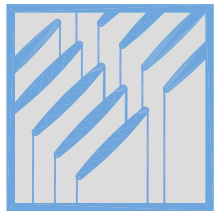


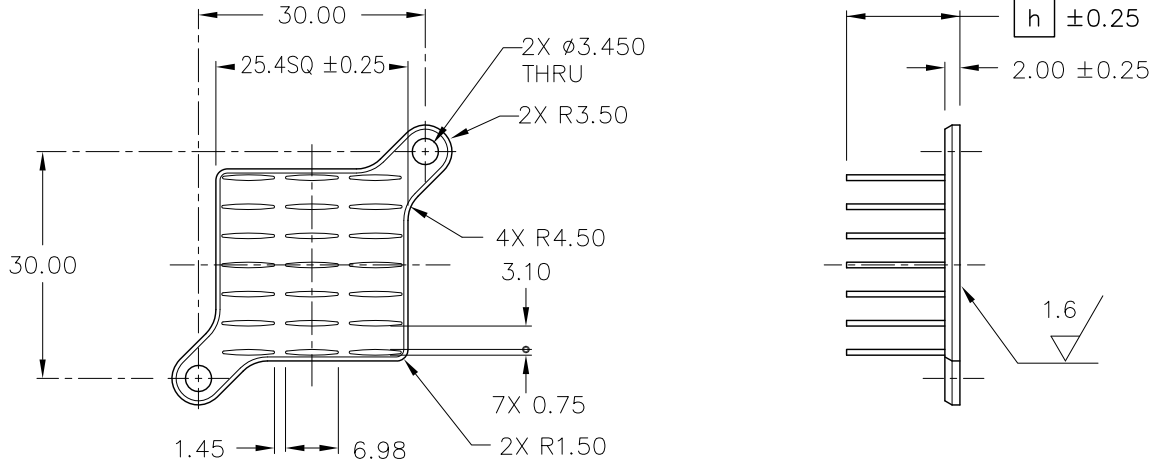
LPDR Series  
LPDL Series

Low Pressure Drop Heat Sink  
with Mounting Tabs

**ALPHA**



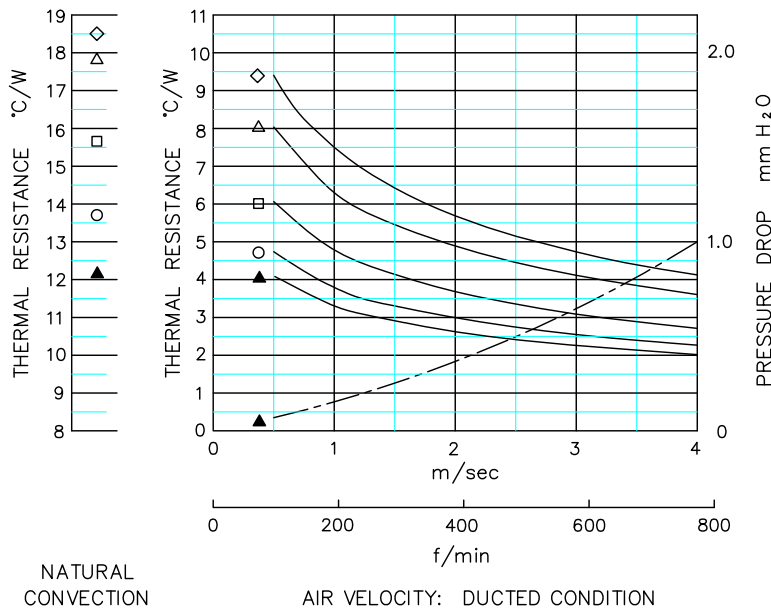
### DIM



| MODEL      | HEIGHT [h] | WEIGHT (grams) |
|------------|------------|----------------|
| LPDR25-8B  | 8          | 5.4            |
| LPDR25-10B | 10         | 5.8            |
| LPDR25-15B | 15         | 7.0            |
| LPDR25-20B | 20         | 8.2            |
| LPDR25-25B | 25         | 9.4            |

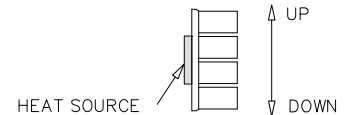
MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

### DATA



- ◇ LPDR25-8B      △ LPDR25-10B
- LPDR25-15B    ○ LPDR25-20B
- ▲ LPDR25-25B

- DUCTED CONDITION  
 DUMMY HEATER SIZE: 12.7 SQ  
 THERMAL RESISTANCE \_\_\_\_\_  
 PRESSURE DROP - - - - -
- NATURAL CONVECTION  
 DUMMY HEATER SIZE: 12.7 SQ  
 DISSIPATED POWER: 3.15(W)



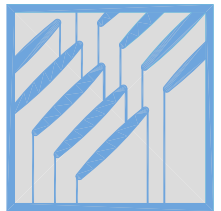
NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

