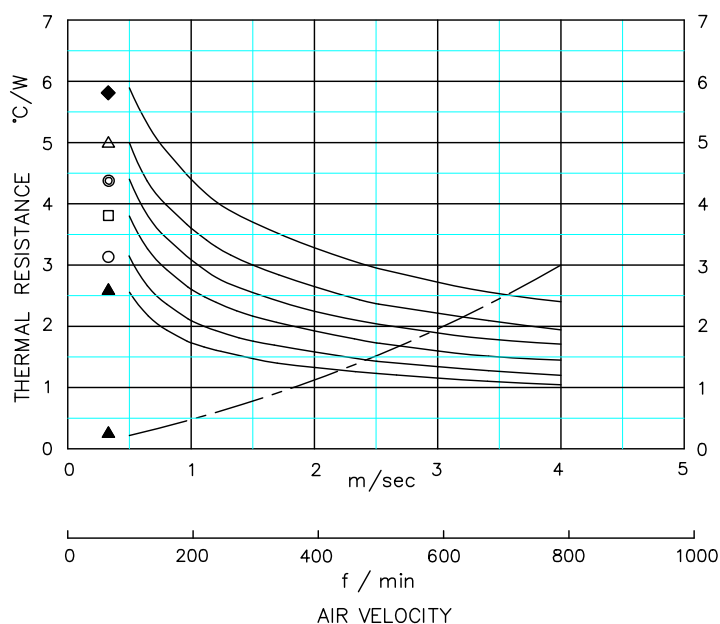
DIM



| MODEL         | HEIGHT $h$          | THICKNESS $t$ | WEIGHT (grams) |
|---------------|---------------------|---------------|----------------|
| UBH30-8BP     | 8                   | 2.00          | 6.8            |
| UBH30-10BP    | 10                  | 2.50          | 8.5            |
| UBH30-12BP    | 12                  |               | 9.3            |
| UBH30-15BP    | 15                  |               | 10.4           |
| UBH30-20BP    | 20                  |               | 12.2           |
| UBH30-25BP    | 25                  |               | 14.1           |
| UBH30- $h$ BP | $8 \leq h < 10$     | 2.00          | -              |
|               | $10 \leq h \leq 25$ | 2.50          | -              |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



AIR VELOCITY: DUCTED CONDITION

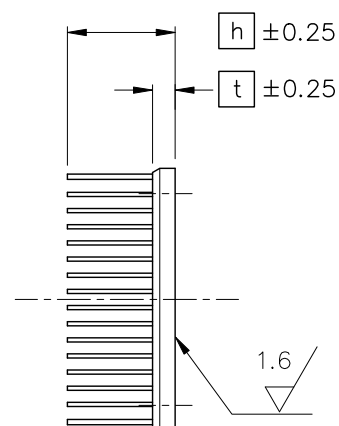
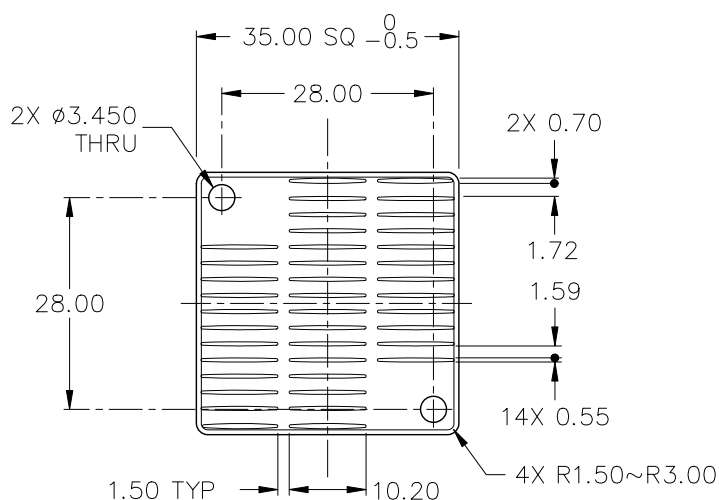
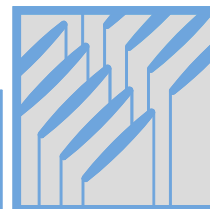
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PROCEDURE.  
REFER TO TECHNICAL INFORMATION.

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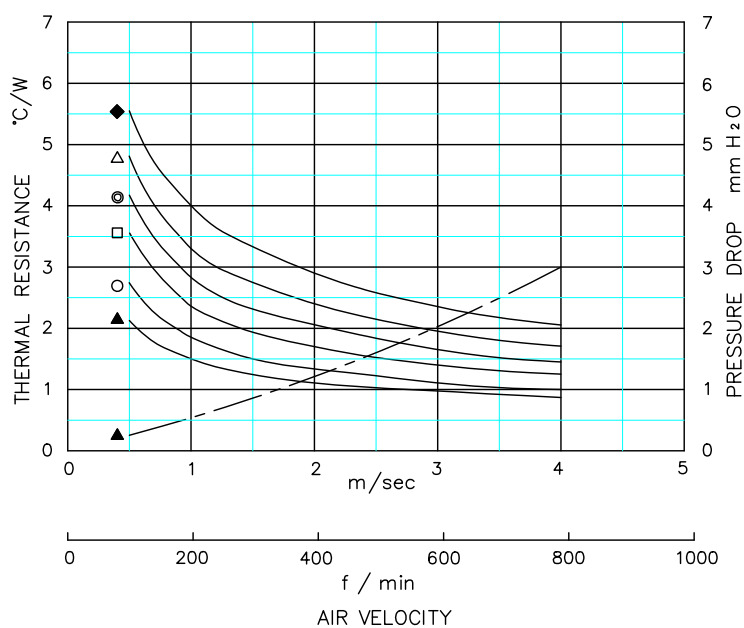
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| MODEL         | HEIGHT $h$          | THICKNESS $t$ | WEIGHT (grams) |
|---------------|---------------------|---------------|----------------|
| UBH35–8BP     | 8                   | 2.00          | 9.4            |
| UBH35–10BP    | 10                  | 3.00          | 13.1           |
| UBH35–12BP    | 12                  |               | 14.2           |
| UBH35–15BP    | 15                  |               | 15.8           |
| UBH35–20BP    | 20                  |               | 18.4           |
| UBH35–25BP    | 25                  |               | 21.0           |
| UBH35– $h$ BP | $8 \leq h < 10$     | 2.00          | –              |
|               | $10 \leq h \leq 25$ | 3.00          | –              |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm



