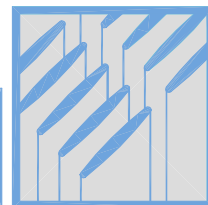


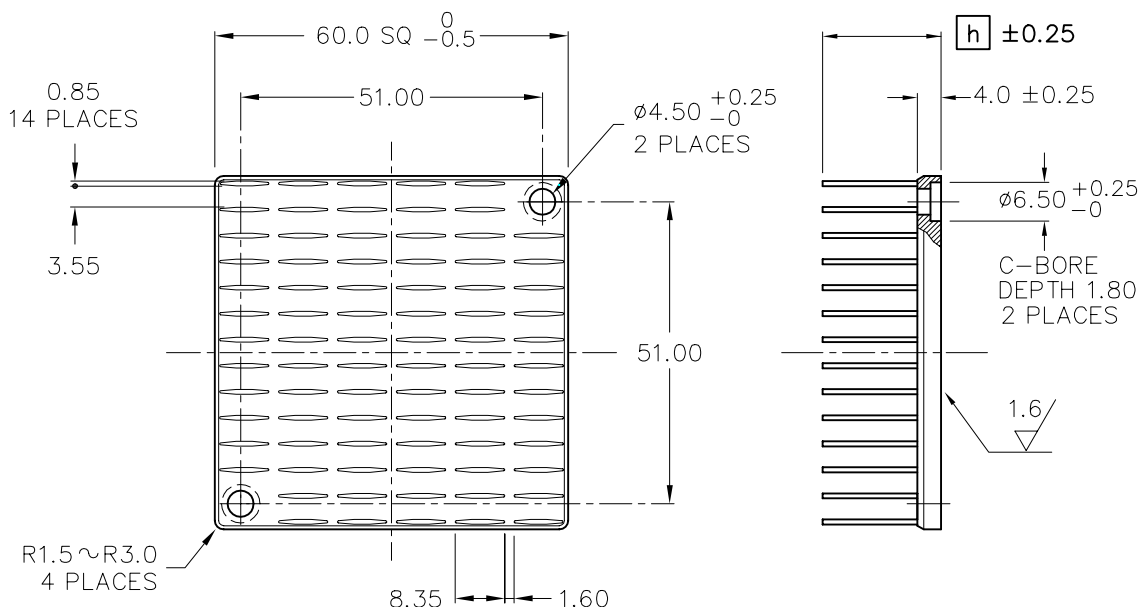
LPDM_S Series
LPDH_S Series
LPD_S Series