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

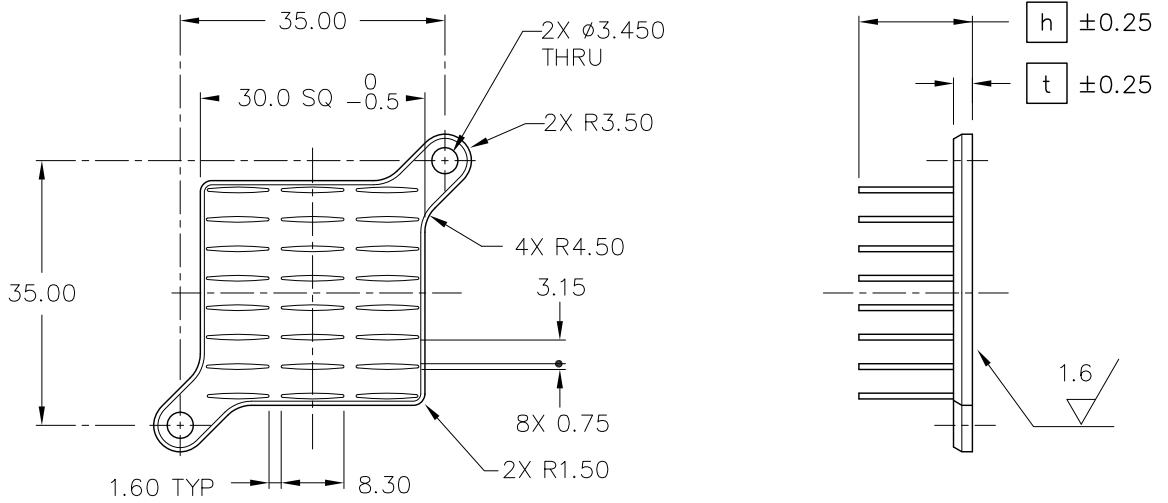
# ALPHA

Low Pressure Drop Heat Sink  
with Mounting Tabs

# LPDR30



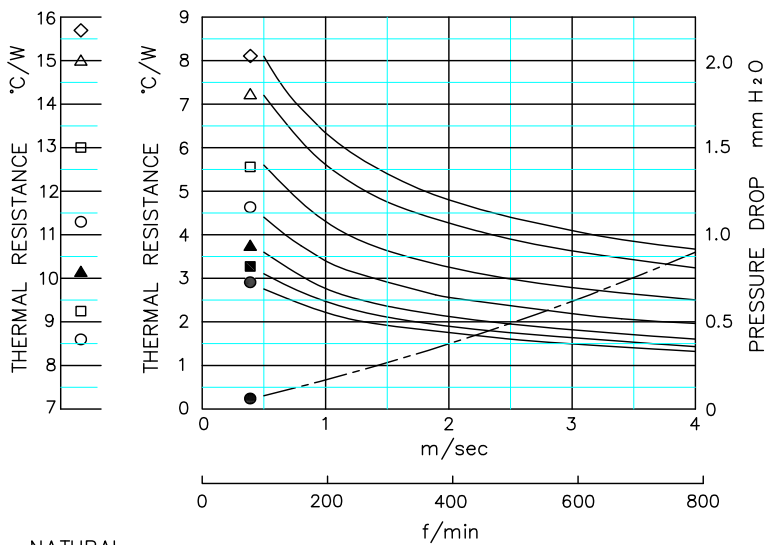
DIM



| MODEL       | HEIGHT [h] | THICKNESS [t] | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDR30-8B   | 8          | 2.50          | 7.1            |
| LPDR30-10B  | 10         |               | 8.9            |
| LPDR30-15B  | 15         |               | 10.5           |
| LPDR30-20B  | 20         |               | 12.1           |
| LPDR30-25B  | 25         |               | 13.7           |
| LPDR30-30B  | 30         |               | 15.3           |
| LPDR30-35B  | 35         |               | 16.9           |
| LPDR30-[h]B | [h] < 10   | 2.00          | -              |
|             | 10 ≤ [h]   | 2.50          | -              |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA

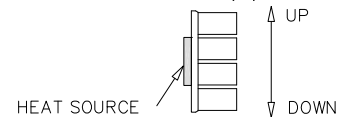


NATURAL CONVECTION

AIR VELOCITY: DUCTED CONDITION

- ◇ LPDR30-8B
- △ LPDR30-10B
- LPDR30-15B
- LPDR30-20B
- ▲ LPDR30-25B
- LPDR30-30B
- LPDR30-35B

- 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

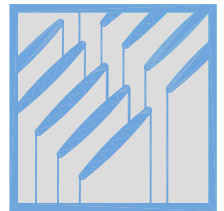
- BASED ON ALPHA'S STANDARD TEST PROCEDURE.  
REFER TO TECHNICAL INFORMATION.

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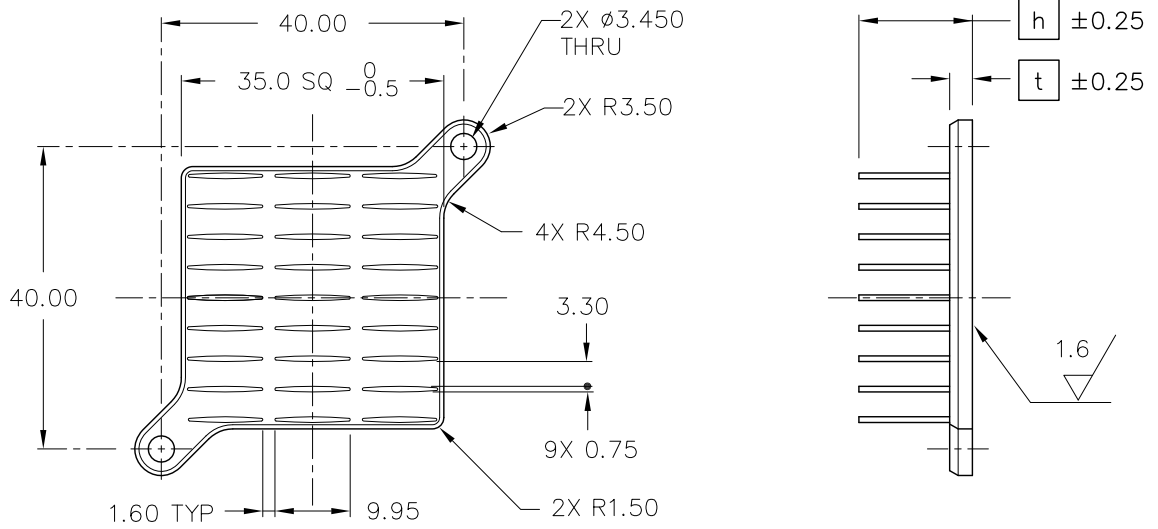
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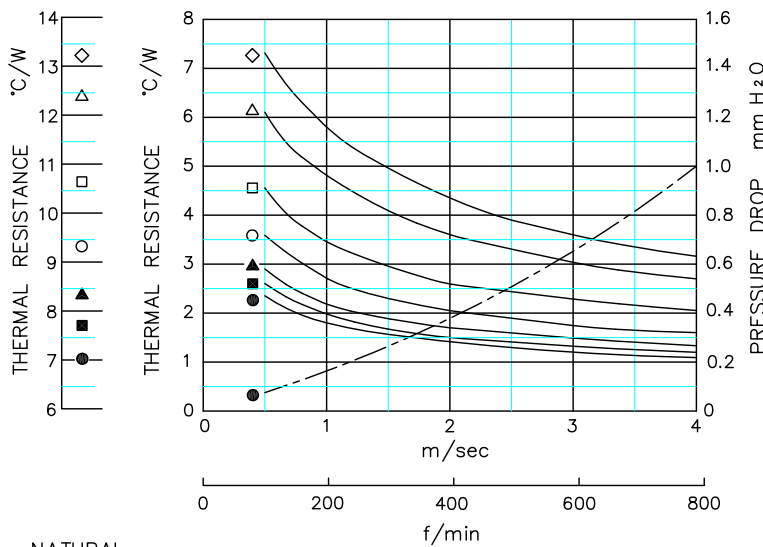
### DIM



| MODEL       | HEIGHT [h] | THICKNESS [t] | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDR35-8B   | 8          | 2.00          | 9.5            |
| LPDR35-10B  | 10         | 3.00          | 13.5           |
| LPDR35-15B  | 15         |               | 15.7           |
| LPDR35-20B  | 20         |               | 17.9           |
| LPDR35-25B  | 25         |               | 20.1           |
| LPDR35-30B  | 30         |               | 22.3           |
| LPDR35-35B  | 35         |               | 24.5           |
| LPDR35-[h]B | [h] < 10   | 2.00          | -              |
|             | 10 ≤ [h]   | 3.00          | -              |