- ◆ UBH35-8BP
- △ UBH35-10BP
- ◎ UBH35-12BP
- UBH35-15BP
- UBH35-20BP
- ▲ UBH35-25BP

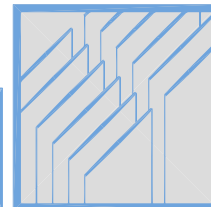
● DUCTED CONDITION  
 DUMMY HEATER SIZE: 12.7 SQ  
 THERMAL RESISTANCE \_\_\_\_\_  
 PRESURE DROP \_\_\_\_\_

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

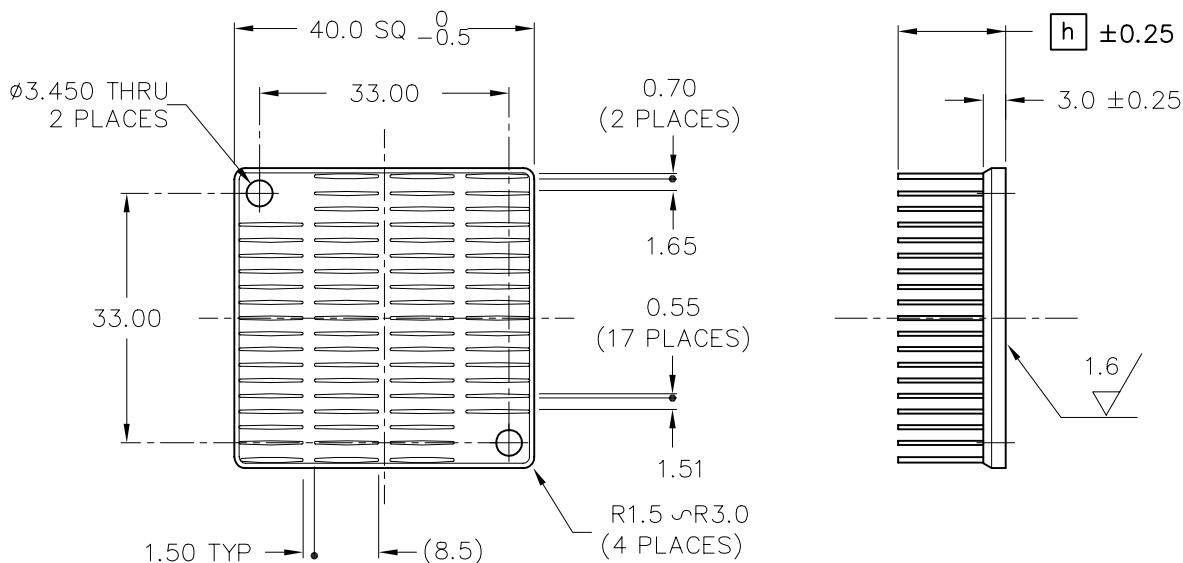
AIR VELOCITY: DUCTED CONDITION

**ALPHA**

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

**UBH 40**

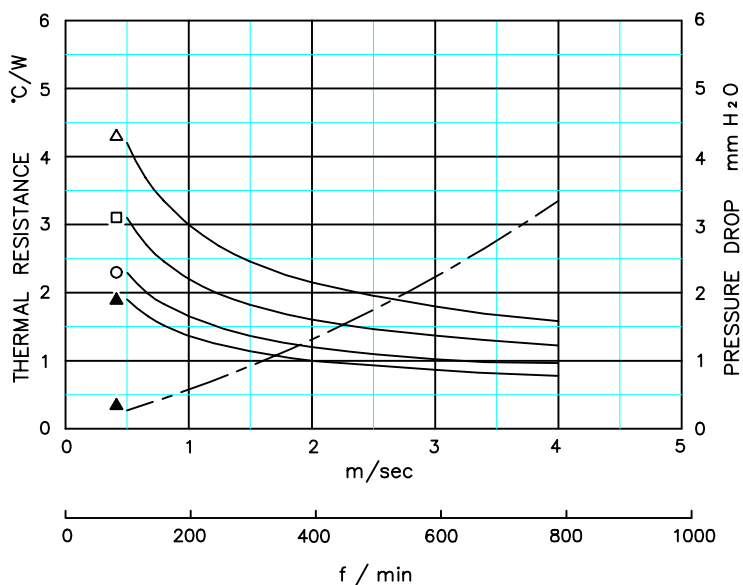
DIM



| MODEL      | HEIGHT $h$ | WEIGHT (grams) |
|------------|------------|----------------|
| UBH40-10BP | 10         | 17.1           |
| UBH40-15BP | 15         | 21.5           |
| UBH40-20BP | 20         | 26.0           |
| UBH40-25BP | 25         | 30.3           |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- △ UBH40-10BP
- UBH40-15BP
- UBH40-20BP
- ▲ UBH40-25BP

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

AIR VELOCITY: DUCTED CONDITION

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

Alpha Company Ltd.

