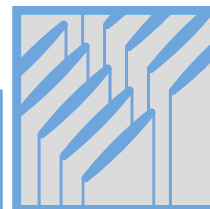


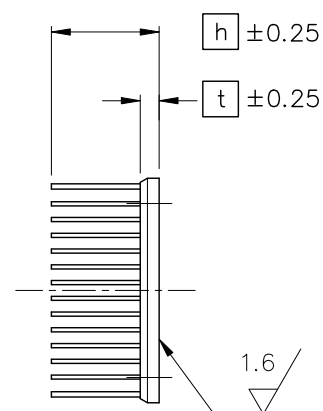
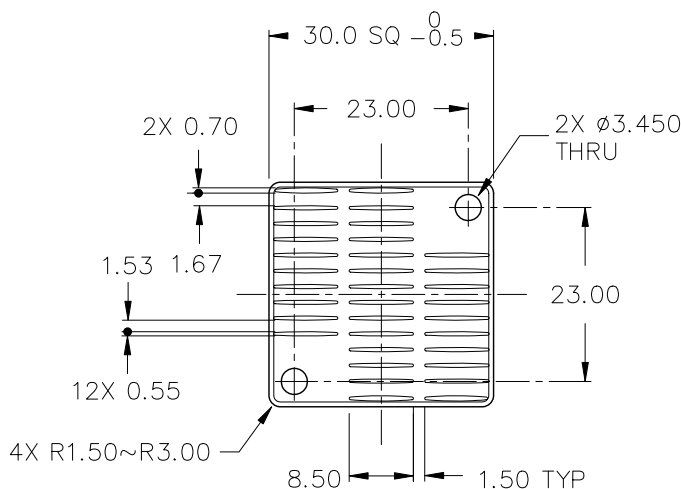
UBM Series
UBH Series
UBP Series

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

ALPHA



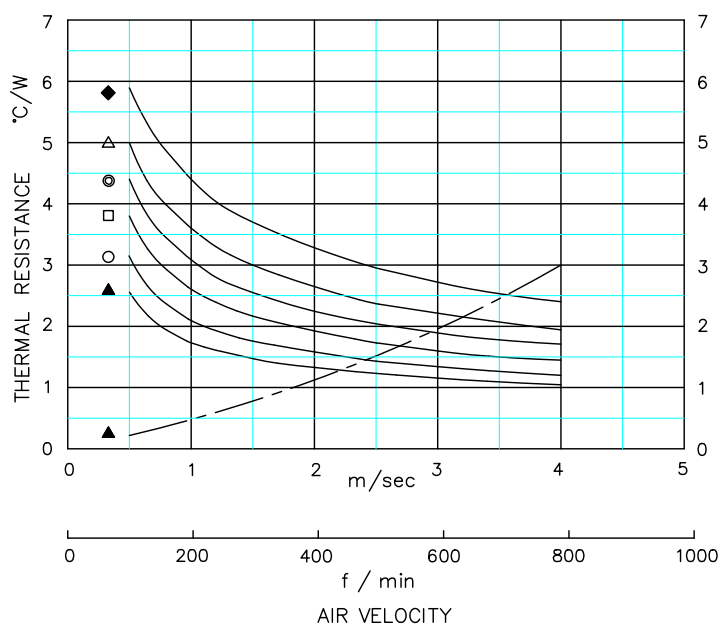
DIM



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 _____
 PRESURE DROP _____

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

Alpha Company Ltd.

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

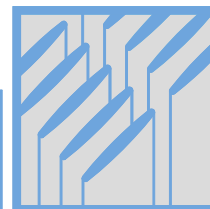
Alpha Novatech, Inc. – a subsidiary of Alpha Company.

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PHONE +1(408)567-8082
FAX +1(408)567-8053
E mail : sales@alphanovatech.com
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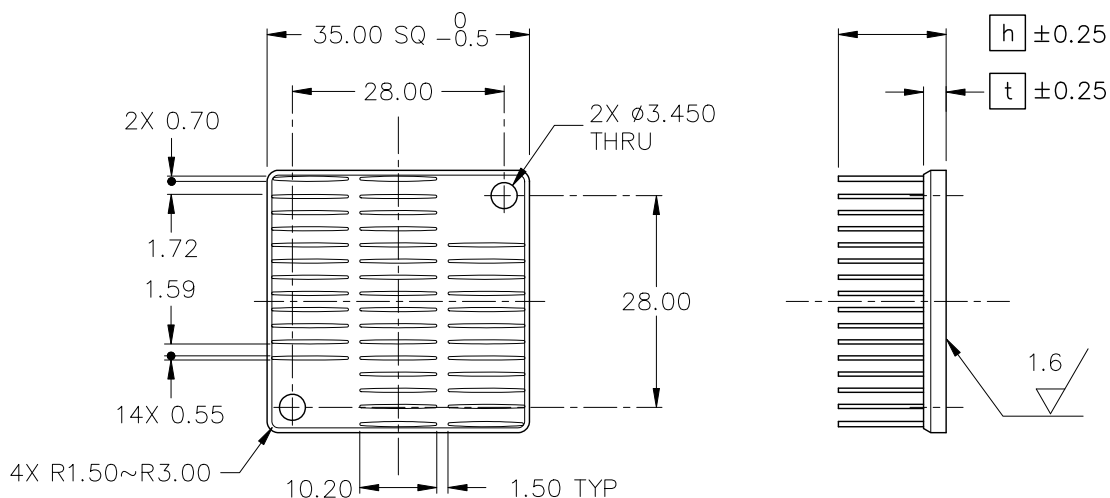
ALPHA

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

UBM35



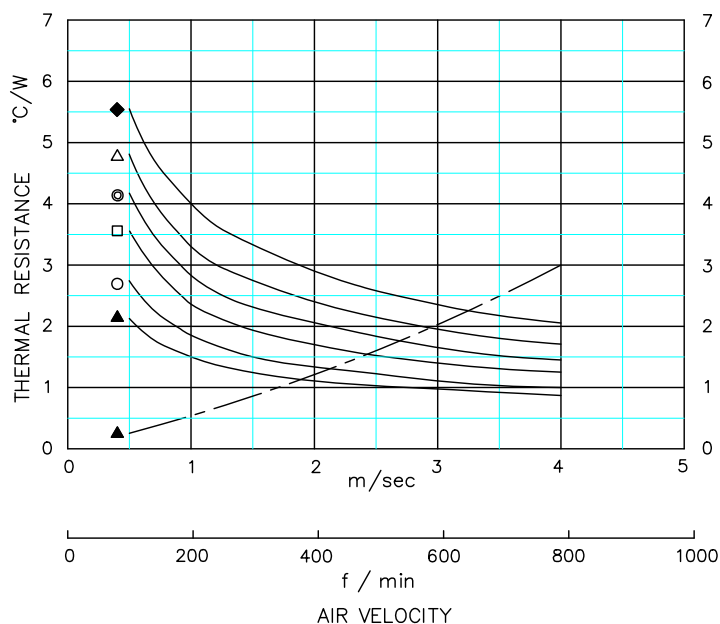
DIM



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



- ◆ UBM35-8BP
- △ UBM35-10BP
- ⊙ UBM35-12BP
- UBM35-15BP
- UBM35-20BP
- ▲ UBM35-25BP

● 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.

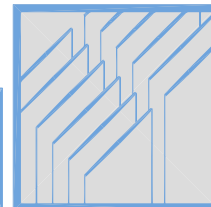
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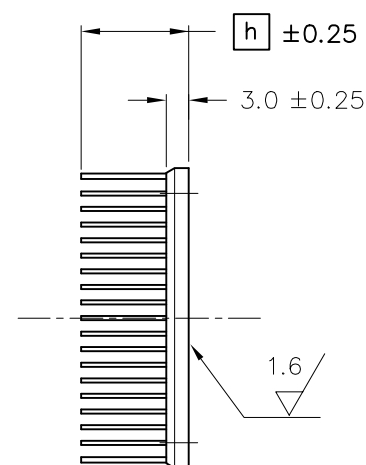
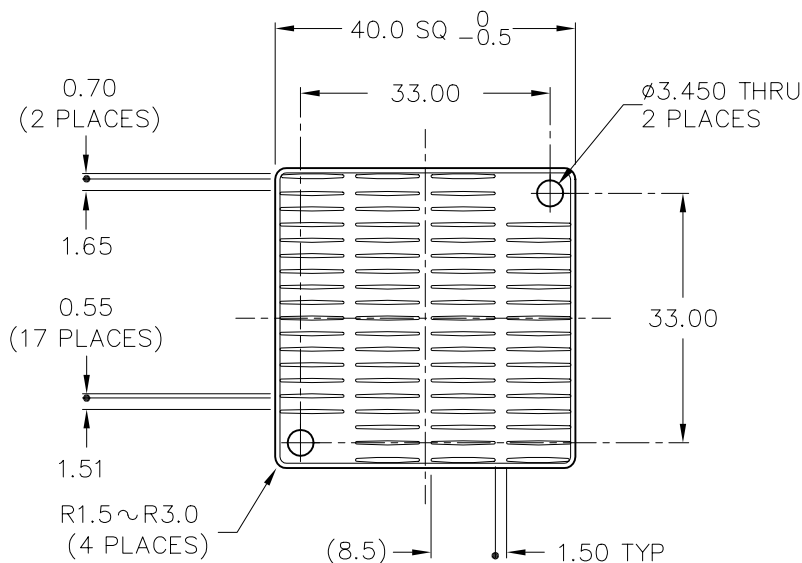
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ALPHA