Low Pressure Drop Heat Sink
with Attachment Holes

ALPHA

ALPHA**Low Pressure Drop Heat Sink
with attachment holes****LPDM60S**

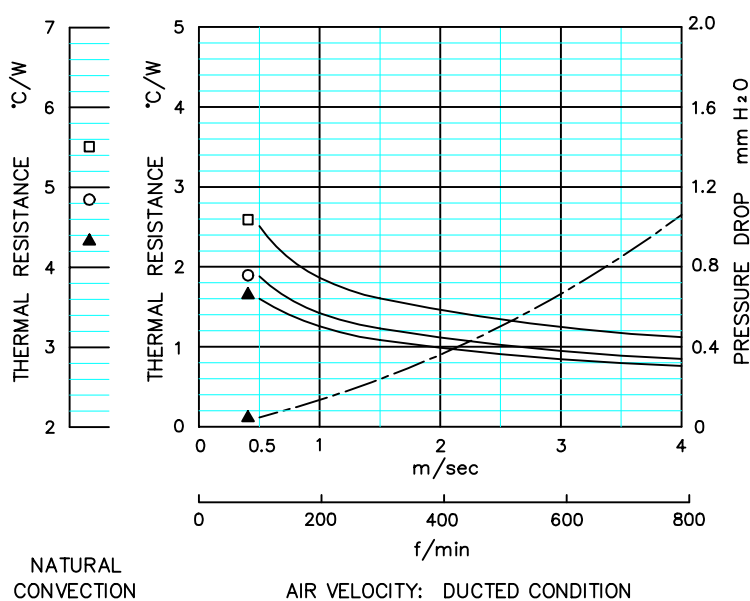
DIM



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

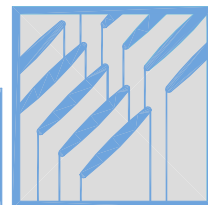


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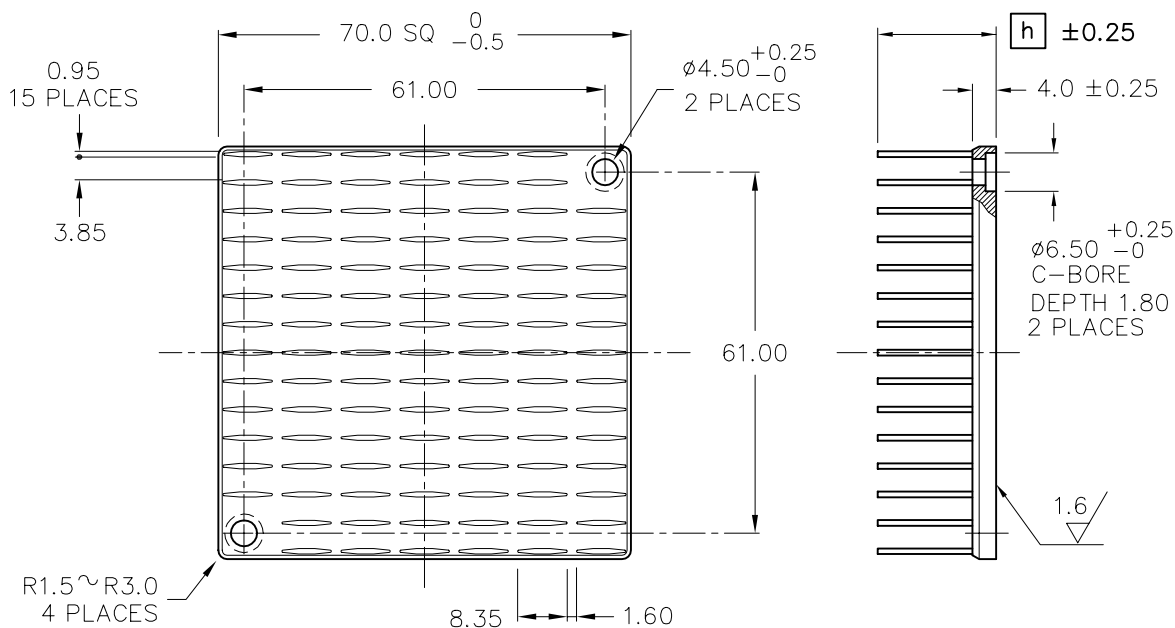
256-1 UEDA, NUMAZU-CITY SHIZUOKA-PREF., JAPAN
 PHONE +81(55)966 0789
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 E mail : alpha@micforg.co.jp
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ALPHA**Low Pressure Drop Heat Sink
with attachment holes****LPDM70S**

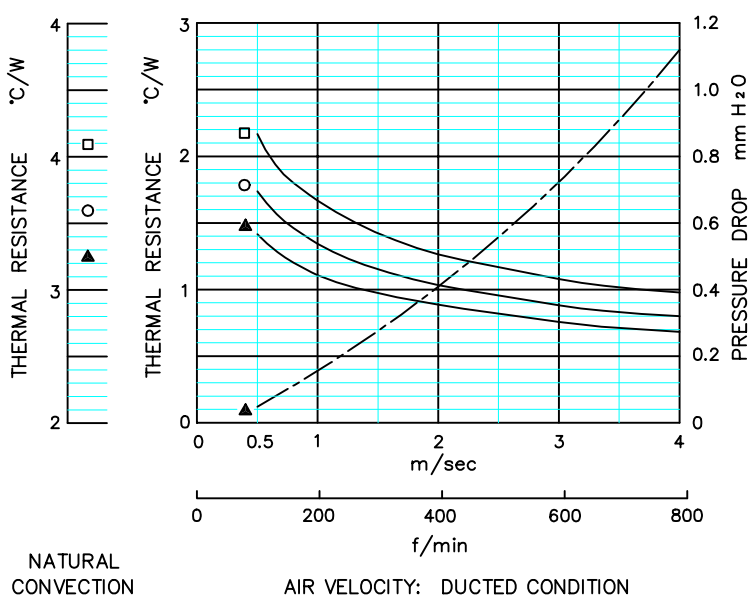
DIM



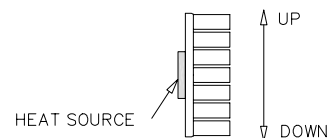
MODEL	HEIGHT [h]	WEIGHT (grams)
LPDM70S-15B	15	70.7
LPDM70S-20B	20	78.6
LPDM70S-25B	25	86.6

MATERIAL : A 6063
 FINISH : BLACK ANODIZE
 DIMENSIONS : mm

DATA



- LPDM70S-15B
- LPDM70S-20B
- ▲ LPDM70S-25B
- DUCTED CONDITION
DUMMY HEATER SIZE: 12.7 SQ
THERMAL RESISTANCE ———
PRESSURE 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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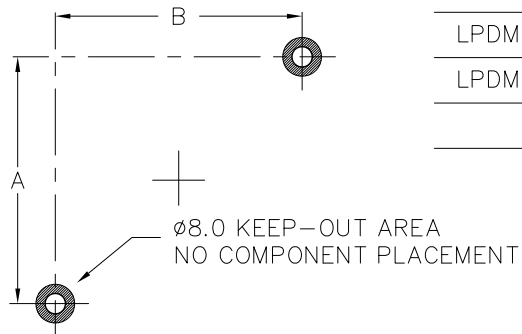
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REF