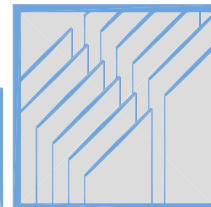
256-1 UEDA, NUMAZU-CITY SHIZUOKA-PREF., JAPAN  
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FAX +81(55)966 9192  
E mail : alpha@micforg.co.jp  
URL : <http://www.micforg.co.jp>

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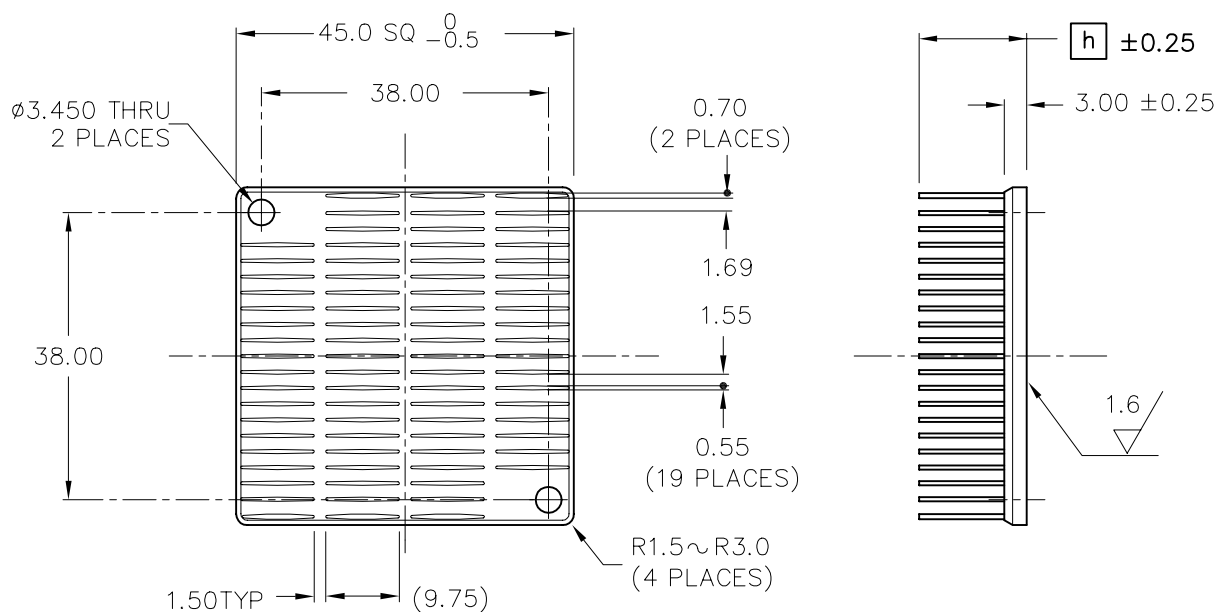
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FAX +1(408)567-8053  
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**ALPHA**

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

**UBH 45**

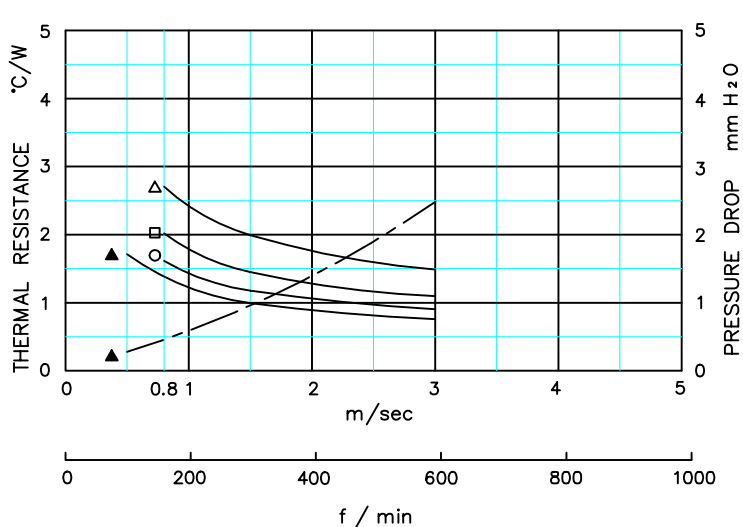
DIM



| MODEL      | HEIGHT $h$ | WEIGHT (grams) |
|------------|------------|----------------|
| UBH45-10BP | 10         | 21.1           |
| UBH45-15BP | 15         | 26.9           |
| UBH45-20BP | 20         | 32.8           |
| UBH45-25BP | 25         | 38.6           |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



AIR VELOCITY: DUCTED CONDITION

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

Alpha Company Ltd.