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

UBM40

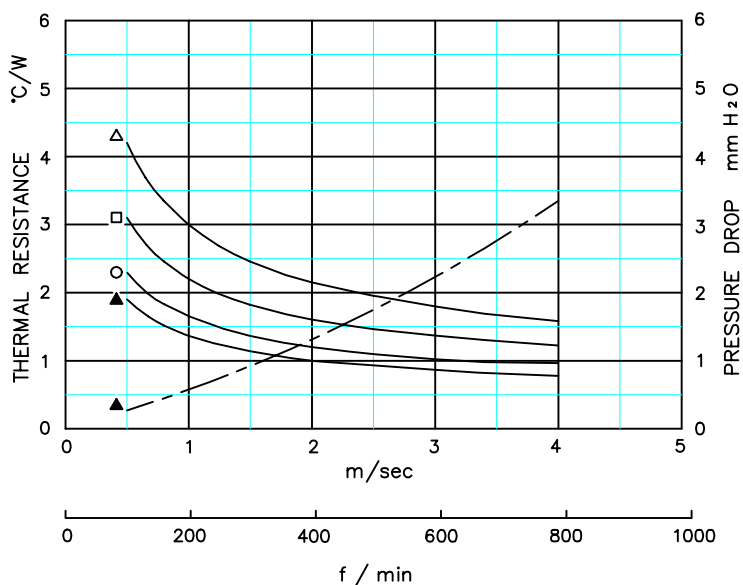
DIM



MODEL	HEIGHT [h]	WEIGHT (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

DATA



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

● 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.

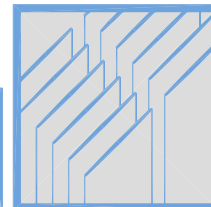
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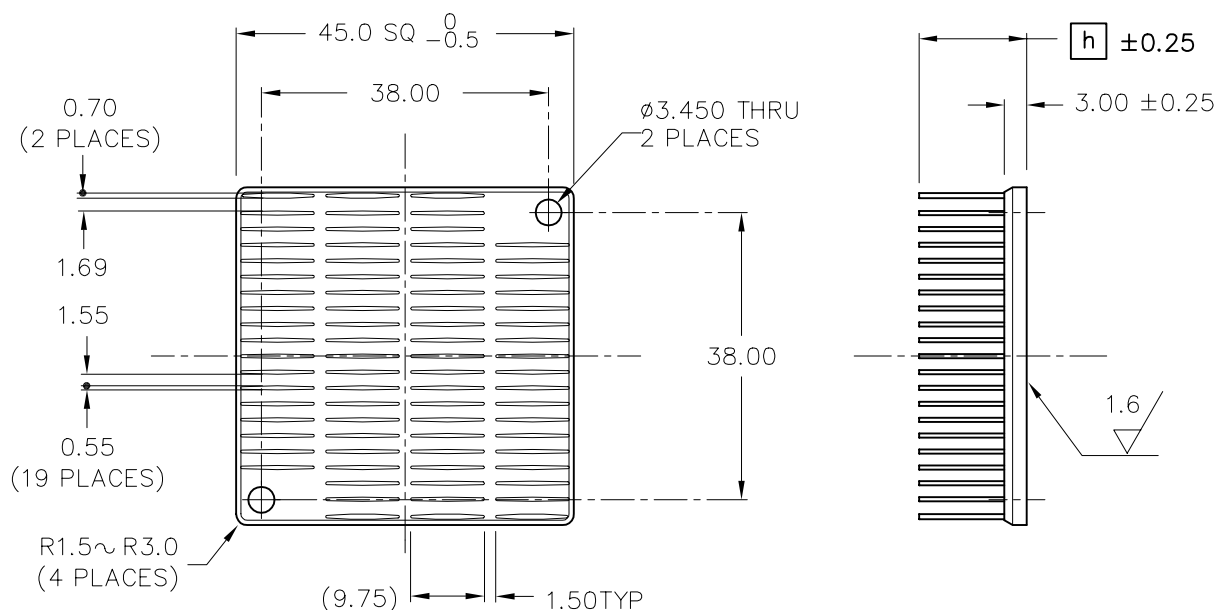
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ALPHA

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

UBM 45

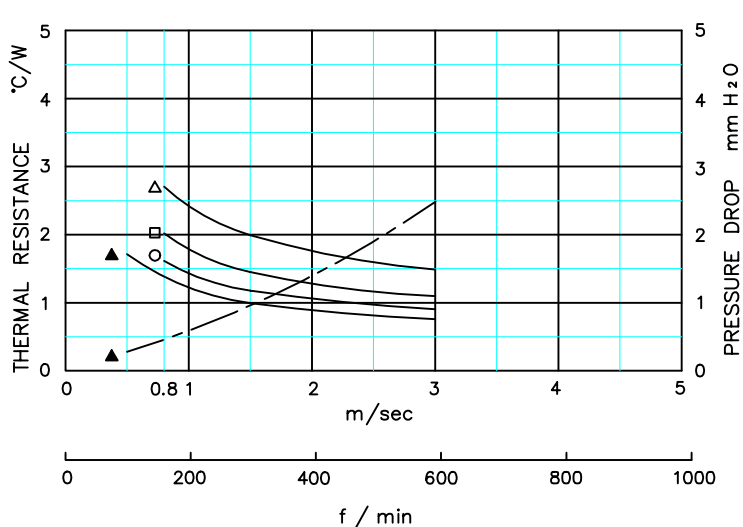
DIM



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 ———
PRESSURE DROP - - -

AIR VELOCITY: DUCTED CONDITION

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

Alpha Company Ltd.

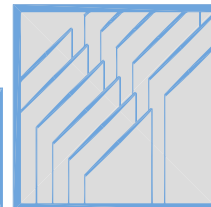
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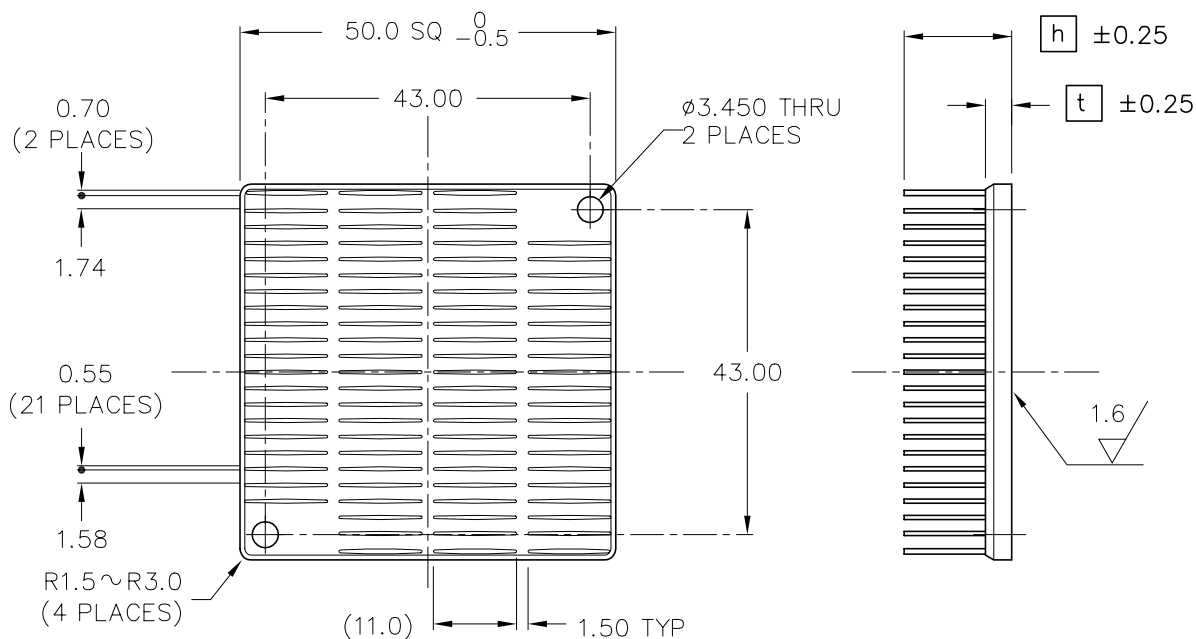
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ALPHA

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

UBM50

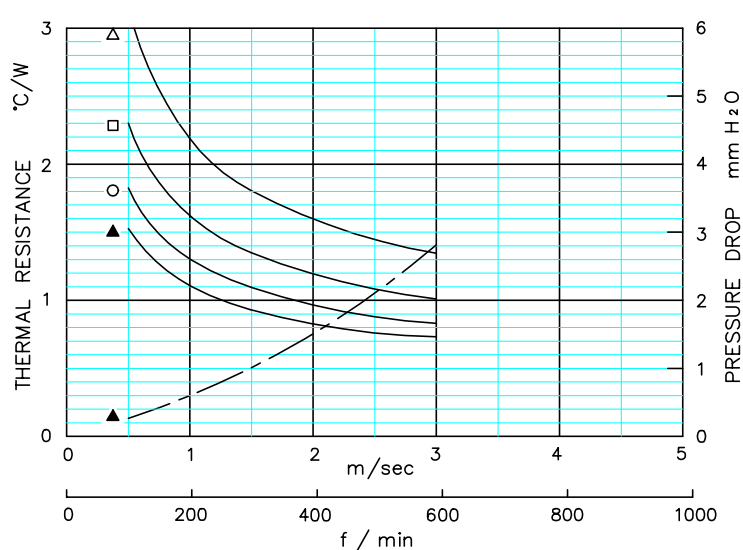
DIM



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



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

● 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.