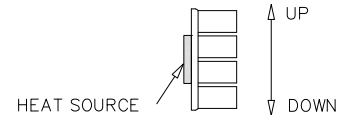
MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

### DATA



- ◇ LPDR35-8B
- △ LPDR35-10B
- LPDR35-15B
- LPDR35-20B
- ▲ LPDR35-25B
- LPDR35-30B
- LPDR35-35B

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



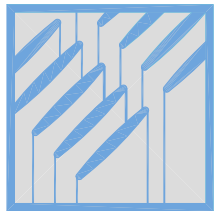
NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

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

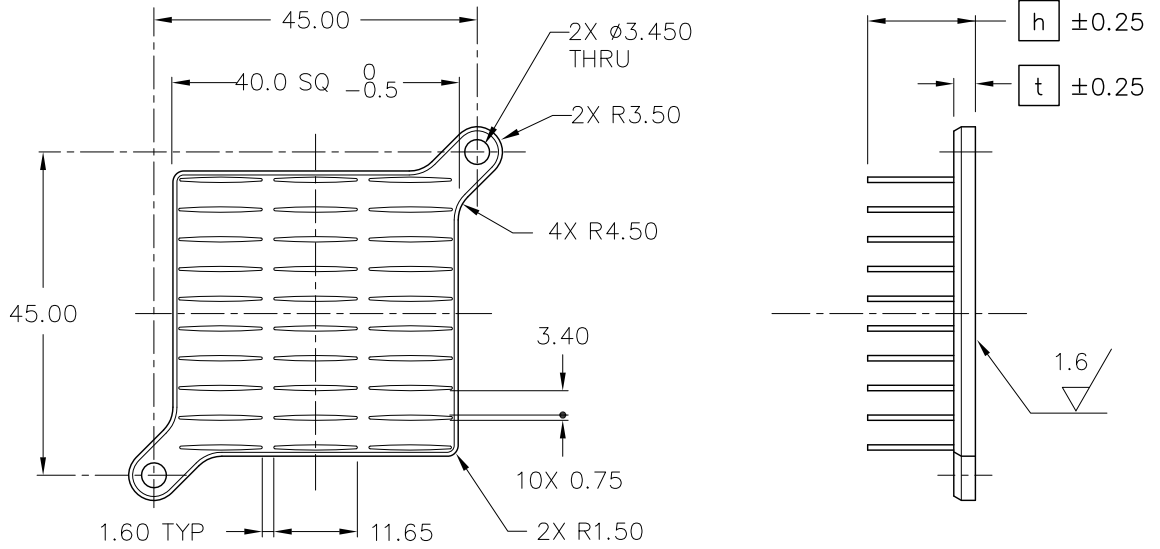
# ALPHA

## Low Pressure Drop Heat Sink with Mounting Tabs

# LPDR 40



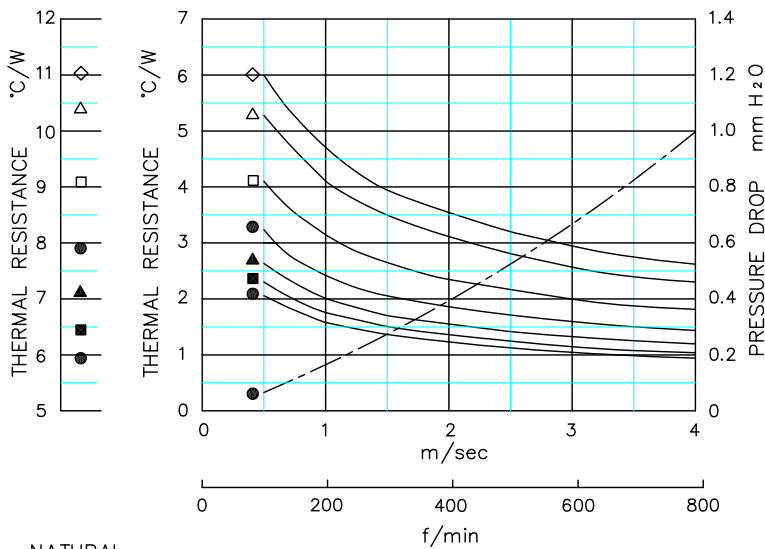
DIM



| MODEL       | HEIGHT [h] | THICKNESS [t] | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDR40-8B   | 8          | 2.50          | 14.4           |
| LPDR40-10B  | 10         | 3.00          | 17.2           |
| LPDR40-15B  | 15         |               | 20.0           |
| LPDR40-20B  | 20         |               | 22.8           |
| LPDR40-25B  | 25         |               | 25.6           |
| LPDR40-30B  | 30         |               | 28.4           |
| LPDR40-35B  | 35         |               | 31.8           |
| LPDR40-[h]B | [h] < 10   | 2.50          | -              |
|             | 10 ≤ [h]   | 3.00          | -              |

MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA

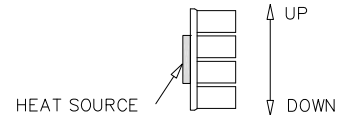


NATURAL CONVECTION

AIR VELOCITY: DUCTED CONDITION

- ◇ LPDR40-8B
- △ LPDR40-10B
- LPDR40-15B
- LPDR40-20B
- ▲ LPDR40-25B
- LPDR40-30B
- LPDR40-35B

- 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

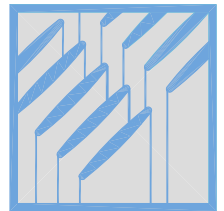
- BASED ON ALPHA'S STANDARD TEST PROCEDURE.
- REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