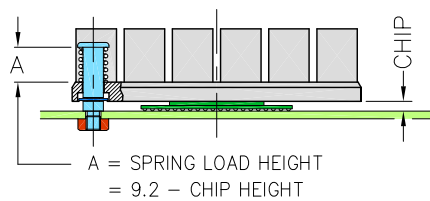
● BOARD KEEPOUT PATTERNS



LPDM60S AND UBM60S	51.0	51.0
LPDM70S AND UBM70S	61.0	61.0
MODEL	A	B

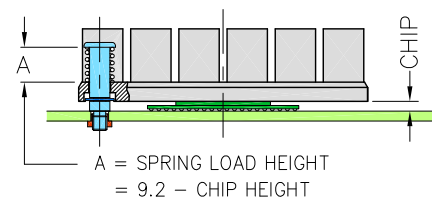
● INSTALLATION

USE HEX NUTS M3x0.5



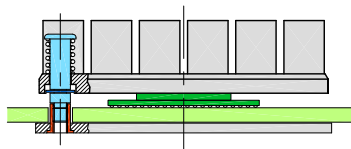
REQUIRES $\phi 3.30$ THRU HOLES IN BOARD.
RECOMMENDED P.C.B THICKNESS 1.6mm.
MINIMUM CHIP HEIGHT 1.5mm.

USE *MAC8* TH-1.6-XX-M3



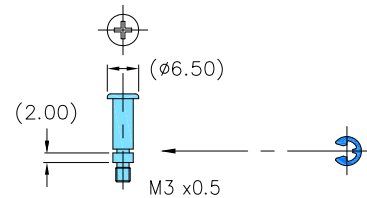
REQUIRES $\phi 3.70$ THRU HOLES IN BOARD.
MAC8 THREAD INSERT NEED THE SOLDERING.
RECOMMENDED P.C.B THICKNESS
MINIMUM 1.6mm ~ MAXIMUM 3.7mm
MINIMUM CHIP HEIGHT 1.5mm.

USE CUSTOM BACKING-PLATE

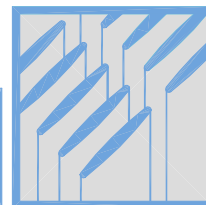


CUSTOM DESIGN FOR ANY PCB THICKNESS.

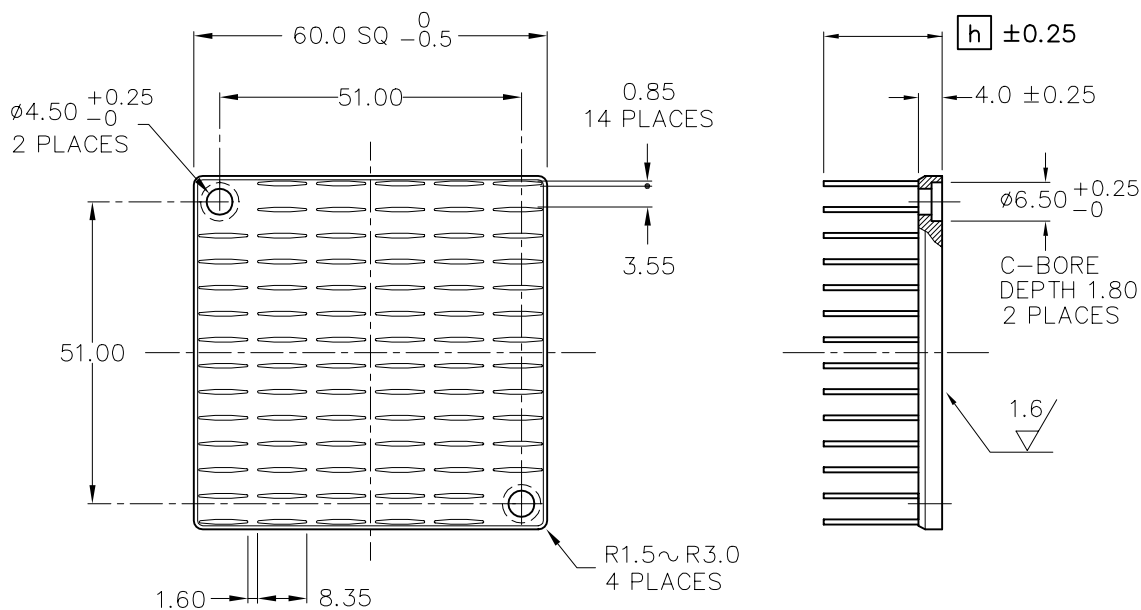
SHOULDER-SCREW/RETAINING RING E-2.5



REFER TO THE DRAWING FOR DETAIL SPECIFICATION.