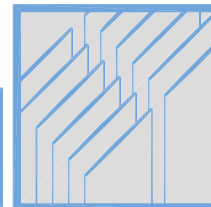
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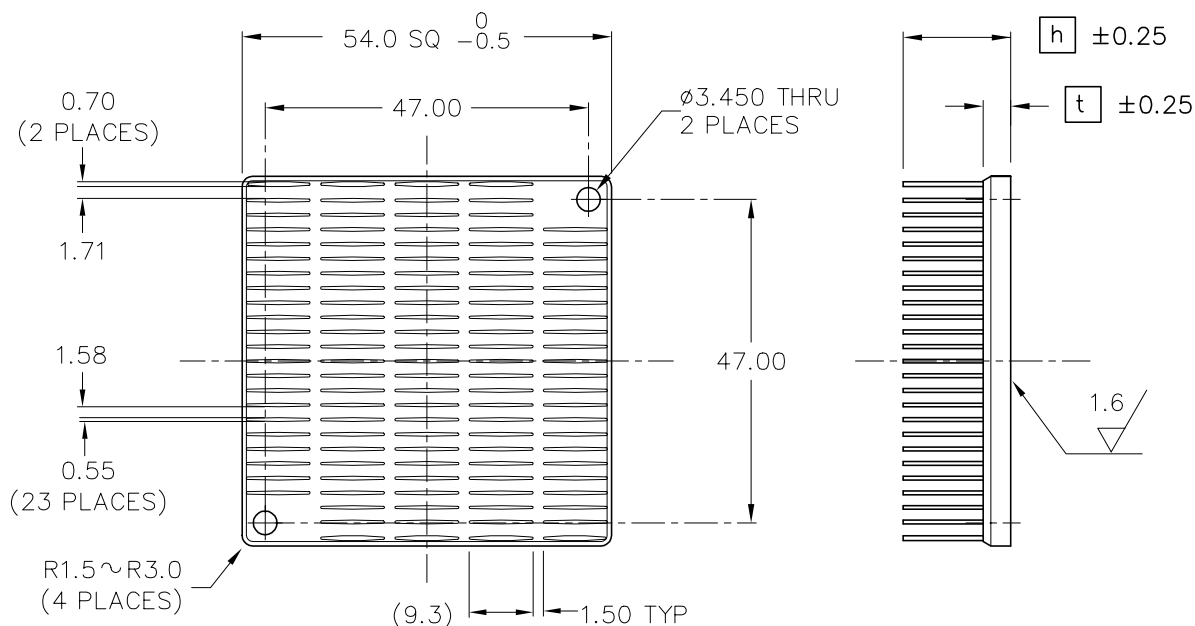
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ALPHA

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

UBM54

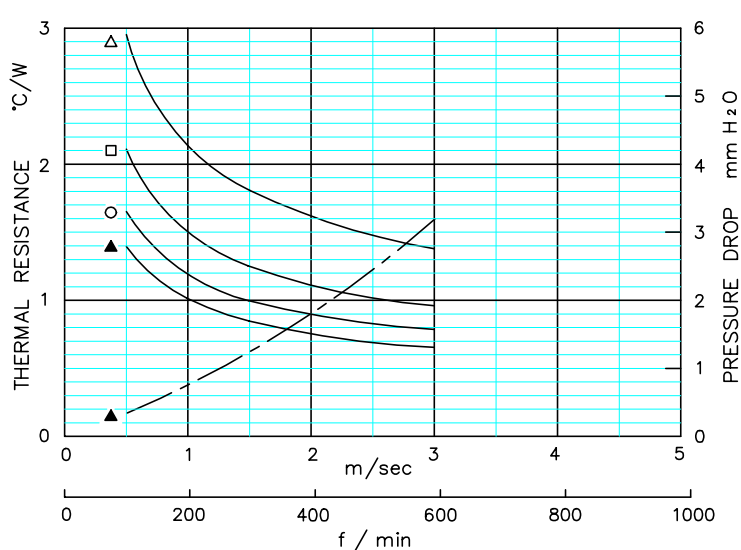
DIM



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.

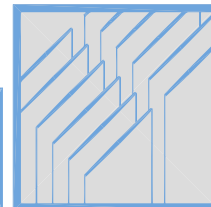
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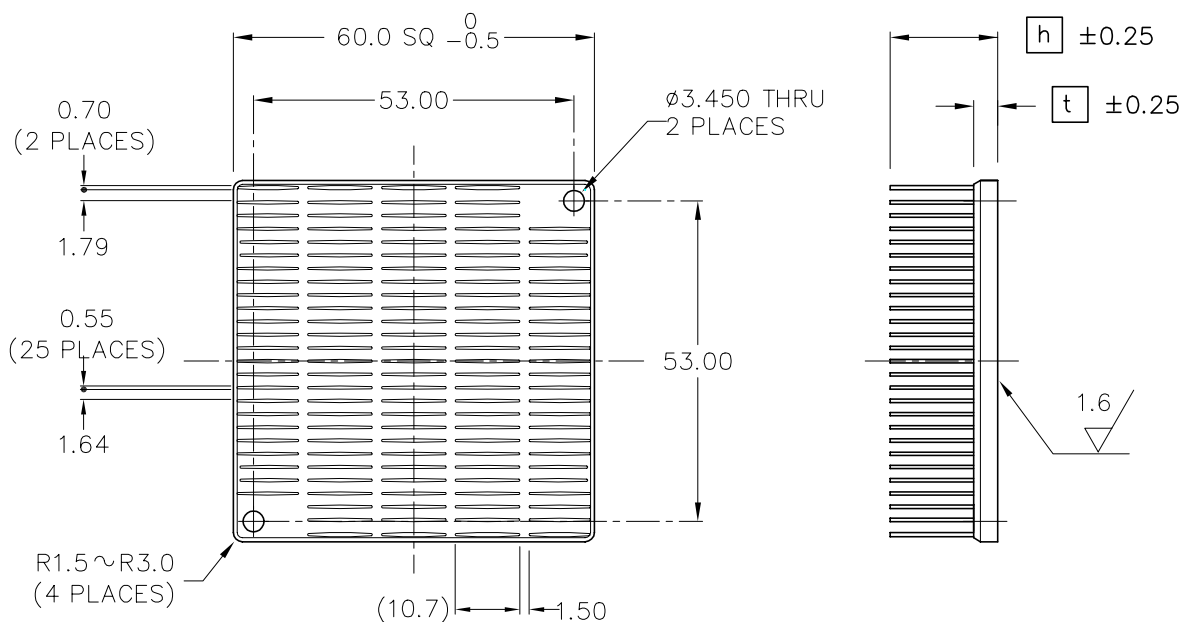
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ALPHA