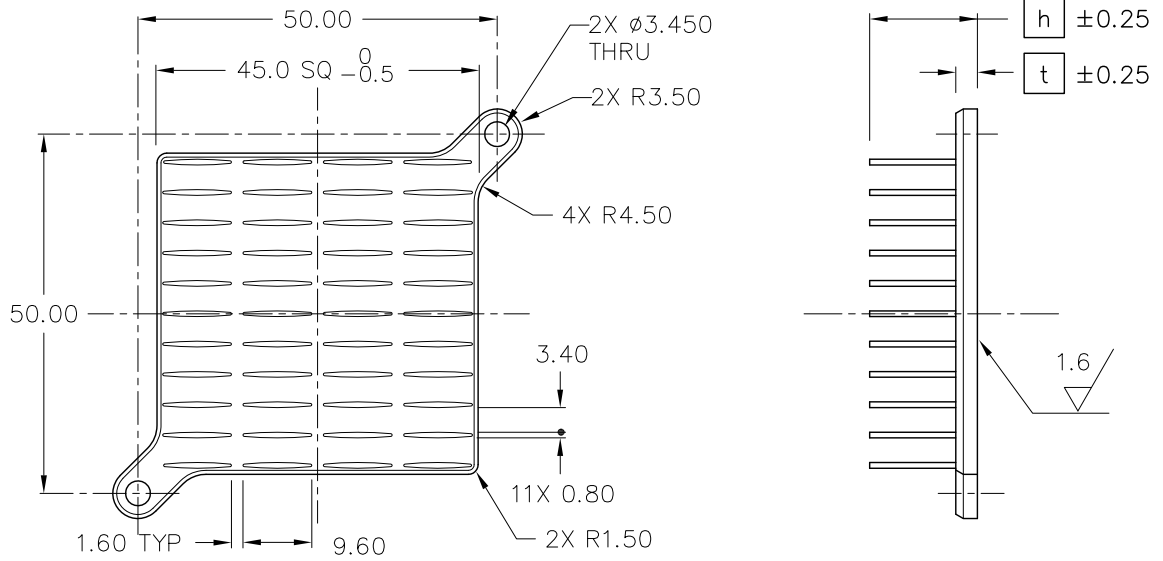
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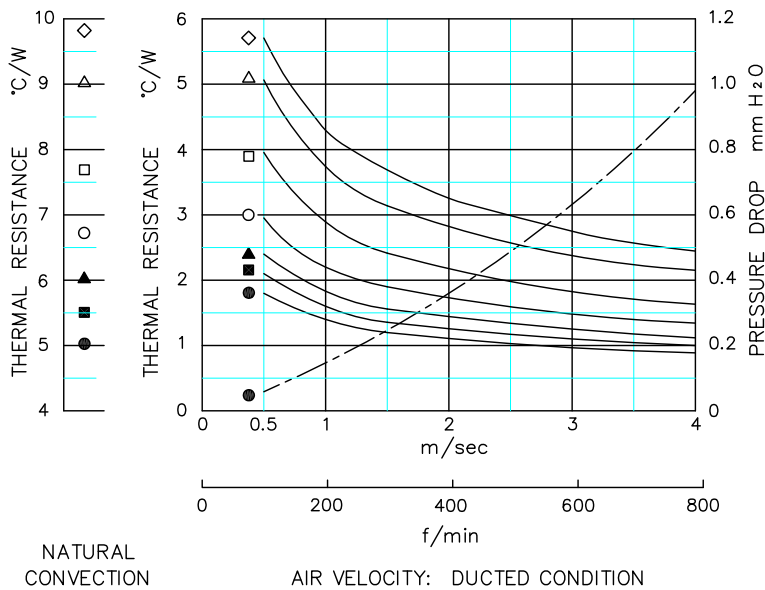
### DIM



| MODEL       | HEIGHT [h] | THICKNESS [t] | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDR45-8B   | 8          | 2.50          | 18.0           |
| LPDR45-10B  | 10         | 3.00          | 21.9           |
| LPDR45-15B  | 15         |               | 25.5           |
| LPDR45-20B  | 20         |               | 29.2           |
| LPDR45-25B  | 25         |               | 32.9           |
| LPDR45-30B  | 30         |               | 36.5           |
| LPDR45-35B  | 35         |               | 40.2           |
| LPDR45-[h]B | [h] < 10   | 2.50          | -              |
|             | 10 ≤ [h]   | 3.00          | -              |

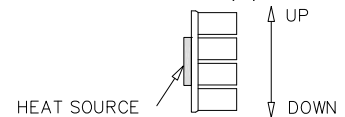
MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

### DATA



- ◇ LPDR45-8B      △ LPDR45-10B
- LPDR45-15B    ○ LPDR45-20B
- ▲ LPDR45-25B    ■ LPDR45-30B
- LPDR45-35B

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



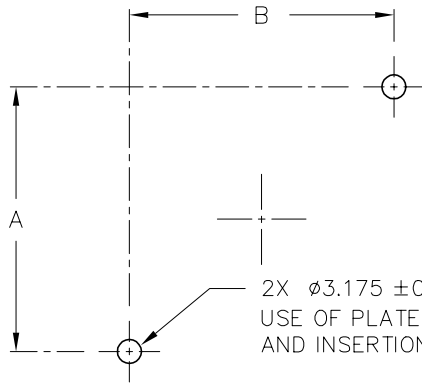
NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

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

REF

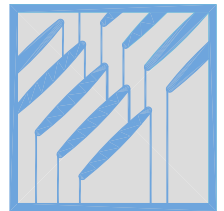


## PCB HOLE LAYOUT

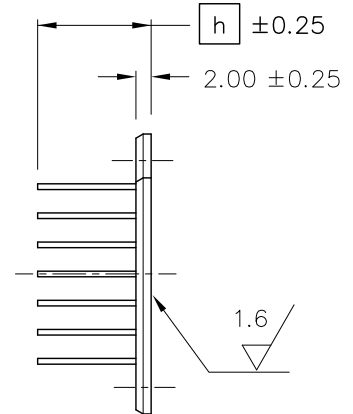
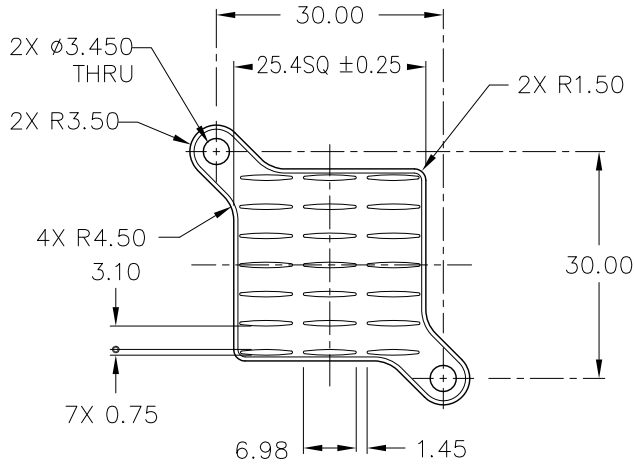