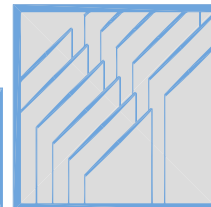
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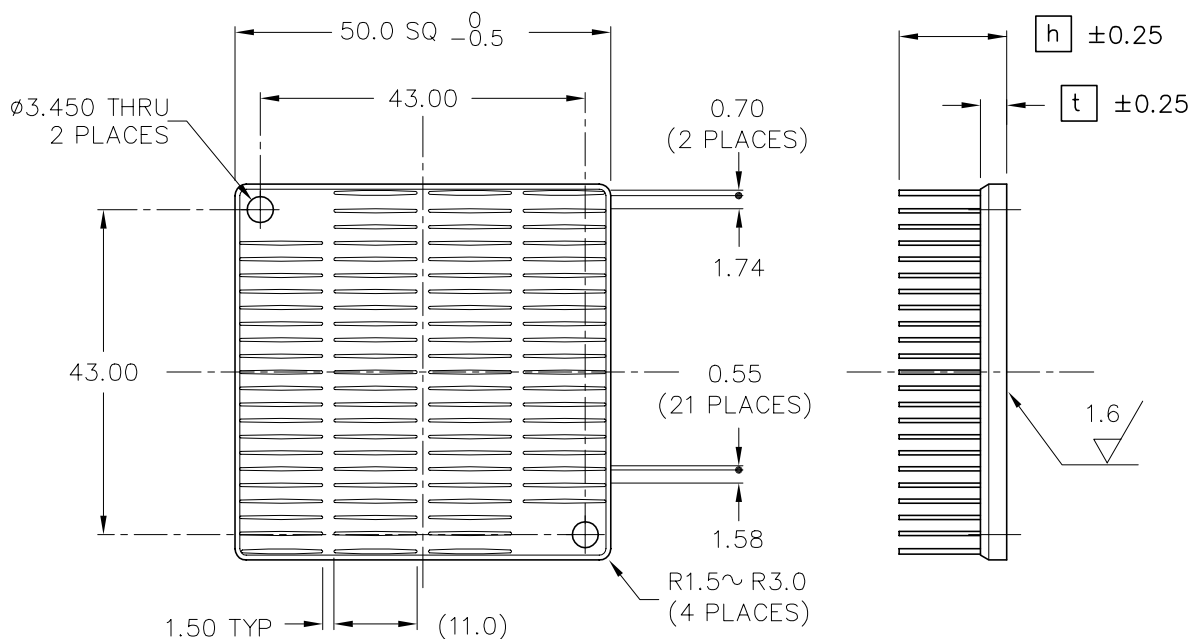
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**ALPHA**

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

**UBH 50**

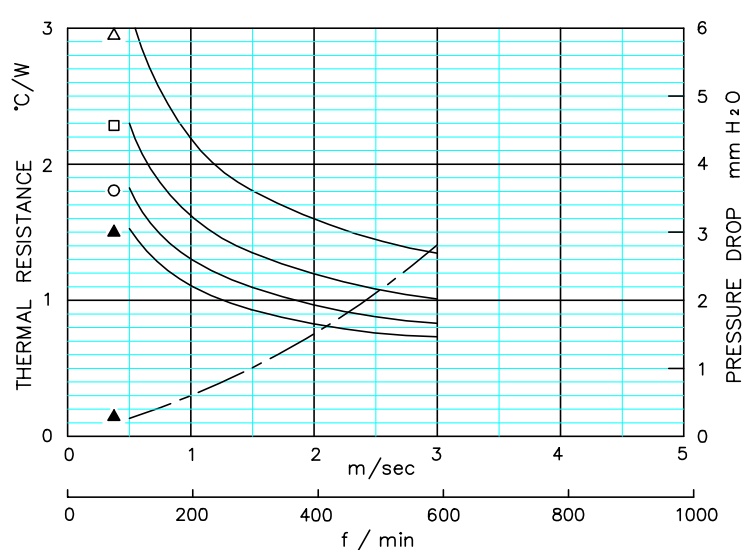
DIM



| MODEL      | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|------------|------------|---------------|----------------|
| UBH50-10BP | 10         | 3.0           | 27.0           |
| UBH50-15BP | 15         | 3.5           | 36.8           |
| UBH50-20BP | 20         |               | 43.8           |
| UBH50-25BP | 25         |               | 50.9           |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- △ UBH50-10BP
- UBH50-15BP
- UBH50-20BP
- ▲ UBH50-25BP

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

AIR VELOCITY: DUCTED CONDITION

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

Alpha Company Ltd.

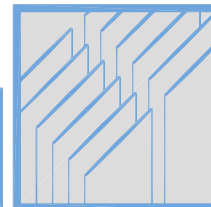
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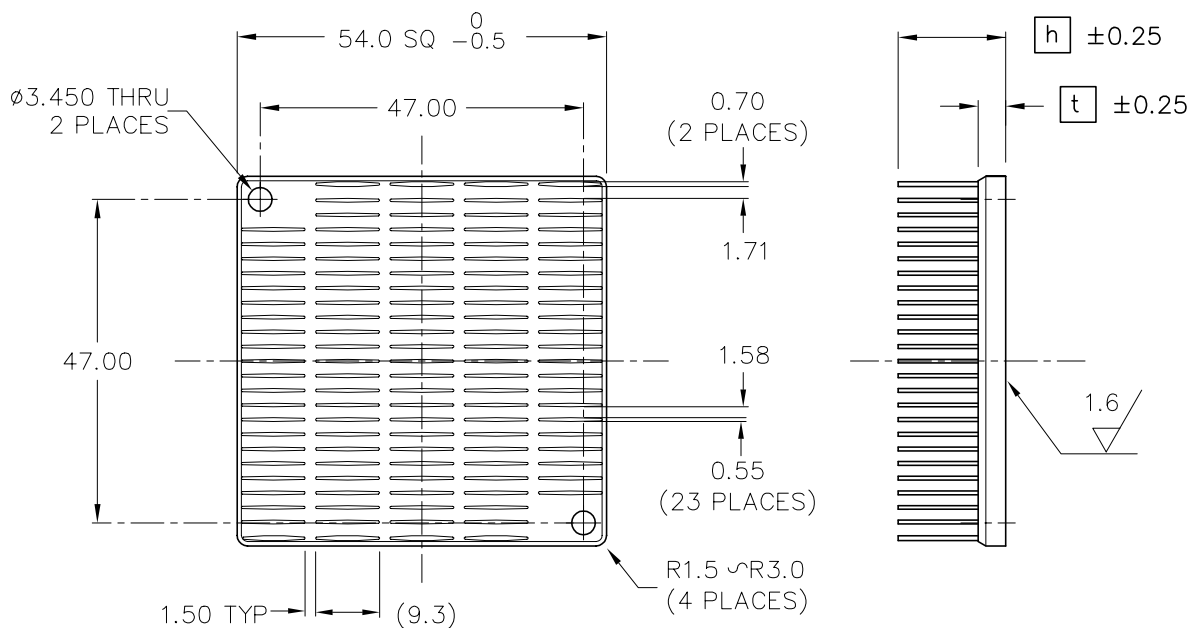
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**ALPHA**