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

UBM 60

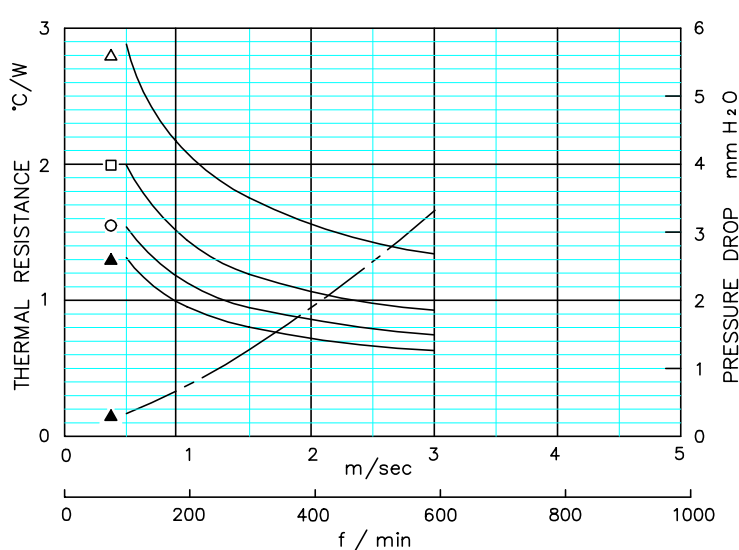
DIM



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



- △ UBM60-10BP
- UBM60-15BP
- UBM60-20BP
- ▲ UBM60-25BP

● 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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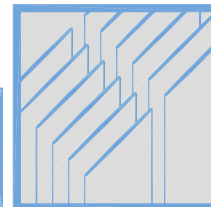
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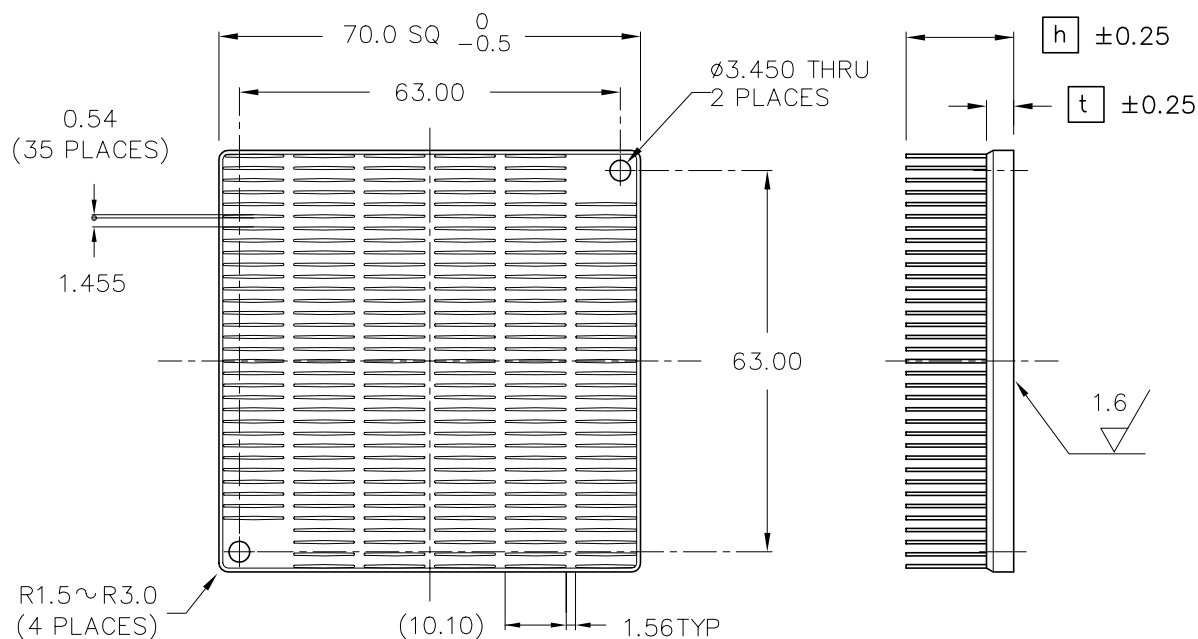
ALPHA

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

UBM70



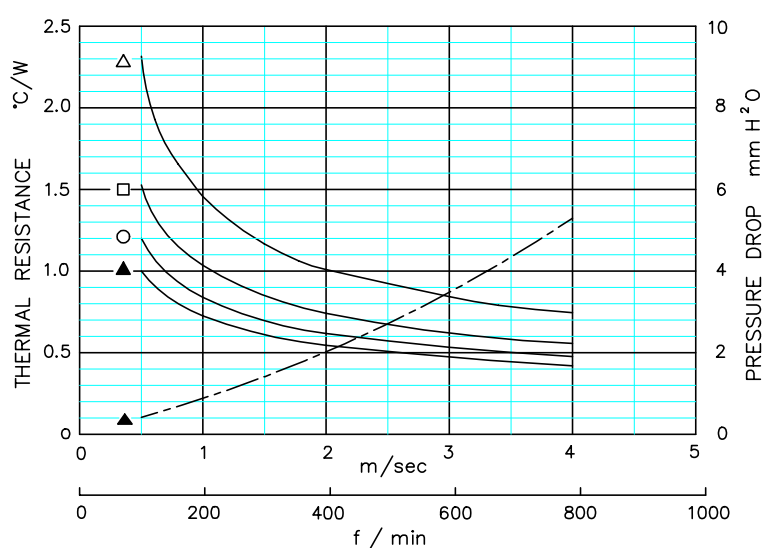
DIM



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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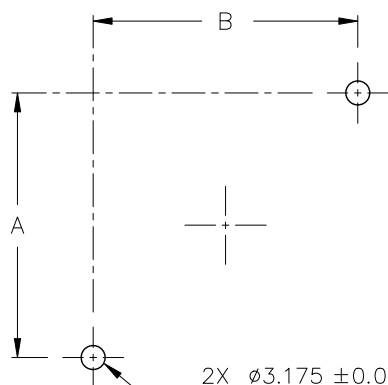
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REF



PCB HOLE LAYOUT



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

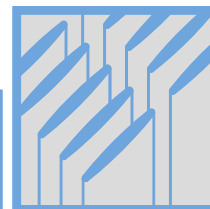
USE OF PLATED HOLES TO REDUCE EXCESSIVE WEAR
AND INSERTION FORCE IS RECOMMENDED.

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

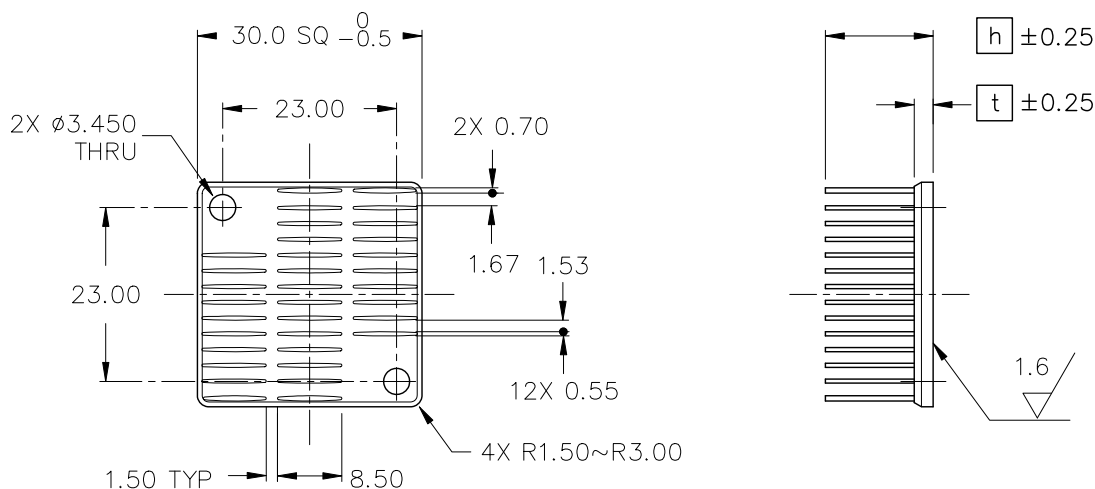
ALPHA

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

UBH 30



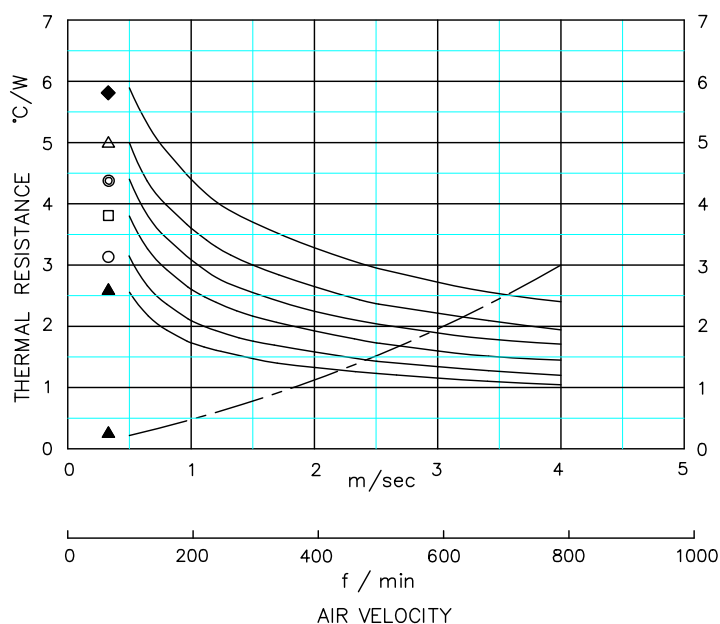
DIM



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



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

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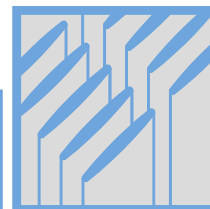
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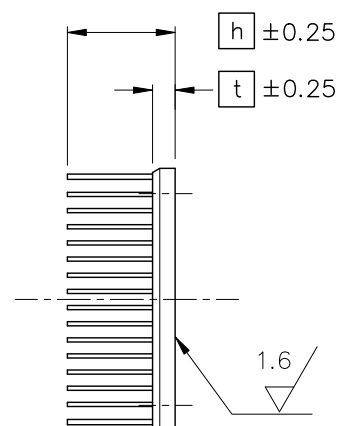
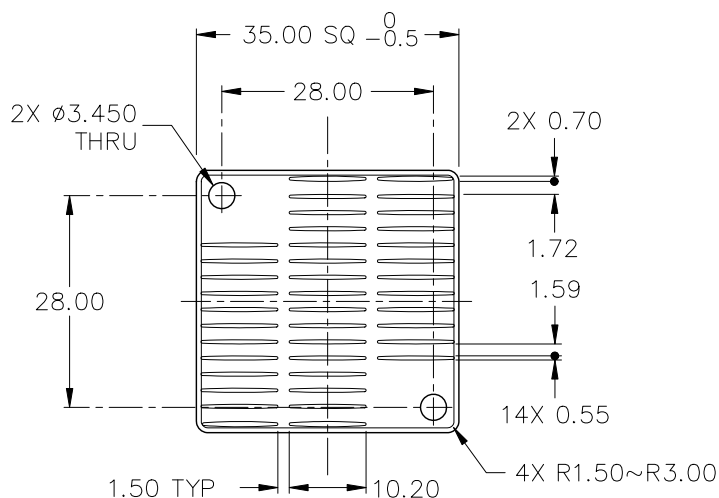
ALPHA