|                        |      |      |
|------------------------|------|------|
| LPDR25, UBR25 AND NR25 | 30.0 | 30.0 |
| LPDR30, UBR30 AND NR30 | 35.0 | 35.0 |
| LPDR35, UBR35 AND NR35 | 40.0 | 40.0 |
| LPDR40, UBR40 AND NR40 | 45.0 | 45.0 |
| LPDR45, UBR45 AND NR45 | 50.0 | 50.0 |
| MODEL                  | A    | B    |

PUSH-IN-PIN CATALOG: <http://www.micforg.co.jp/dxf/PIP-3175.pdf>



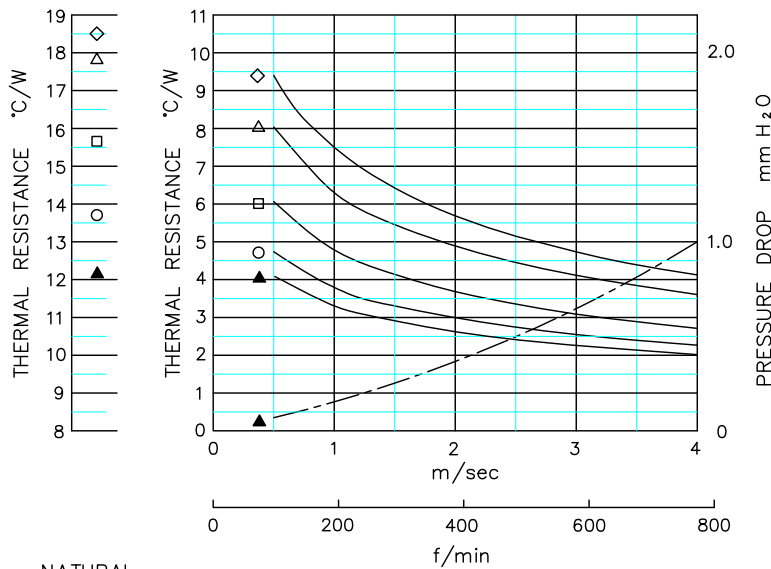
DIM



| MODEL      | HEIGHT $h$ | WEIGHT (grams) |
|------------|------------|----------------|
| LPDL25-8B  | 8          | 5.4            |
| LPDL25-10B | 10         | 5.8            |
| LPDL25-15B | 15         | 7.0            |
| LPDL25-20B | 20         | 8.2            |
| LPDL25-25B | 25         | 9.4            |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA

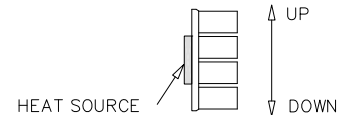


NATURAL CONVECTION

AIR VELOCITY: DUCTED CONDITION

- $\diamond$  LPDL25-8B       $\triangle$  LPDL25-10B
- $\square$  LPDL25-15B     $\circ$  LPDL25-20B
- $\blacktriangle$  LPDL25-25B

- DUCTED CONDITION  
DUMMY HEATER SIZE: 12.7 SQ  
THERMAL RESISTANCE \_\_\_\_\_  
PRESSURE DROP - - - - -
- NATURAL CONVECTION  
DUMMY HEATER SIZE: 12.7 SQ  
DISSIPATED POWER: 3.15(W)



NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

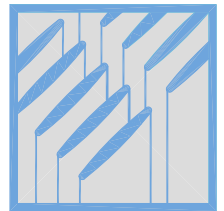
- BASED ON ALPHA'S STANDARD TEST PROCEDURE. REFER TO TECHNICAL INFORMATION.