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

**UBH54**

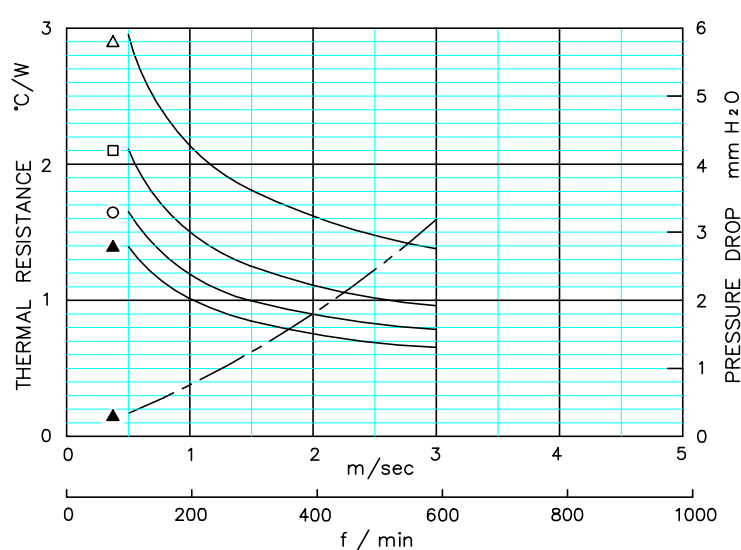
DIM



| MODEL      | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|------------|------------|---------------|----------------|
| UBH54-10BP | 10         | 3.0           | 32.2           |
| UBH54-15BP | 15         | 4.0           | 46.5           |
| UBH54-20BP | 20         |               | 54.4           |
| UBH54-25BP | 25         |               | 62.2           |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- △ UBH54-10BP
- UBH54-15BP
- UBH54-20BP
- ▲ UBH54-25BP

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

AIR VELOCITY: DUCTED CONDITION

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

Alpha Company Ltd.

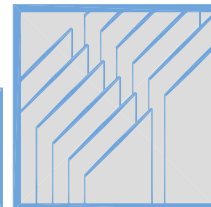
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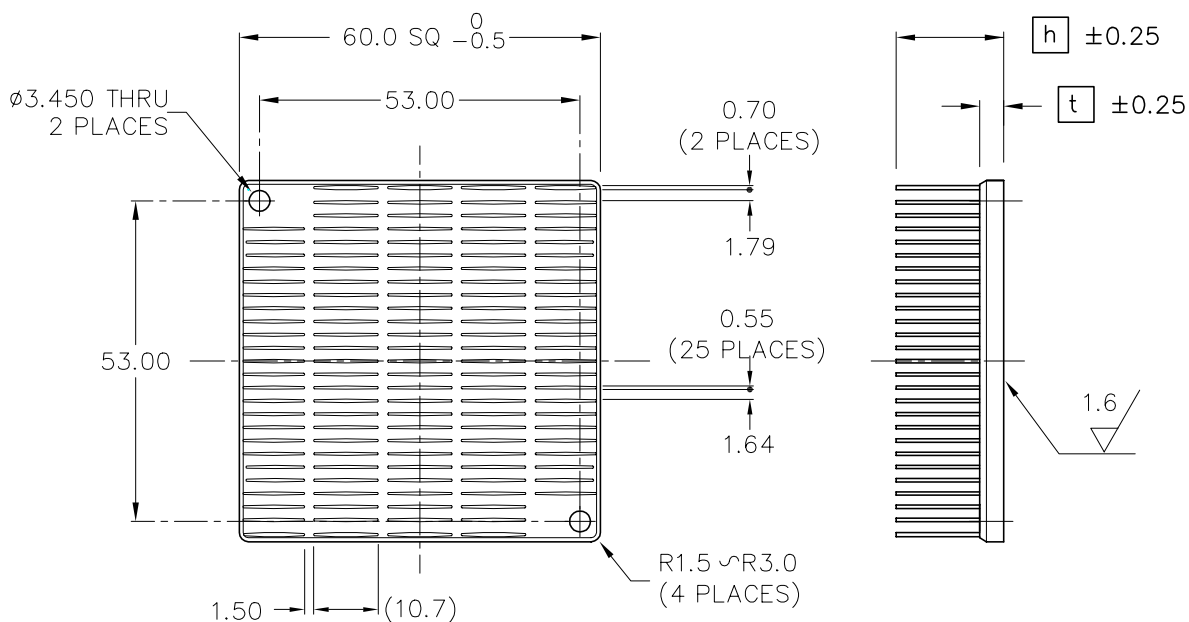
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**ALPHA**