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

UBH 35



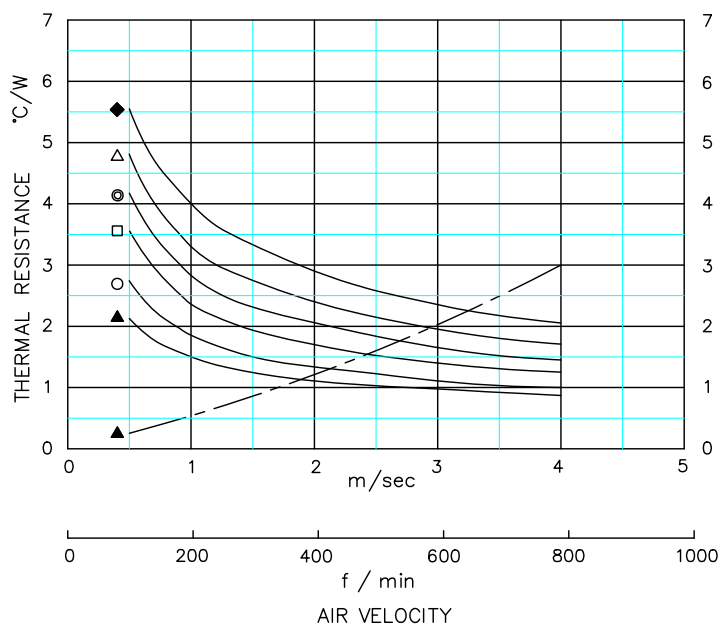
DIM



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

DATA



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

● 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.

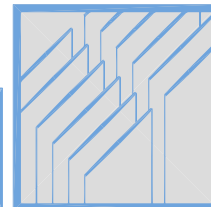
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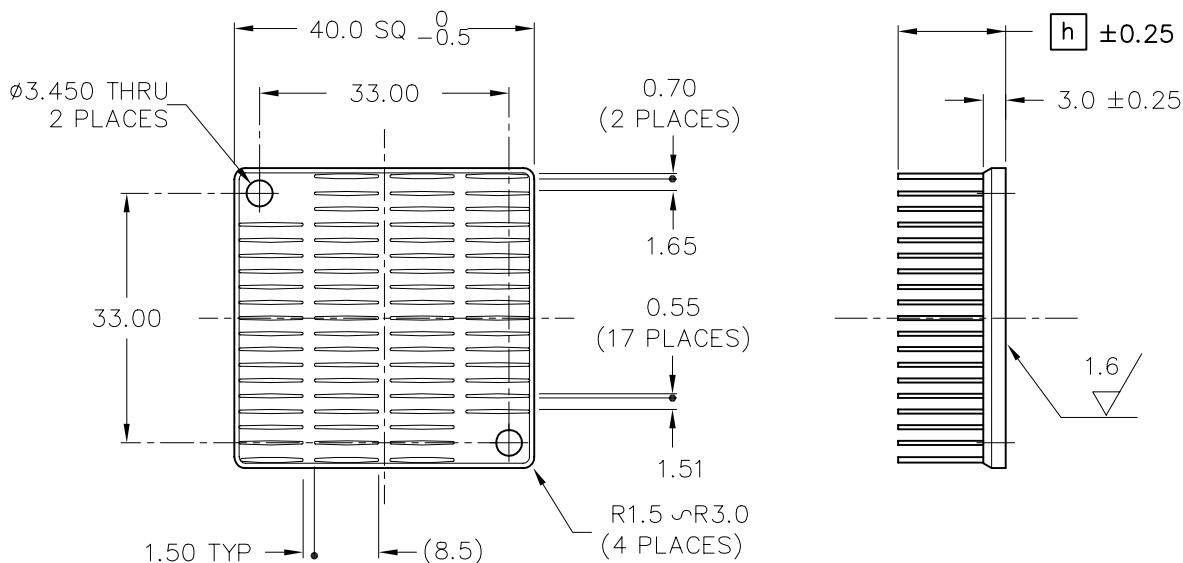
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ALPHA

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

UBH 40

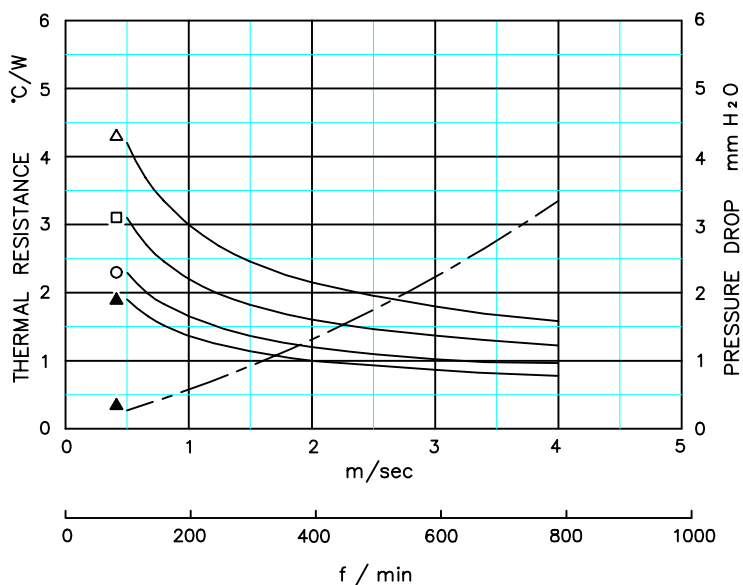
DIM



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 ———
 PRESURE DROP - - -

AIR VELOCITY: DUCTED CONDITION

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

Alpha Company Ltd.

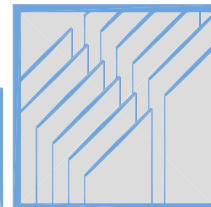
256-1 UEDA, NUMAZU-CITY SHIZUOKA-PREF., JAPAN
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 FAX +81(55)966 9192
 E mail : alpha@micforg.co.jp
 URL : <http://www.micforg.co.jp>

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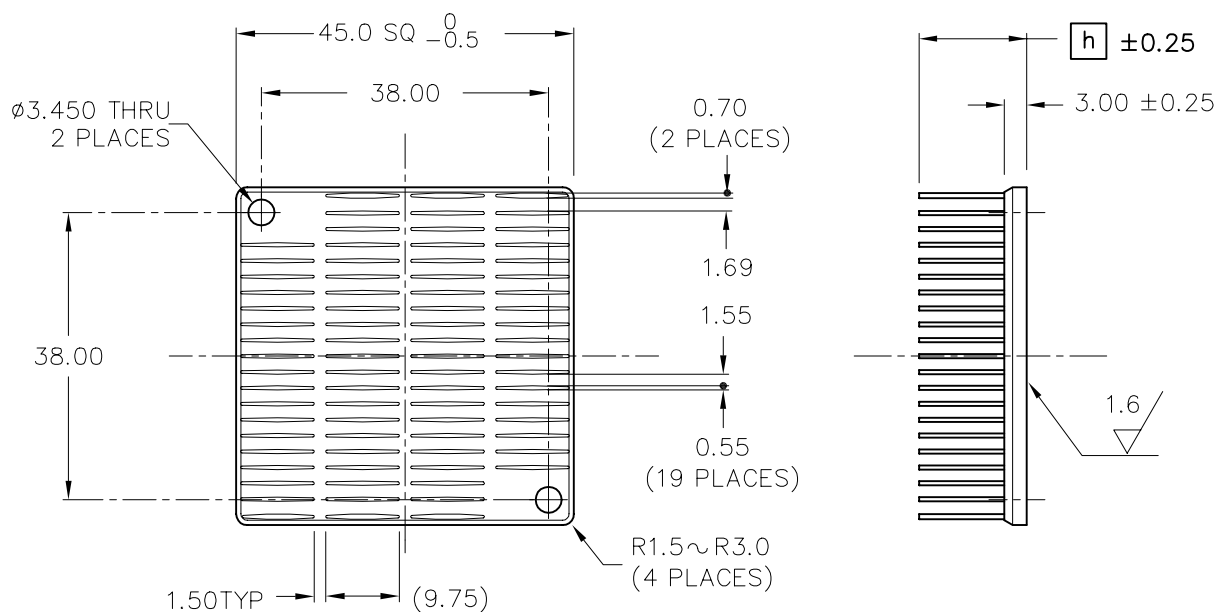
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ALPHA

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

UBH 45

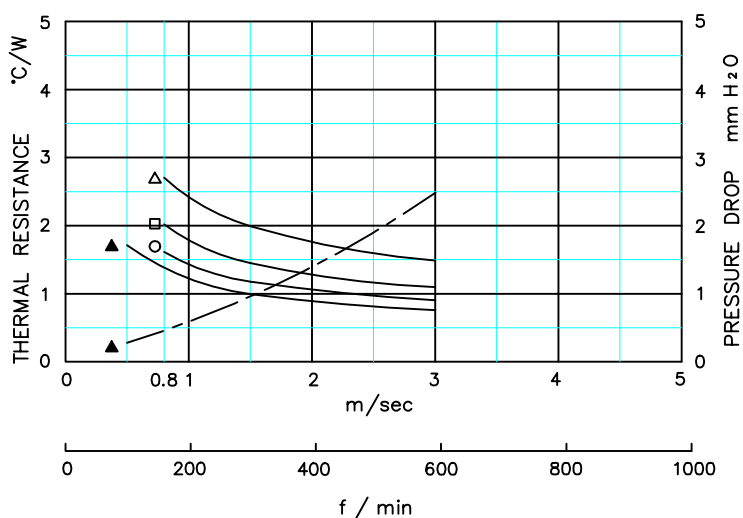
DIM



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



- △ UBH45-10BP
- UBH45-15BP
- UBH45-20BP
- ▲ UBH45-25BP

● 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.