ALPHALow Pressure Drop Heat Sink
with attachment holes**LPDH60S**

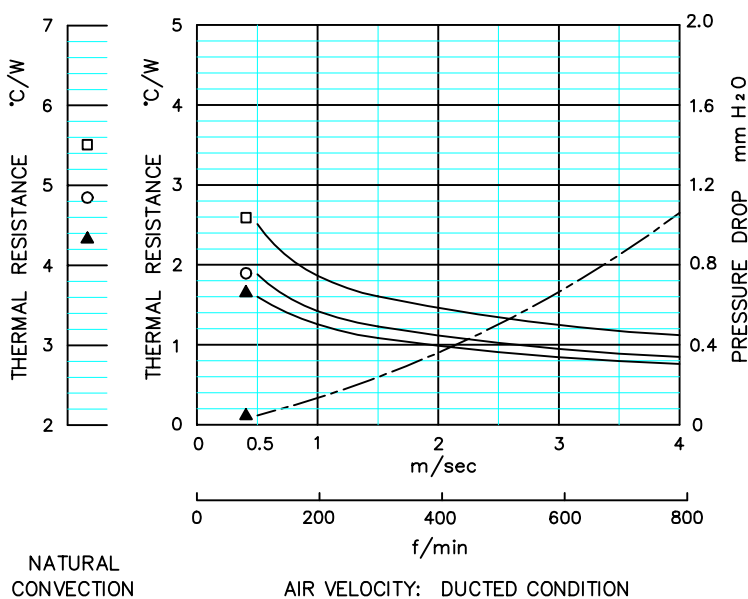
DIM



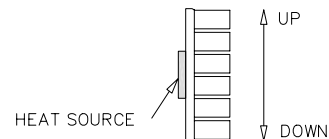
MODEL	HEIGHT [h]	WEIGHT (grams)
LPDH60S-15B	15	50.4
LPDH60S-20B	20	55.9
LPDH60S-25B	25	61.4

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

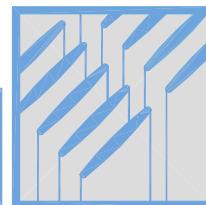
- BASED ON ALPHA'S STANDARD TEST PROCEDURE. REFER TO TECHNICAL INFORMATION.

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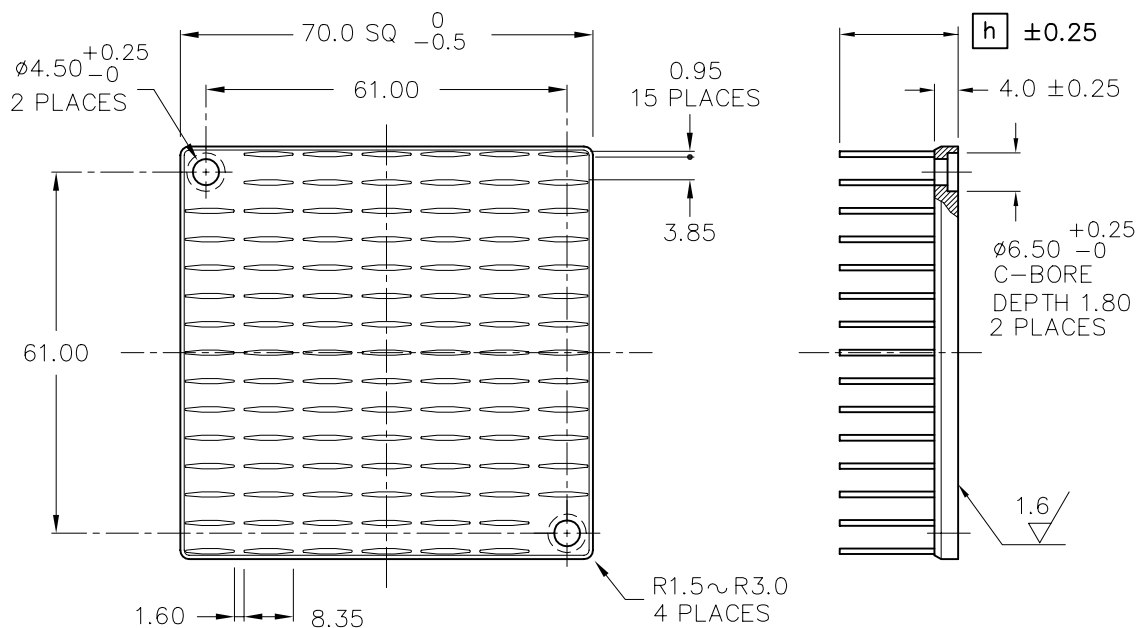
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ALPHALow Pressure Drop Heat Sink
with attachment holes**LPDH70S**

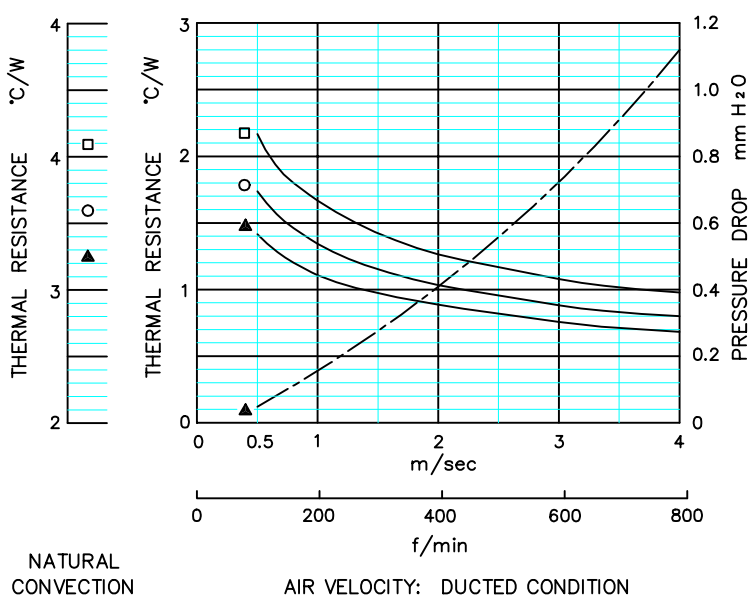
DIM



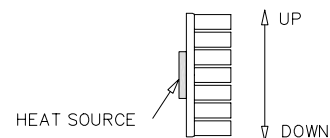
MODEL	HEIGHT [h]	WEIGHT (grams)
LPDH70S-15B	15	70.7
LPDH70S-20B	20	78.6
LPDH70S-25B	25	86.6