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

**UBH 60**

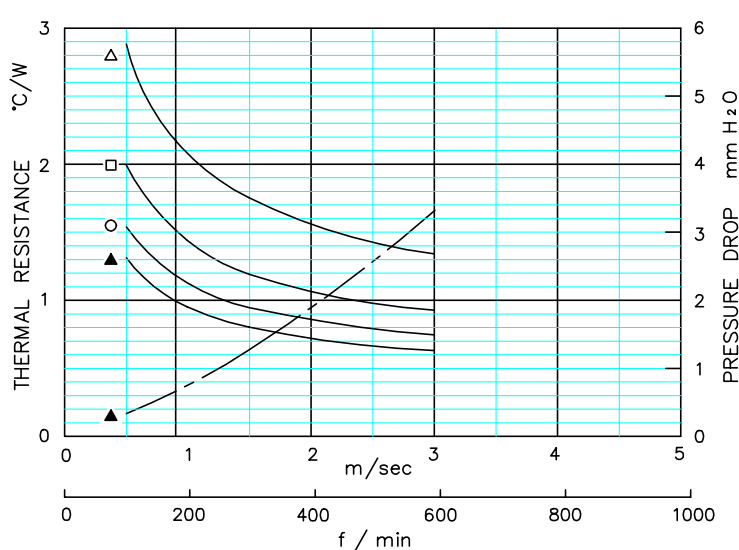
DIM



| MODEL      | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|------------|------------|---------------|----------------|
| UBH60-10BP | 10         | 3.0           | 41.0           |
| UBH60-15BP | 15         | 4.0           | 57.0           |
| UBH60-20BP | 20         |               | 65.0           |
| UBH60-25BP | 25         |               | 73.0           |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- △ UBH60-10BP
- UBH60-15BP
- UBH60-20BP
- ▲ UBH60-25BP

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

AIR VELOCITY: DUCTED CONDITION

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

Alpha Company Ltd.

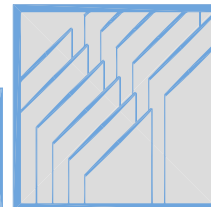
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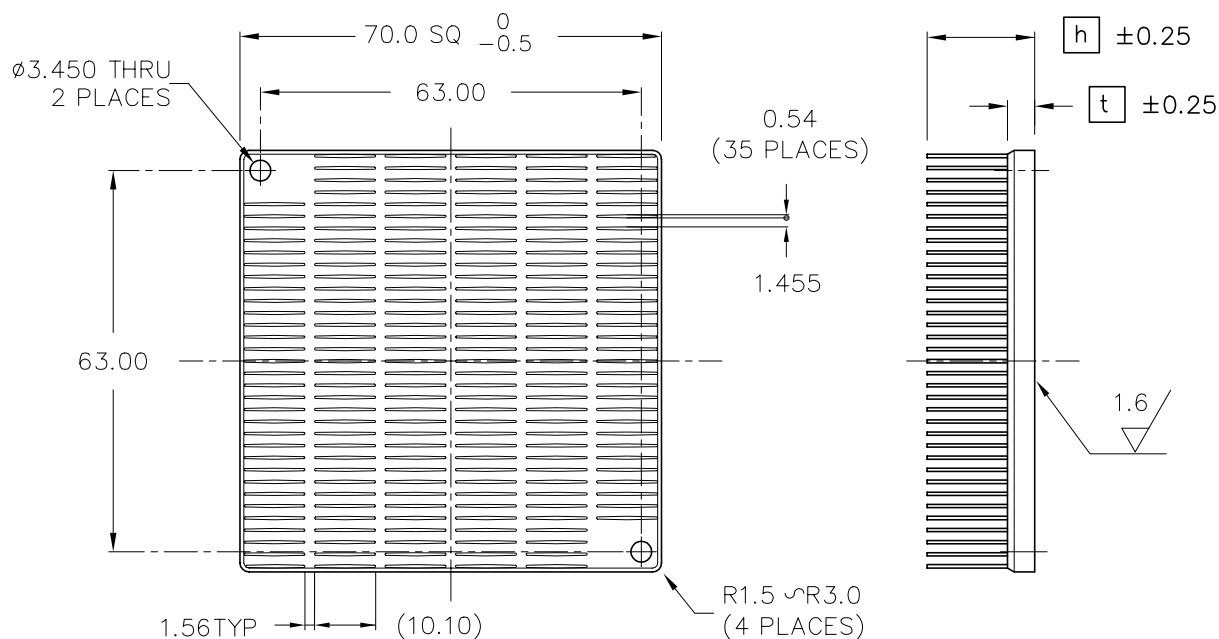
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**ALPHA**

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

**UBH 70**

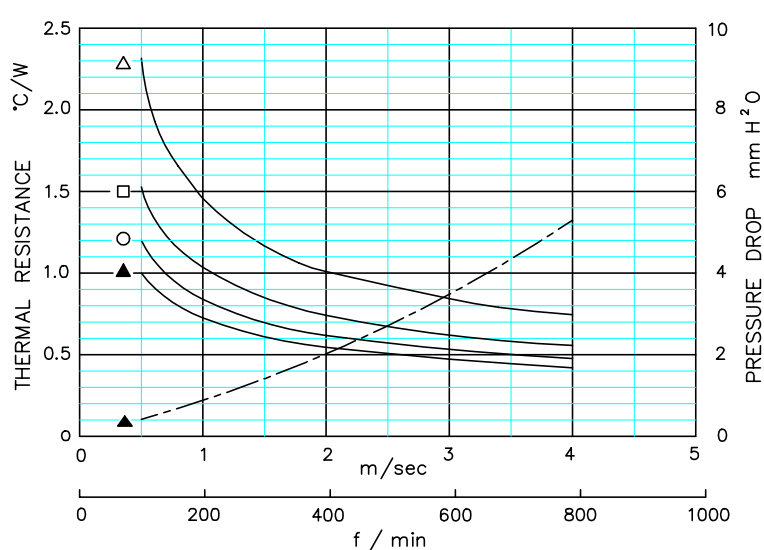
DIM



| MODEL      | HEIGHT $h$ | THICKNESS $t$ | WEIGHT (grams) |
|------------|------------|---------------|----------------|
| UBH70-10BP | 10         | 3.0           | 75.1           |
| UBH70-15BP | 15         | 4.0           | 97.2           |
| UBH70-20BP | 20         |               | 108.9          |
| UBH70-25BP | 25         |               | 120.6          |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- $\Delta$  UBH70-10BP
- $\square$  UBH70-15BP
- $\circ$  UBH70-20BP
- $\blacktriangle$  UBH70-25BP