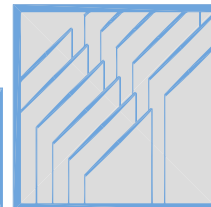
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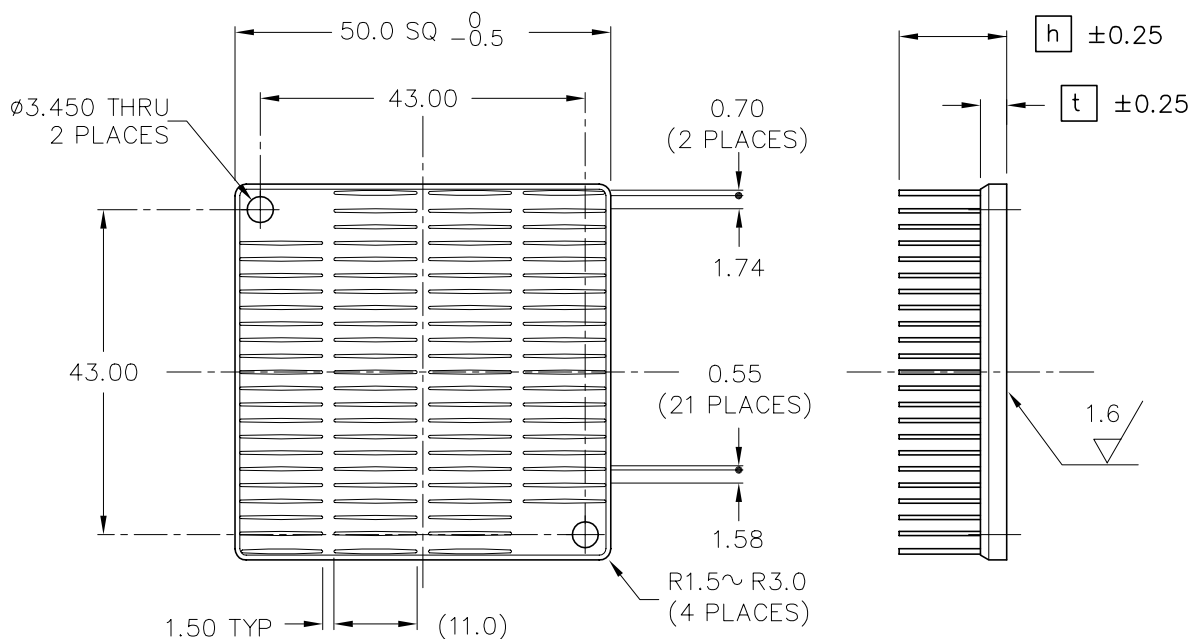
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ALPHA

Low Pressure Drop and
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with attachment holes

UBH 50

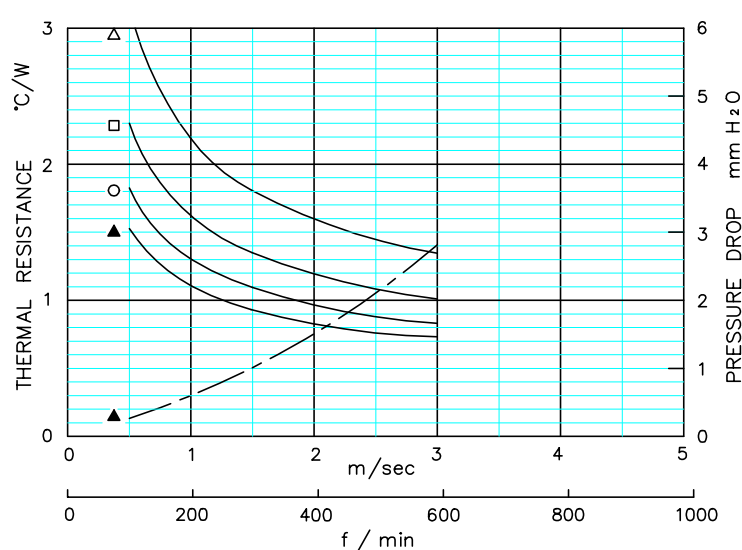
DIM



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



AIR VELOCITY: DUCTED CONDITION

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

Alpha Company Ltd.

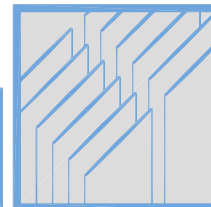
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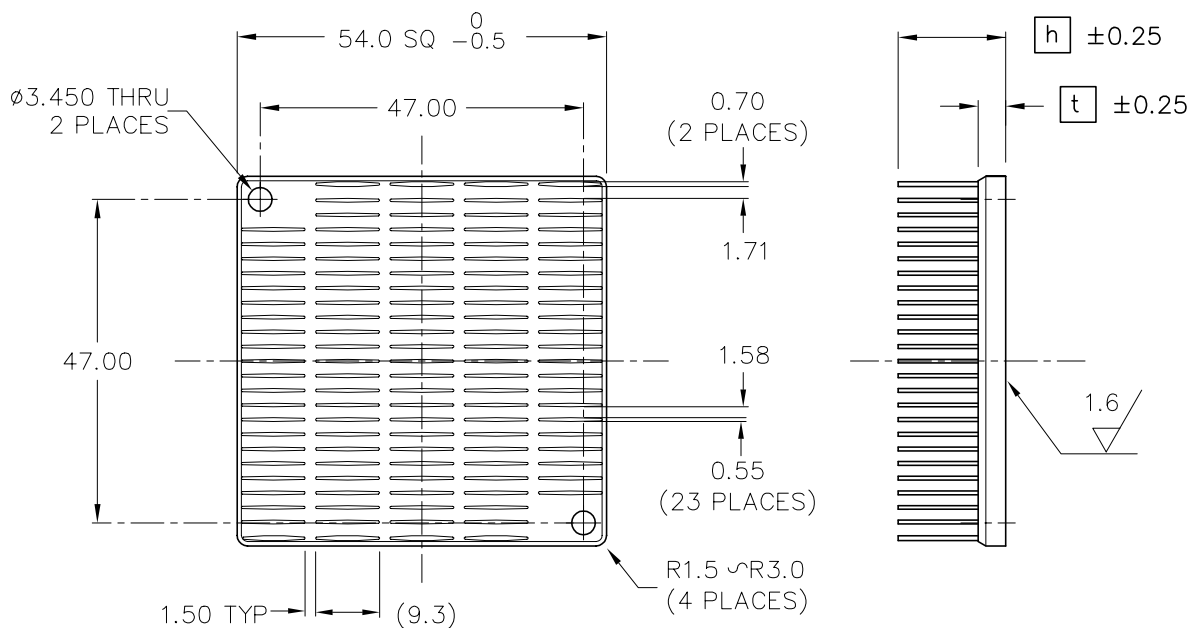
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ALPHA

Low Pressure Drop and
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with attachment holes

UBH54

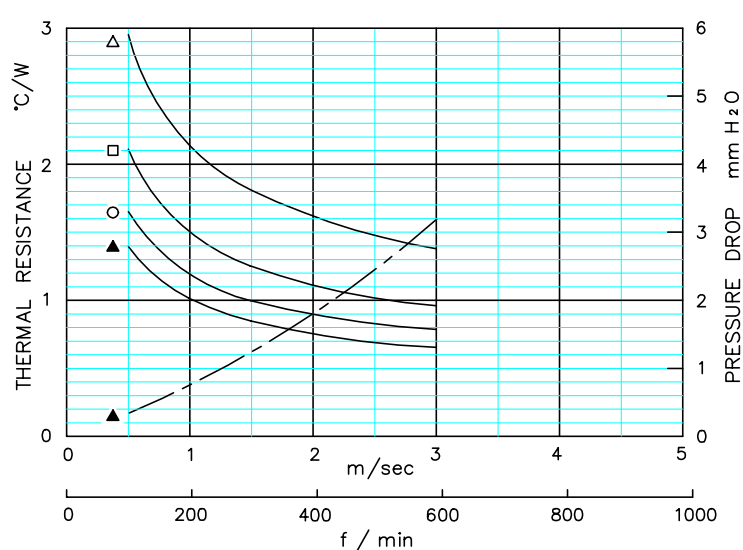
DIM



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.