MATERIAL : A 6063
 FINISH : BLACK ANODIZE
 DIMENSIONS : mm

DATA



- LPDH70S-15B
- LPDH70S-20B
- ▲ LPDH70S-25B
- 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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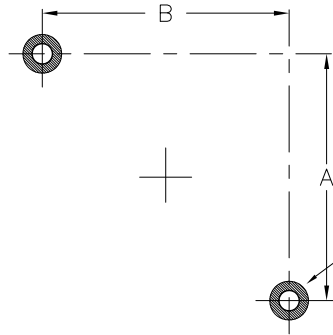
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REF



● BOARD KEEPOUT PATTERNS

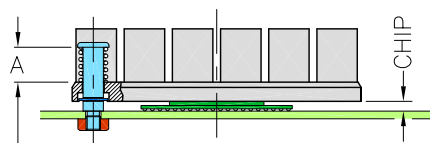


LPDH60S AND UBH60S	51.0	51.0
LPDH70S AND UBH70S	61.0	61.0
MODEL	A	B

ø8.0 KEEP-OUT AREA
NO COMPONENT PLACEMENT

● INSTALLATION

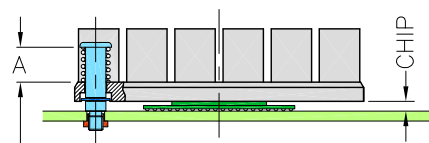
USE HEX NUTS M3x0.5



A = SPRING LOAD HEIGHT
= 9.2 - CHIP HEIGHT

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

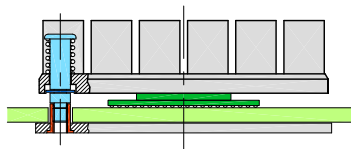
USE *MAC8* TH-1.6-XX-M3



A = SPRING LOAD HEIGHT
= 9.2 - CHIP HEIGHT

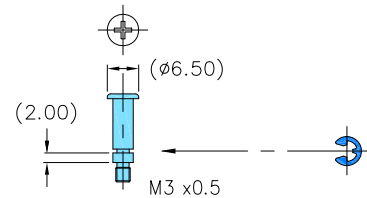
REQUIRES ø3.70 THRU HOLES IN BOARD.
MAC8 THREAD INSERT NEED THE SOLDERING.
RECOMMENDED P.C.B THICKNESS
MINIMUM 1.6mm ~ MAXIMUM 3.7mm
MINIMUM CHIP HEIGHT 1.5mm.

USE CUSTOM BACKING-PLATE

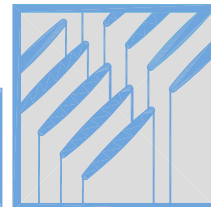


CUSTOM DESIGN FOR ANY PCB THICKNESS.

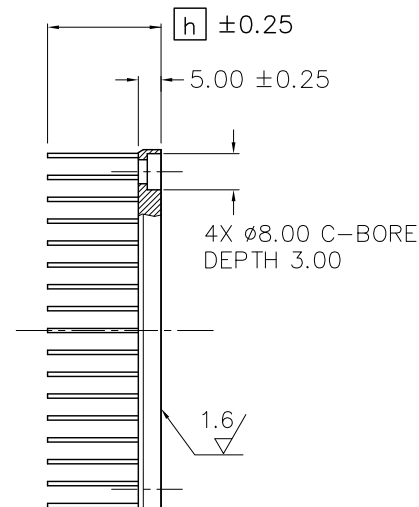
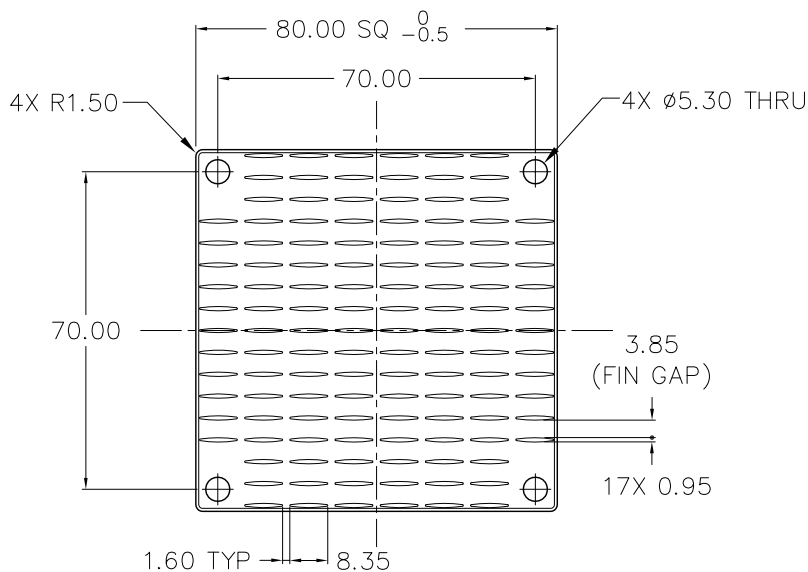
SHOULDER-SCREW/RETAINING RING E-2.5



REFER TO THE DRAWING FOR DETAIL SPECIFICATION.