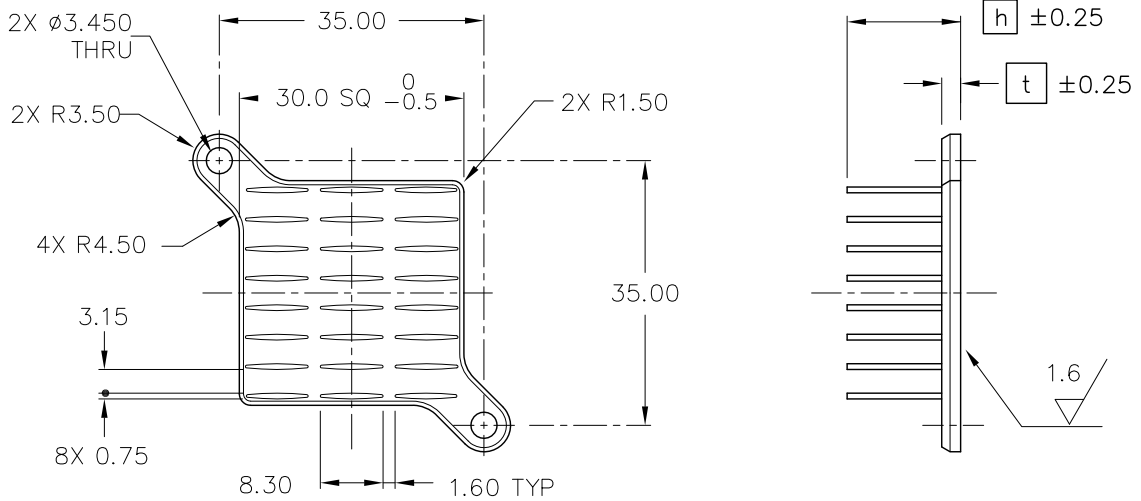
# ALPHA

Low Pressure Drop Heat Sink  
with Mounting Tabs

# LPDL30



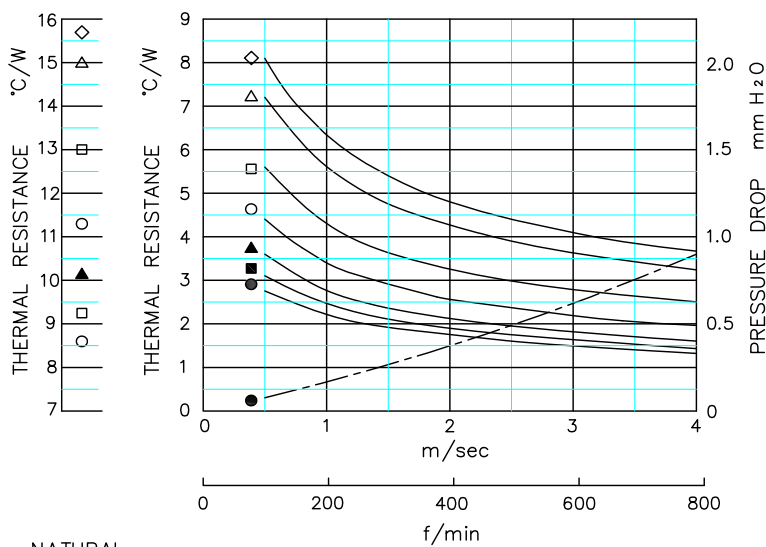
DIM



| MODEL       | HEIGHT [h] | THICKNESS [t] | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDL30-8B   | 8          | 2.00          | 7.1            |
| LPDL30-10B  | 10         | 2.50          | 8.9            |
| LPDL30-15B  | 15         |               | 10.5           |
| LPDL30-20B  | 20         |               | 12.1           |
| LPDL30-25B  | 25         |               | 13.7           |
| LPDL30-30B  | 30         |               | 15.3           |
| LPDL30-35B  | 35         |               | 16.9           |
| LPDL30-[h]B | [h] < 10   | 2.00          | -              |
|             | 10 ≤ [h]   | 2.50          | -              |

MATERIAL : A 6063  
FINISH : BLACK ANODIZE  
DIMENSIONS : mm

DATA

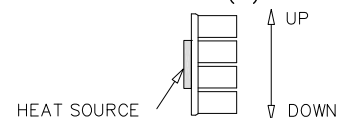


NATURAL CONVECTION

AIR VELOCITY: DUCTED CONDITION

- ◇ LPDL30-8B
- △ LPDL30-10B
- LPDL30-15B
- LPDL30-20B
- ▲ LPDL30-25B
- LPDL30-30B
- LPDL30-35B

- 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.

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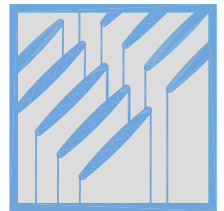
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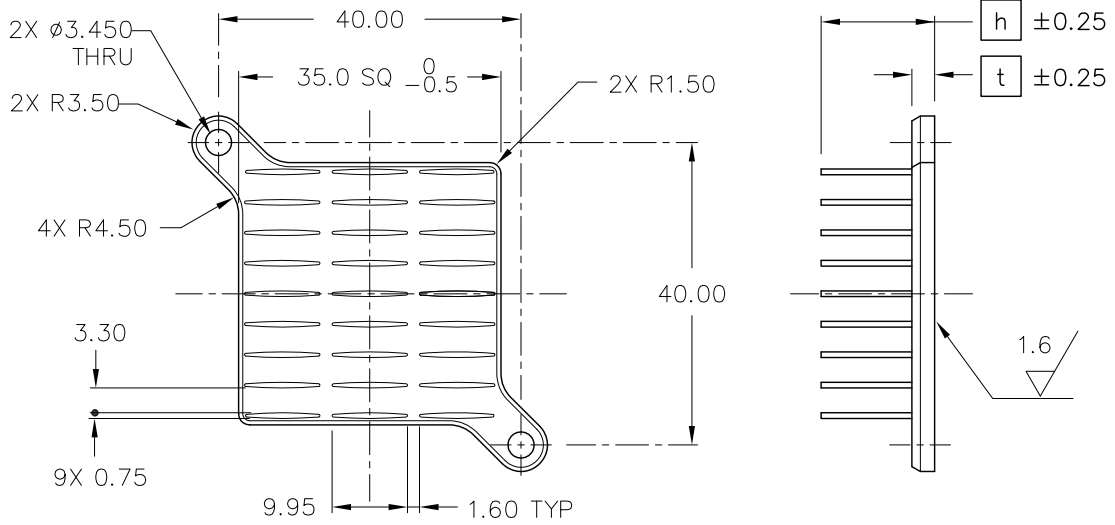
# ALPHA

## Low Pressure Drop Heat Sink with Mounting Tabs

# LPDL35



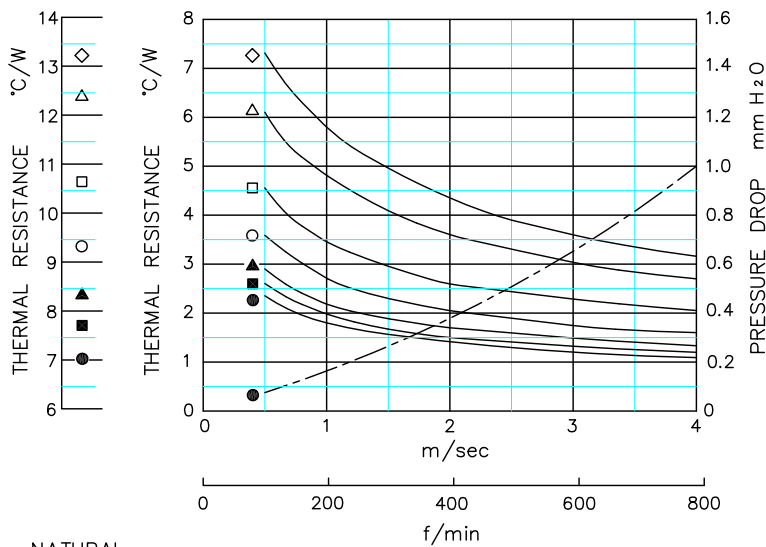
DIM



| MODEL         | HEIGHT $h$  | THICKNESS $t$ | WEIGHT (grams) |
|---------------|-------------|---------------|----------------|
| LPDL35-8B     | 8           | 2.00          | 9.5            |
| LPDL35-10B    | 10          | 3.00          | 13.5           |
| LPDL35-15B    | 15          |               | 15.7           |
| LPDL35-20B    | 20          |               | 17.9           |
| LPDL35-25B    | 25          |               | 20.1           |
| LPDL35-30B    | 30          |               | 22.3           |
| LPDL35-35B    | 35          |               | 24.5           |
| LPDL35- $h$ B | $h < 10$    | 2.00          | -              |
|               | $10 \leq h$ | 3.00          | -              |

MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA

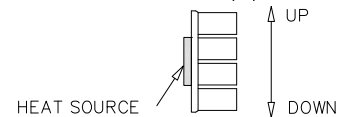


NATURAL CONVECTION

AIR VELOCITY: DUCTED CONDITION

- ◇ LPDL35-8B
- △ LPDL35-10B
- LPDL35-15B
- LPDL35-20B
- ▲ LPDL35-25B
- LPDL35-30B
- LPDL35-35B

- 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.