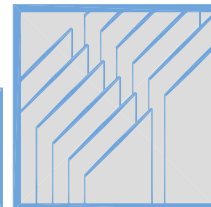
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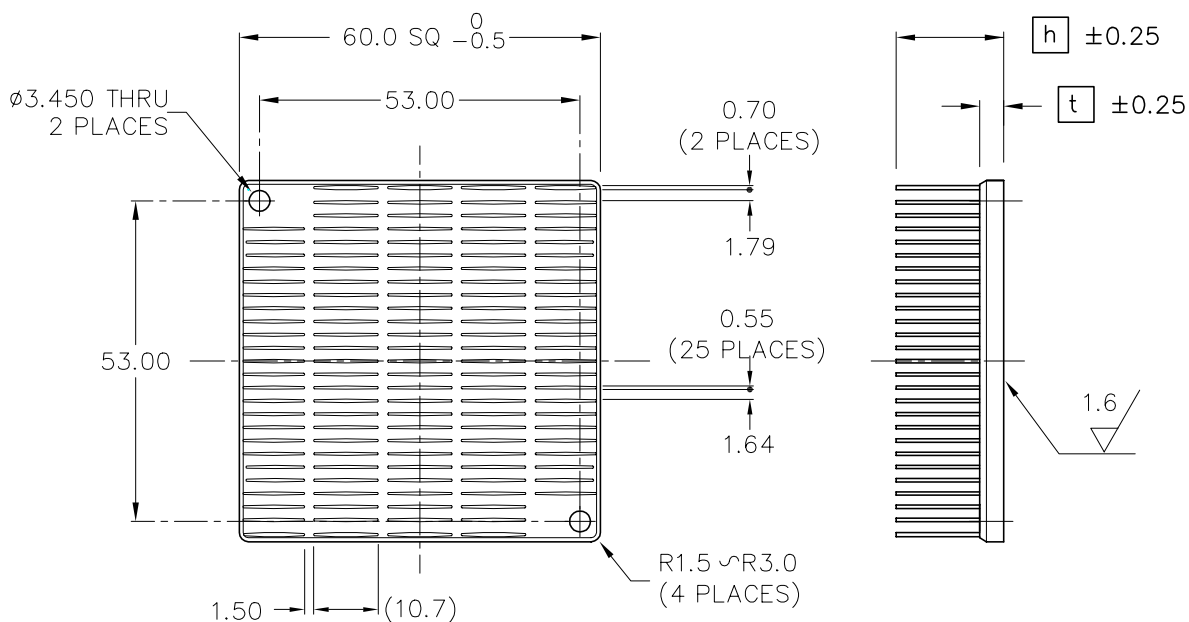
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ALPHA

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

UBH 60

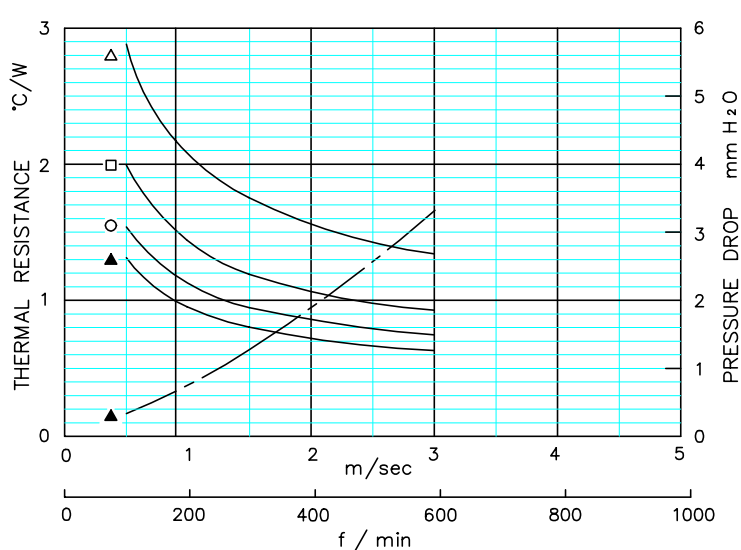
DIM



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.

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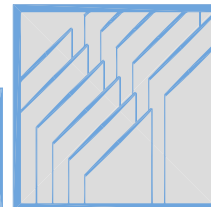
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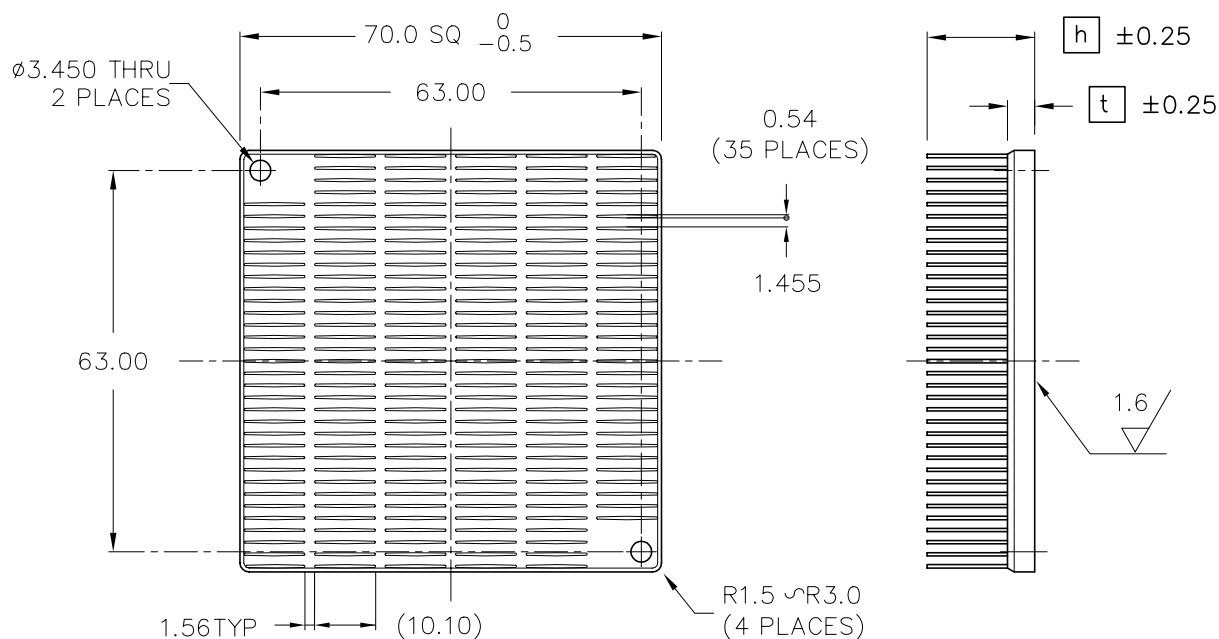
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ALPHA

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

UBH 70

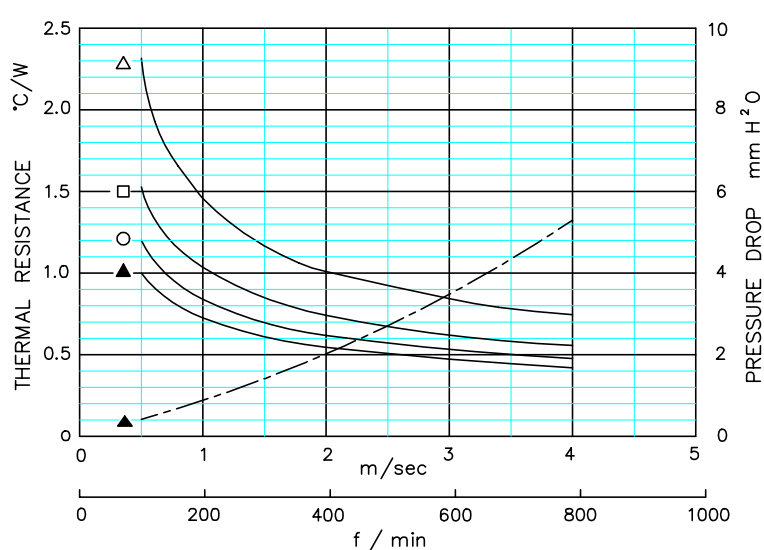
DIM



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



- Δ 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.
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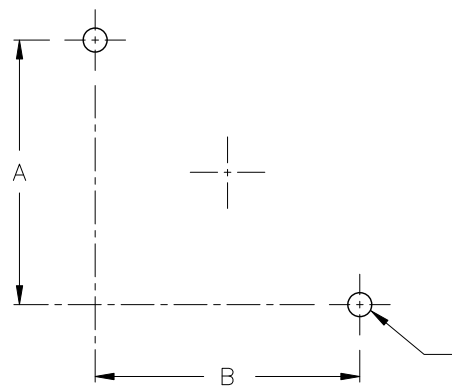
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REF



PCB HOLE LAYOUT



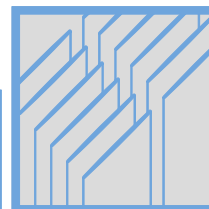
2X $\phi 3.175 \pm 0.05$ [$\phi .125 \pm .002$]
USE OF PLATED HOLES TO REDUCE EXCESSIVE WEAR
AND INSERTION FORCE IS RECOMMENDED.