ALPHALow Pressure Drop Heat Sink
with attachment holes**LPD80S**

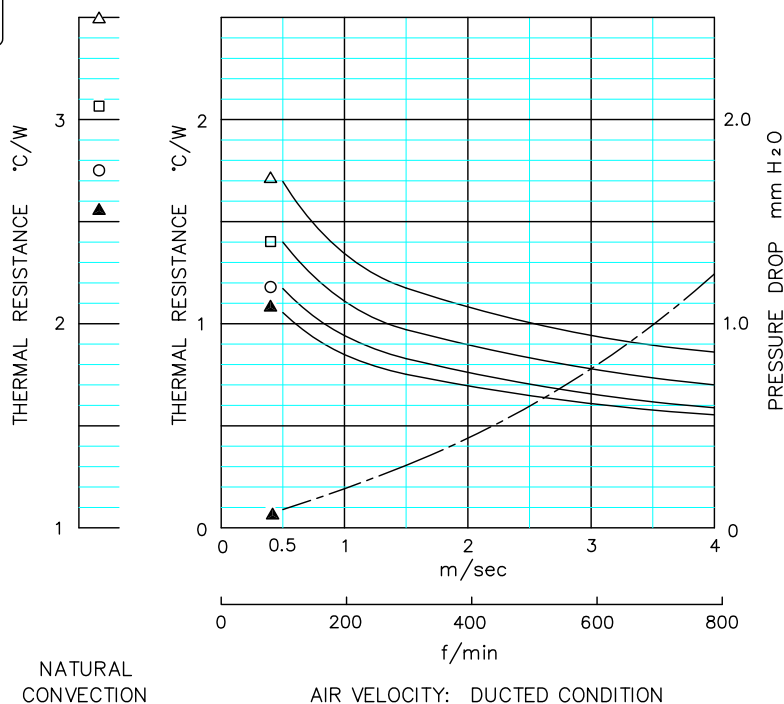
DIM



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

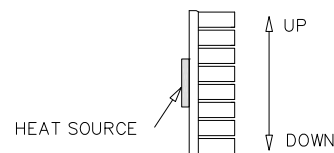
MATERIAL : A 6063
 FINISH : BLACK ANODIZE
 DIMENSIONS : mm

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

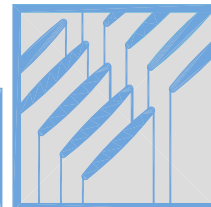
- BASED ON ALPHA'S STANDARD TEST
 PROCEDURE.
 REFER TO TECHNICAL INFORMATION.

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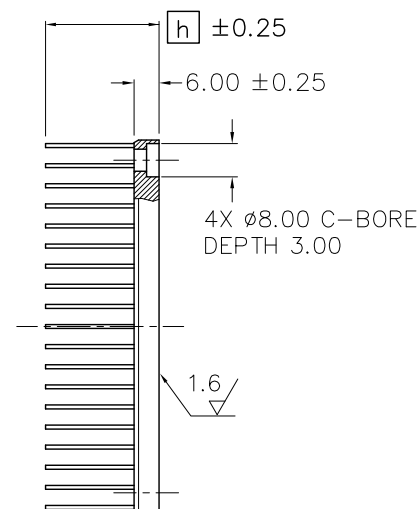
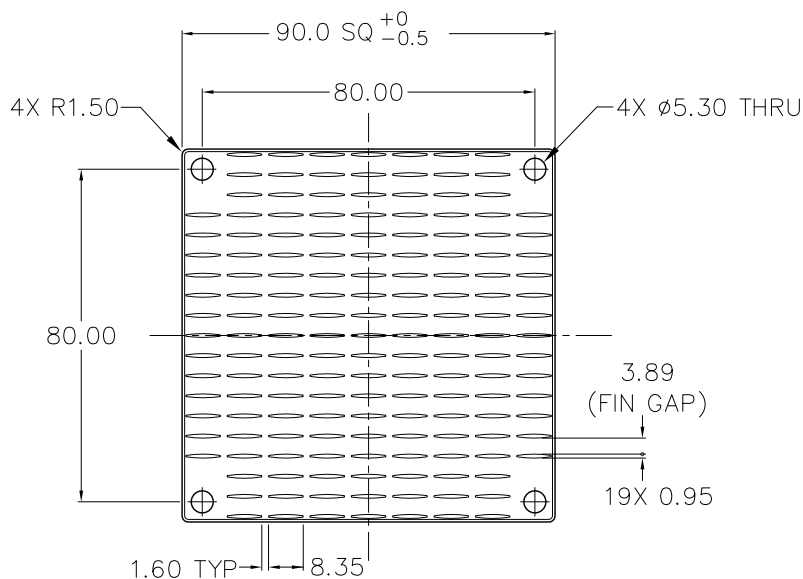
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ALPHALow Pressure Drop Heat Sink
with attachment holes**LPD90S**