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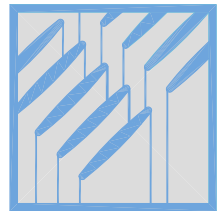
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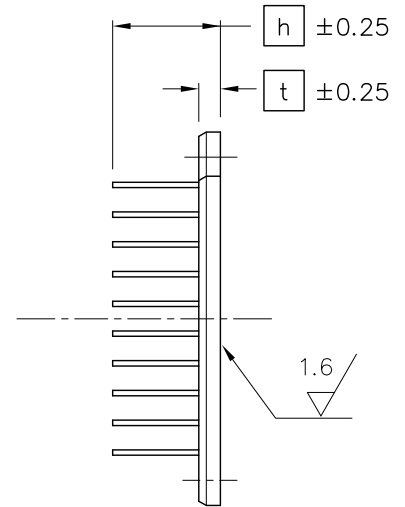
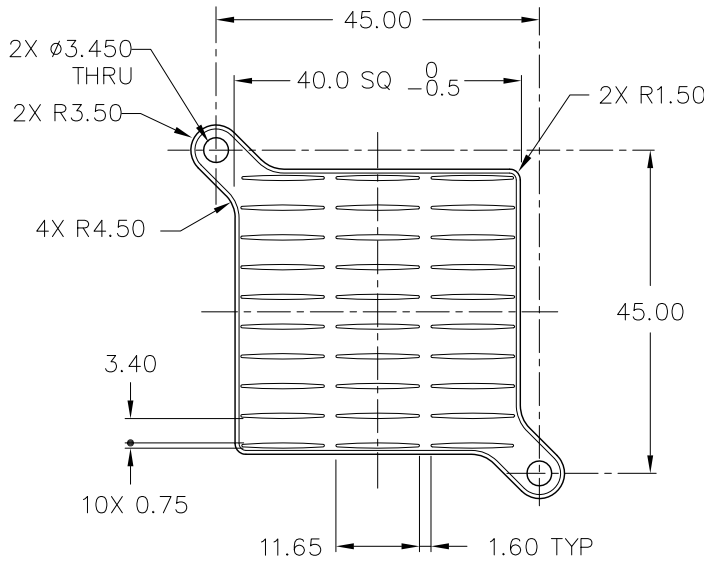
# ALPHA

## Low Pressure Drop Heat Sink with Mounting Tabs

# LPDL 40



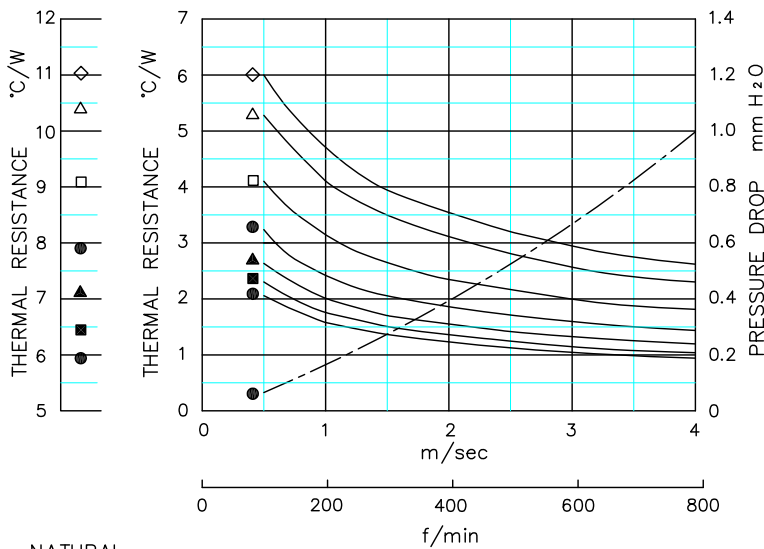
DIM



| MODEL       | HEIGHT [h] | THICKNESS [t] | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDL40-8B   | 8          | 2.50          | 14.4           |
| LPDL40-10B  | 10         | 3.00          | 17.2           |
| LPDL40-15B  | 15         |               | 20.0           |
| LPDL40-20B  | 20         |               | 22.8           |
| LPDL40-25B  | 25         |               | 25.6           |
| LPDL40-30B  | 30         |               | 28.4           |
| LPDL40-35B  | 35         |               | 31.8           |
| LPDL40-[h]B | [h] < 10   | 2.50          | -              |
|             | 10 ≤ [h]   | 3.00          | -              |

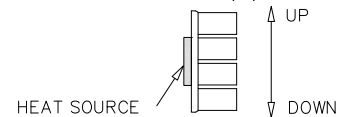
MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm