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

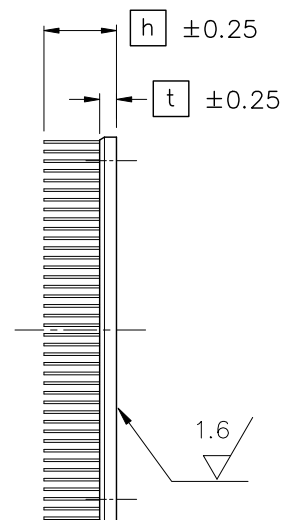
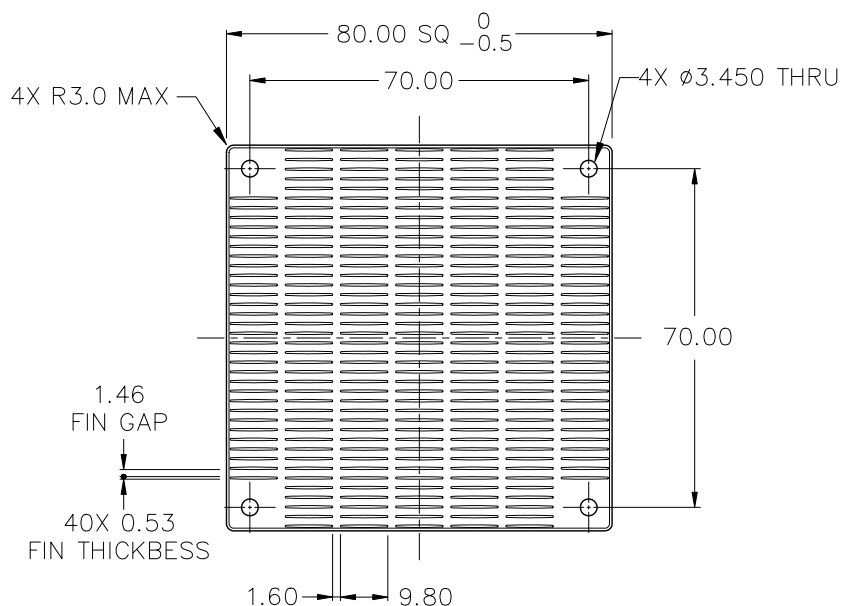
ALPHA

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

UBP 80



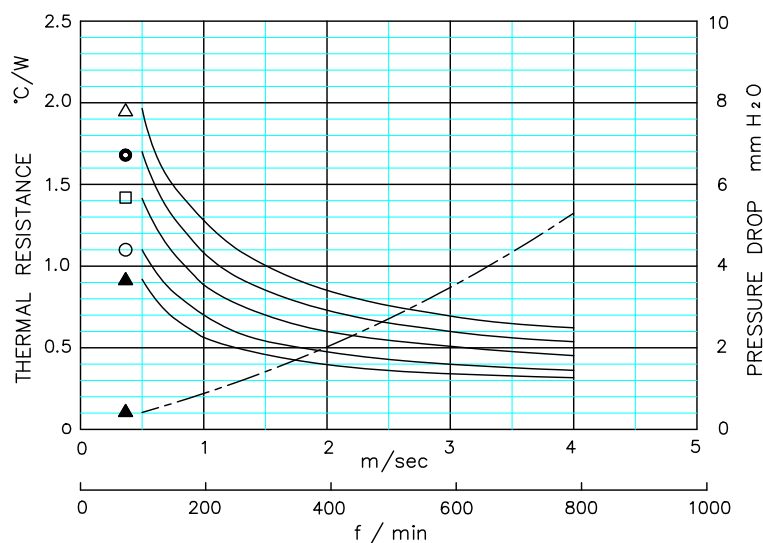
DIM



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 ———
PRESSURE DROP - - - - -

■ BASED ON ALPHA'S STANDARD TEST PROCEDURE.
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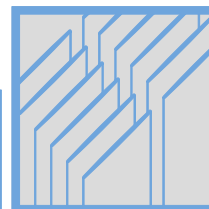
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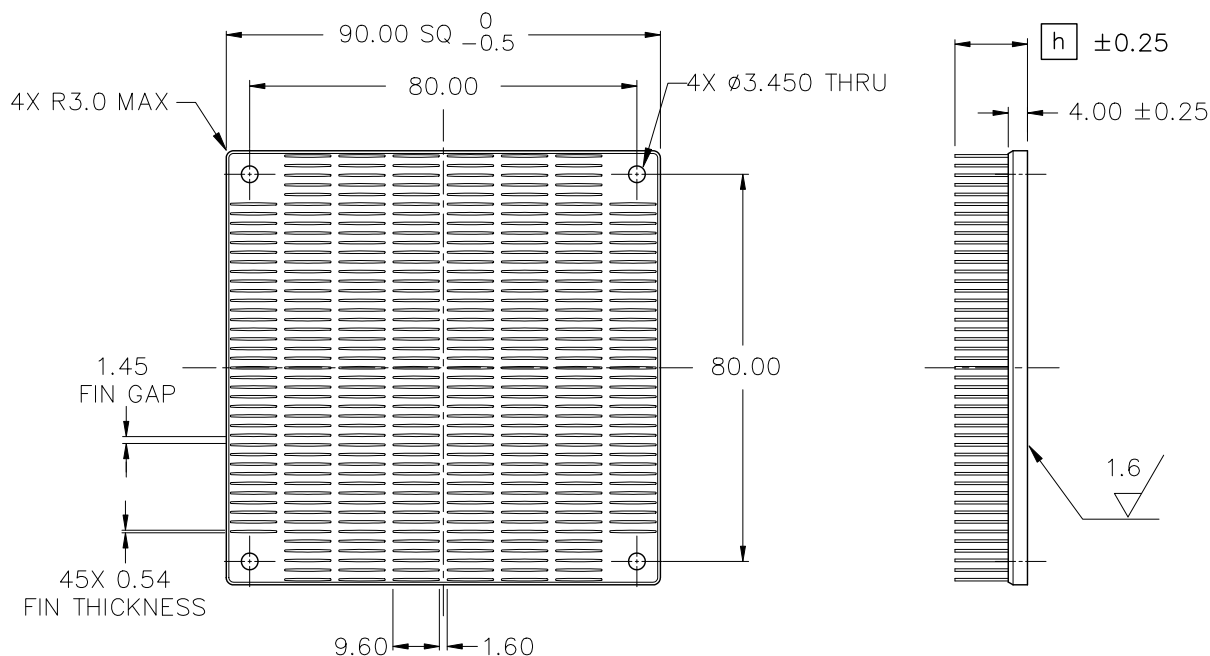
ALPHA

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

UBP 90



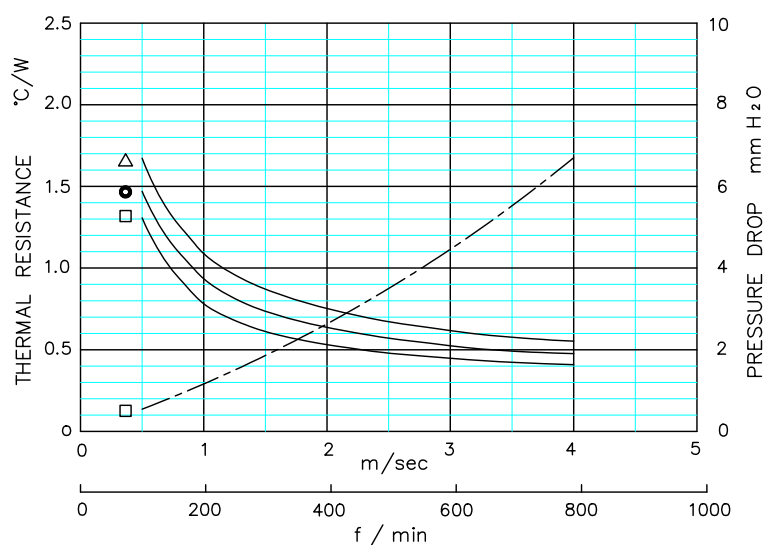
DIM



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



BASED ON ALPHA'S STANDARD TEST PROCEDURE.
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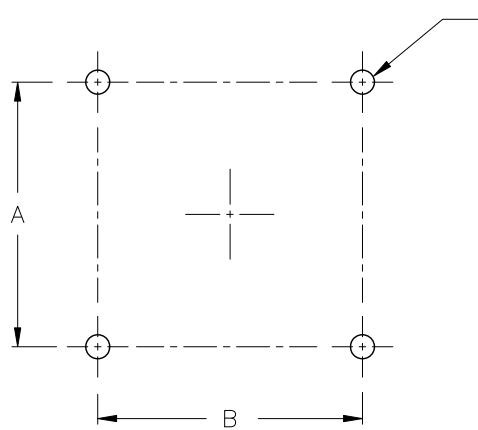
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REF



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