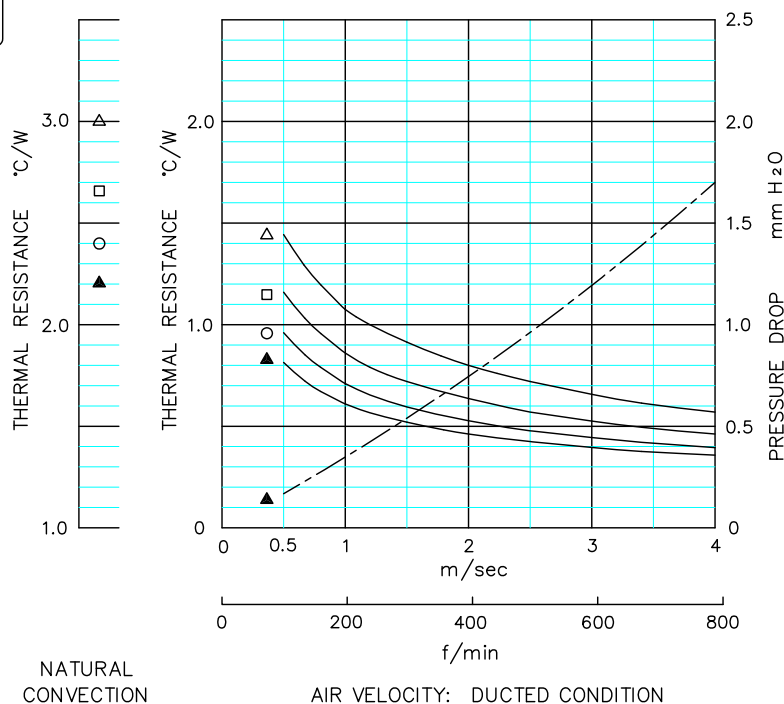
DIM



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

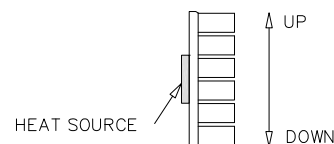
DATA



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

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

● NATURAL CONVECTION
 DUMMY HEATER SIZE: 25.4 SQ
 DISSIPATED POWER: 18.6(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

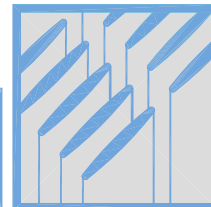
■ BASED ON ALPHA'S STANDARD TEST PROCEDURE.
 REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

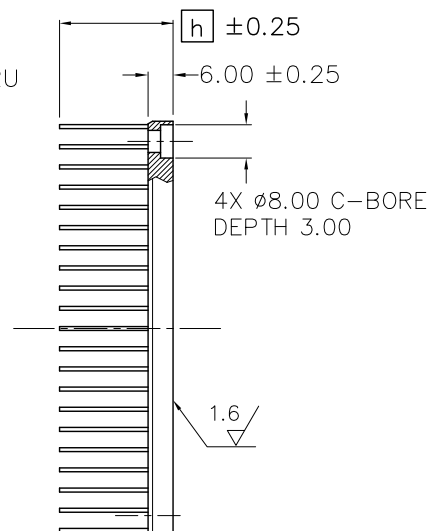
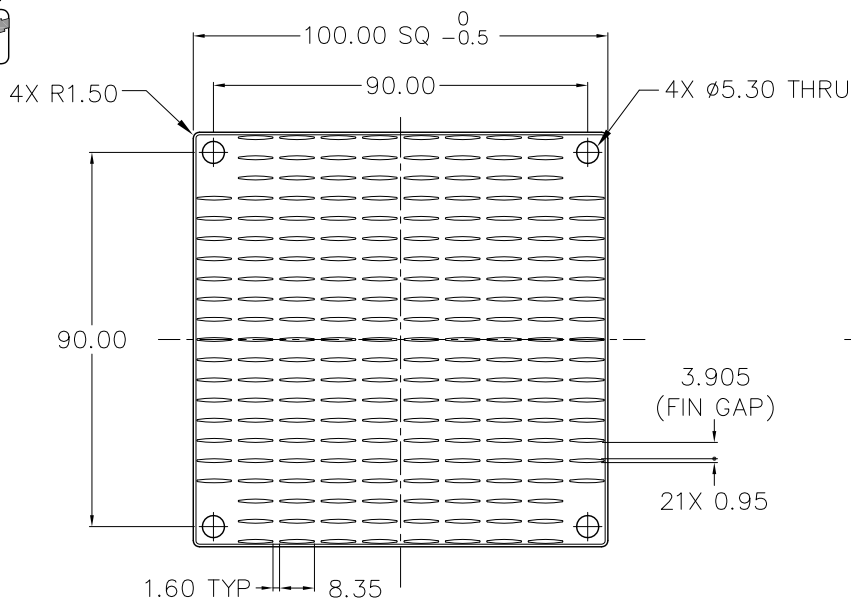
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ALPHALow Pressure Drop Heat Sink
with attachment holes**LPD100S**