DATA



- ◇ LPDL40-8B
- △ LPDL40-10B
- LPDL40-15B
- LPDL40-20B
- ▲ LPDL40-25B
- LPDL40-30B
- LPDL40-35B

- 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

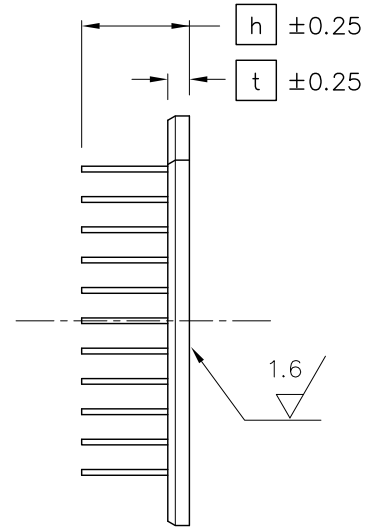
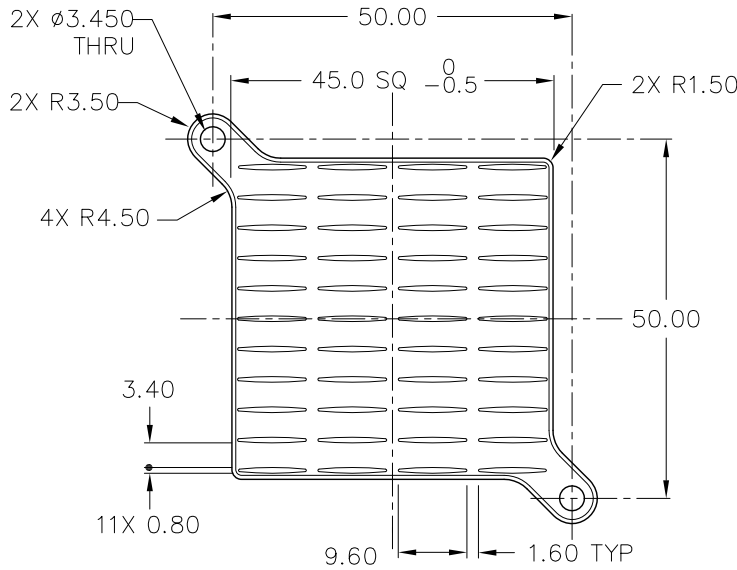
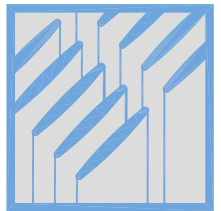
- BASED ON ALPHA'S STANDARD TEST PROCEDURE.
- REFER TO TECHNICAL INFORMATION.

Alpha Company Ltd.

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

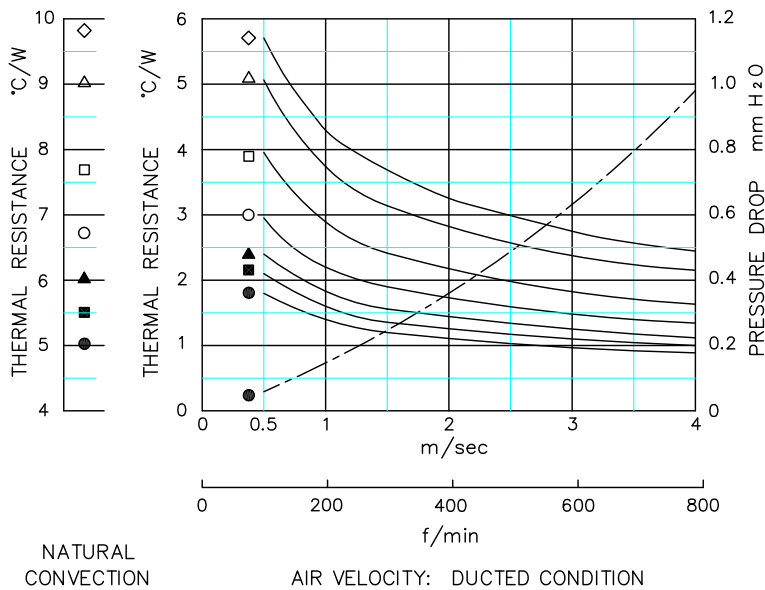
Alpha Novatech, Inc. - a subsidiary of Alpha Company.

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



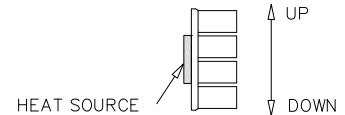
| MODEL       | HEIGHT [h] | THICKNESS [t] | WEIGHT (grams) |
|-------------|------------|---------------|----------------|
| LPDL45-8B   | 8          | 2.50          | 18.0           |
| LPDL45-10B  | 10         | 3.00          | 21.9           |
| LPDL45-15B  | 15         |               | 25.5           |
| LPDL45-20B  | 20         |               | 29.2           |
| LPDL45-25B  | 25         |               | 32.9           |
| LPDL45-30B  | 30         |               | 36.5           |
| LPDL45-35B  | 35         |               | 40.2           |
| LPDL45-[h]B | [h] < 10   | 2.50          | -              |
|             | 10 ≤ [h]   | 3.00          | -              |

MATERIAL : A 6063  
 FINISH : BLACK ANODIZE  
 DIMENSIONS : mm



- ◇ LPDL45-8B      △ LPDL45-10B
- LPDL45-15B    ○ LPDL45-20B
- ▲ LPDL45-25B    ● LPDL45-30B
- LPDL45-35B

- 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)



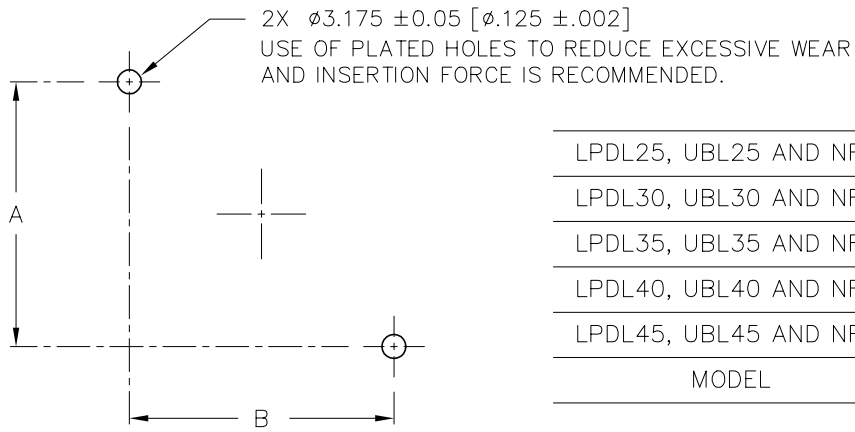
NOTE ORIENTATION OF HEAT SINK USED FOR NATURAL CONVECTION TESTING

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

REF



## PCB HOLE LAYOUT



|                        |      |      |
|------------------------|------|------|
| LPDL25, UBL25 AND NR25 | 30.0 | 30.0 |
| LPDL30, UBL30 AND NR30 | 35.0 | 35.0 |
| LPDL35, UBL35 AND NR35 | 40.0 | 40.0 |
| LPDL40, UBL40 AND NR40 | 45.0 | 45.0 |
| LPDL45, UBL45 AND NR45 | 50.0 | 50.0 |
| MODEL                  | A    | B    |

PUSH-IN-PIN CATALOG: <http://www.micforg.co.jp/dxf/PIP-3175.pdf>