



達鉅電子股份有限公司  
REGO ELECTRONICS INC.

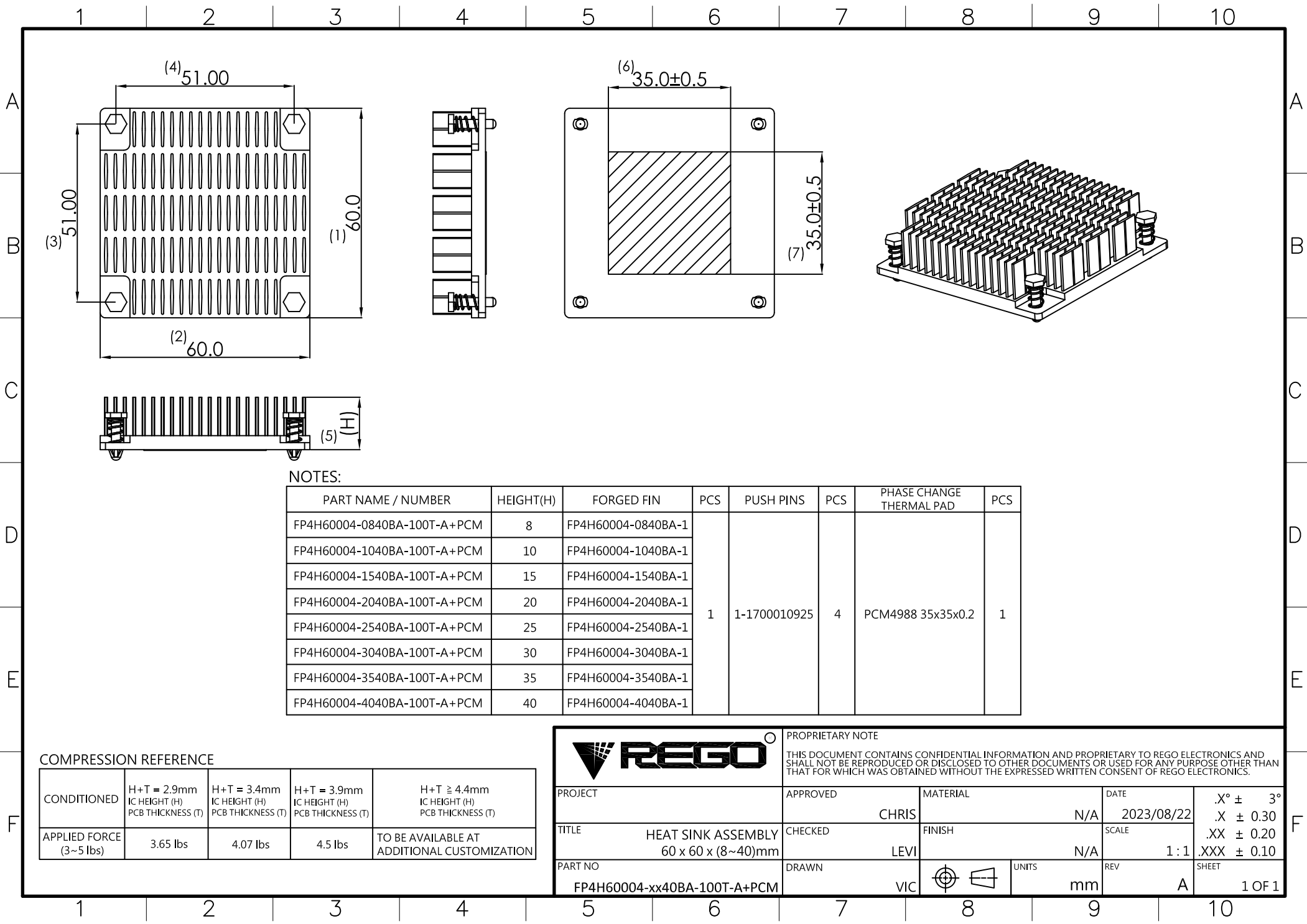
8F., No. 431, Baozhang Rd., Xizhi Dist., New Taipei City 221036, Taiwan  
TEL: 886-2-2643-6558 FAX: 886-2-2643-6118 www.regothermal.com

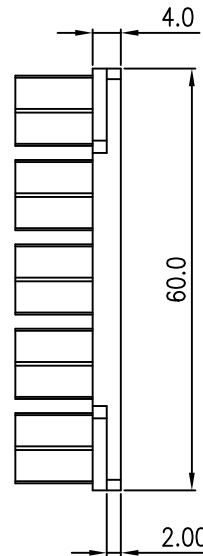
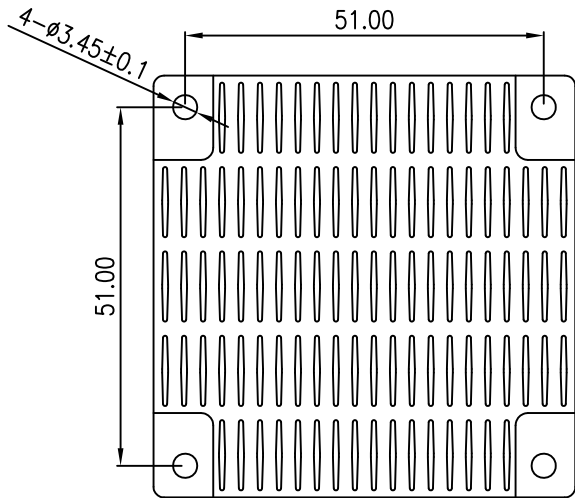
## APPROVAL SHEET

|              |                                          |
|--------------|------------------------------------------|
| BRAND        | REGO                                     |
| PART NUMBER  | FP4H60004-xx40BA-100T-A+PCM              |
| DESCRIPTION  | HEAT SINK ASSEMBLY<br>60 x 60 x (8~40)mm |
| CUSTOMER     |                                          |
| CUSTOMER P/N |                                          |