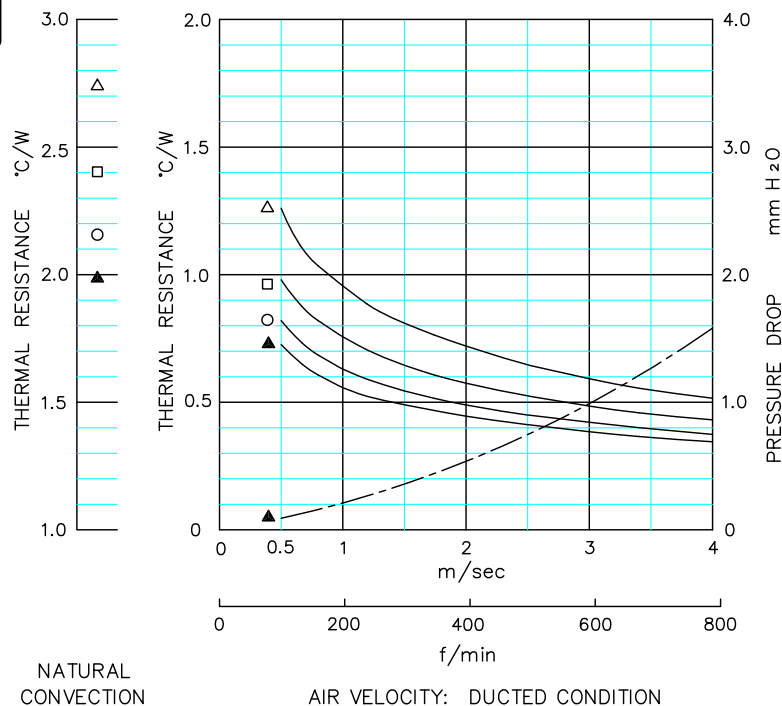
DIM



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

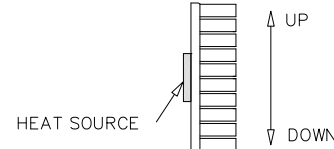
DATA



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

● DUCTED CONDITION
 DUMMY HEATER SIZE: 25.4 SQ
 THERMAL RESISTANCE _____
 PRESURE 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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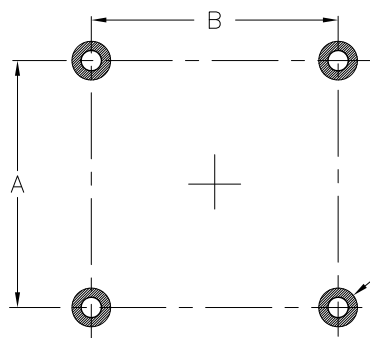
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REF



● BOARD KEEPOUT PATTERNS

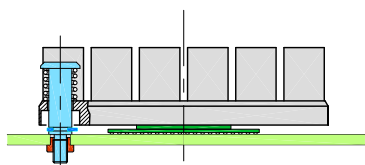


LPD80S AND UB80S	70.0	70.0
LPD90S AND UB90S	80.0	80.0
LPD100S AND UB100S	90.0	90.0
MODEL	A	B

ø8.0 KEEP-OUT AREA
NO COMPONENT PLACEMENT

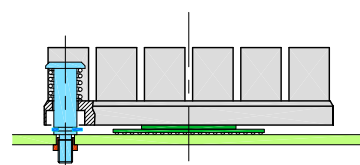
● INSTALLATION

USE PEM SMTSO-M3-**



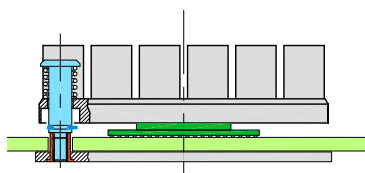
REQUIRES ø4.22 THRU HOLES IN BOARD.
PEM NUTS NEED THE SOLDERING.

USE MAC8 TH-1.6-**-M3



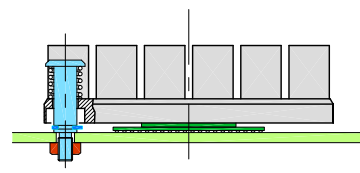
REQUIRES ø3.70 THRU HOLES IN BOARD.
MAC8 THREAD INSERT NEED THE SOLDERING.
RECOMMENDED P.C.B THICKNESS
MIN 1.6mm ~ MAX 3.7mm

USE ALPHA STANDARD BACKING PLATE



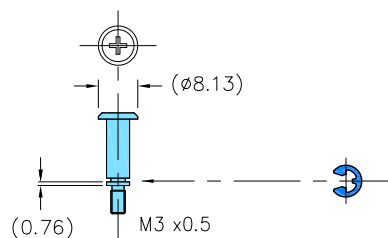
REQUIRES ø4.80 THRU HOLES IN BOARD.

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.