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

AIR VELOCITY: DUCTED CONDITION

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

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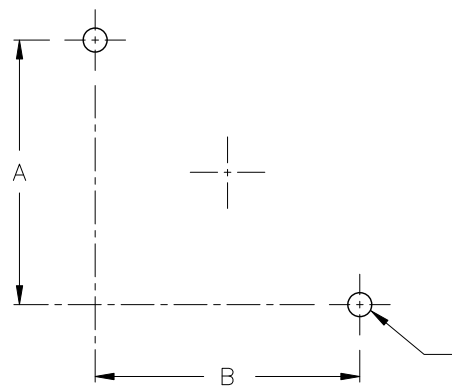
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REF



PCB HOLE LAYOUT



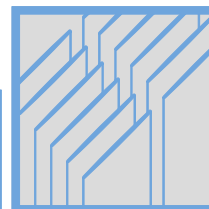
2X  $\phi 3.175 \pm 0.05$  [ $\phi .125 \pm .002$ ]  
USE OF PLATED HOLES TO REDUCE EXCESSIVE WEAR  
AND INSERTION FORCE IS RECOMMENDED.

|                     |      |      |
|---------------------|------|------|
| 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    |

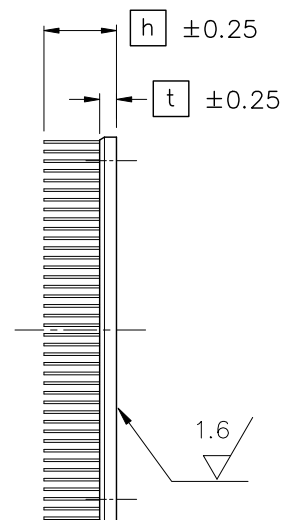
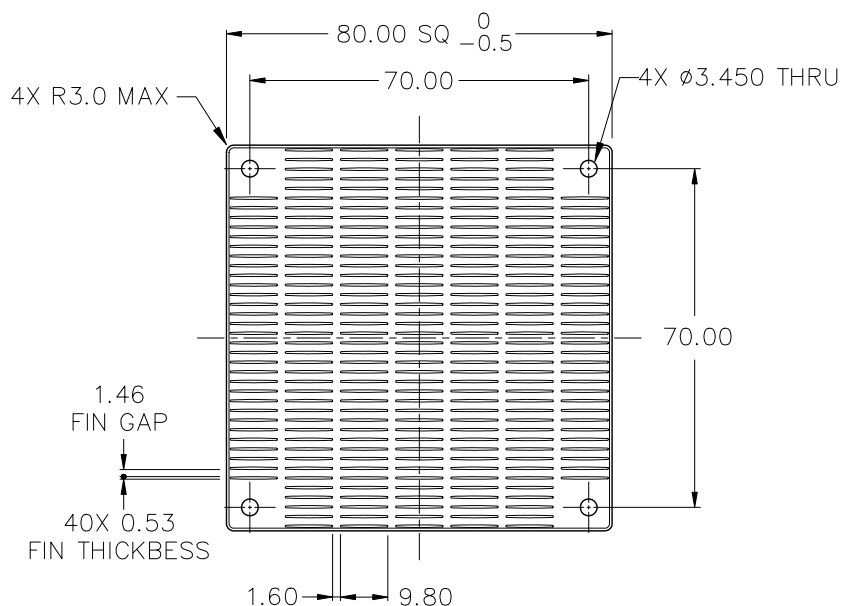
# ALPHA

Low Pressure Drop and  
Low Thermal Resistance Heat Sink  
with attachment holes

# UBP 80



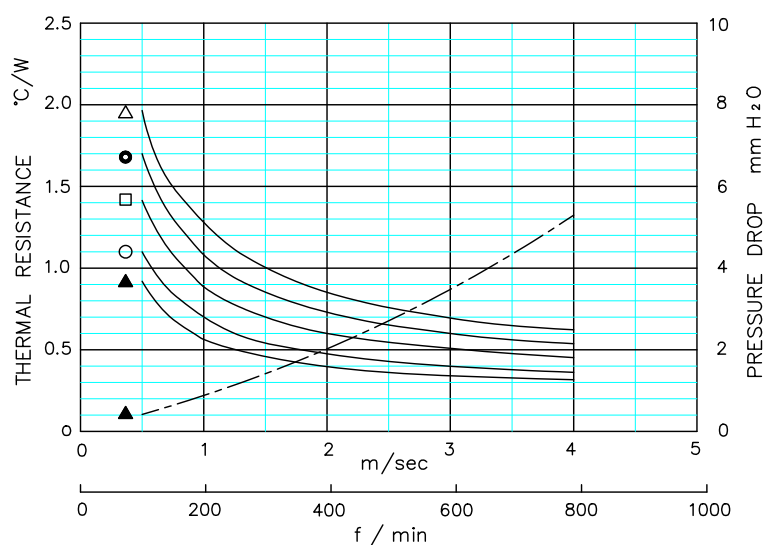
DIM



| MODEL     | HEIGHT [h] | THICKNESS [t] | WEIGHT (grams) |
|-----------|------------|---------------|----------------|
| UBP80-10B | 10         | 3.50          | 81             |
| UBP80-12B | 12         |               | 87             |
| UBP80-15B | 15         |               | 97             |
| UBP80-20B | 20         | 5.00          | 134            |
| UBP80-25B | 25         |               | 150            |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



- △ UBP80-10B
- UBP80-12B
- UBP80-15B
- ◇ UBP80-20B
- ▲ UBP80-25B

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

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

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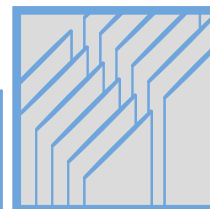
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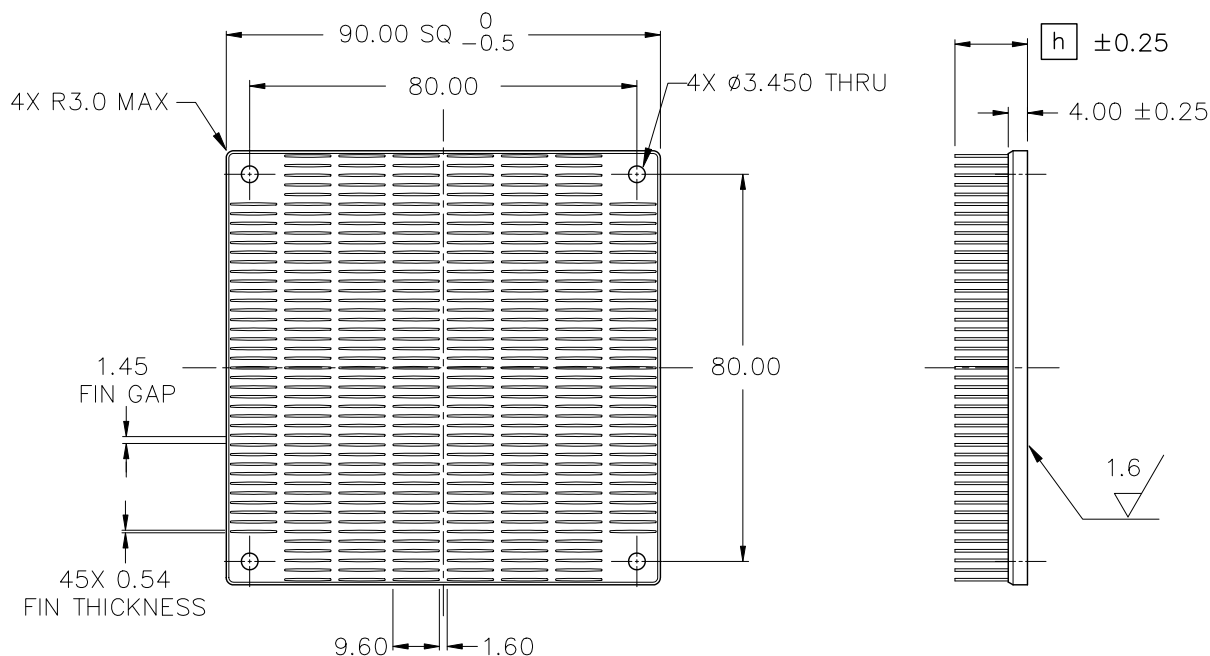
# ALPHA

Low Pressure Drop and  
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with attachment holes

# UBP 90



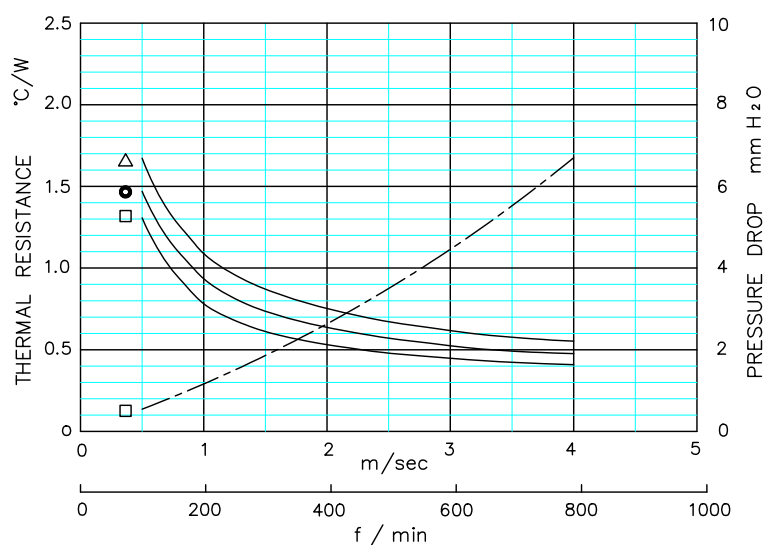
DIM



| MODEL     | HEIGHT [h] | WEIGHT (grams) |
|-----------|------------|----------------|
| UBP90-10B | 10         | 112            |
| UBP90-12B | 12         | 120            |
| UBP90-15B | 15         | 134            |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA



△ UBP90-10B  
● UBP90-12B  
□ UBP90-15B

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

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

AIR VELOCITY: DUCTED CONDITION

Alpha Company Ltd.

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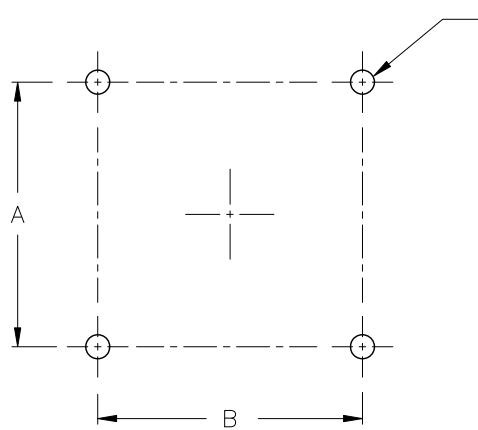
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REF



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    |