### AUTHORIZED SIGNATURES

|      |  |  |  |
|------|--|--|--|
| NAME |  |  |  |
| DATE |  |  |  |





#### NOTES:

| PART NAME / NUMBER | HEIGHT(H) |
|--------------------|-----------|
| FP4H60004-0640BA-1 | 6         |
| FP4H60004-0840BA-1 | 8         |
| FP4H60004-1040BA-1 | 10        |
| FP4H60004-1540BA-1 | 15        |
| FP4H60004-2040BA-1 | 20        |
| FP4H60004-2540BA-1 | 25        |
| FP4H60004-3040BA-1 | 30        |
| FP4H60004-3540BA-1 | 35        |
| FP4H60004-4040BA-1 | 40        |



#### PROPRIETARY NOTE

THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND PROPRIETARY TO REGO ELECTRONICS AND SHALL NOT BE REPRODUCED OR DISCLOSED TO OTHER DOCUMENTS OR USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH WAS OBTAINED WITHOUT THE EXPRESSED WRITTEN CONSENT OF REGO ELECTRONICS.

|                    |          |                      |            |             |
|--------------------|----------|----------------------|------------|-------------|
| PROJECT            | APPROVED | MATERIAL             | DATE       | .X° ± 3°    |
|                    | CHRIS    | AL1070               | 2023/08/22 | .X ± 0.30   |
| TITLE              | CHECKED  | FINISH               | SCALE      | .XX ± 0.20  |
| FORGED FIN         | LEVI     | BLACK MATTE ANODIZED | 1:1        | .XXX ± 0.10 |
| 60 x 60 x (6~40)mm |          |                      |            |             |
| PART NO            | DRAWN    | UNITS                | REV        | SHEET       |
| FP4H60004-xx40BA-1 | VIC      | mm                   | A          | 1 OF 1      |

1 2 3 4 5 6 7 8 9 10

A

B

C

D

E

F

A

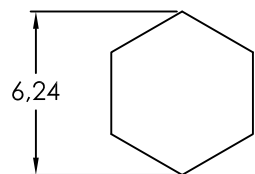
B

C

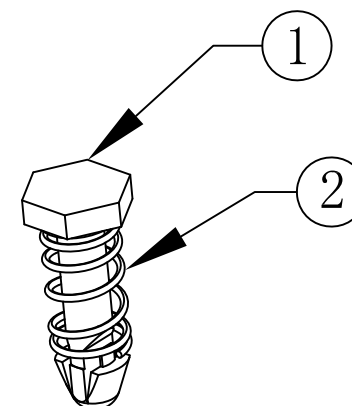
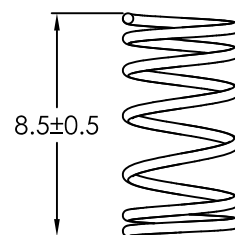
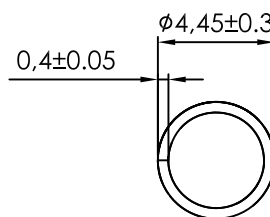
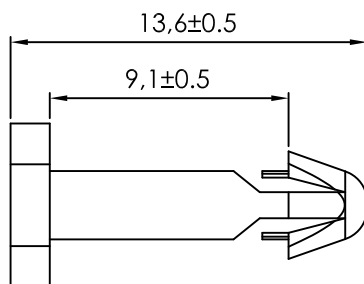
D

E

F



HOLE IN PCB  $\varnothing 3.1 \pm 0.05$



| ITEM | DESCRIPTION | MATERIAL   | FINISH |
|------|-------------|------------|--------|
| 1    | BODY        | NYLON 66   | BLACK  |
| 2    | SPRING      | PIANO WIRE | NICKEL |

| ITEM                  | NUMERICAL VALUE |
|-----------------------|-----------------|
| SPRING DIAMETER D=    | 4.05 mm         |
| WIRE DIAMETER d=      | 0.4 mm          |
| TOTAL COIL Q'TY Na=   | 6               |
| FREE LENGTH L0=       | 8.5 mm          |
| SPRING COEFFICIENT K= | 96.34 g/mm      |

|                                                                                      |  |                                                                                                                                                                                                                                                                                               |          |          |            |
|--------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|------------|
|  |  | PROPRIETARY NOTE<br>THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND PROPRIETARY TO REGO ELECTRONICS AND SHALL NOT BE REPRODUCED OR DISCLOSED TO OTHER DOCUMENTS OR USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH WAS OBTAINED WITHOUT THE EXPRESSED WRITTEN CONSENT OF REGO ELECTRONICS. |          |          |            |
|                                                                                      |  | PROJECT                                                                                                                                                                                                                                                                                       | APPROVED | MATERIAL | DATE       |
|                                                                                      |  |                                                                                                                                                                                                                                                                                               | CHRIS    | SEE NOTE | 2020/10/20 |
| TITLE                                                                                |  | CHECKED                                                                                                                                                                                                                                                                                       | LEVI     | FINISH   | SCALE      |
| PUSH PIN                                                                             |  |                                                                                                                                                                                                                                                                                               |          | SEE NOTE | 1 : 1      |
| PART NO                                                                              |  | DRAWN                                                                                                                                                                                                                                                                                         | VIC      | UNITS    | REV        |
| 1-1700010925                                                                         |  |                                                                                                                                                                                                                                                                                               |          | mm       | A          |
|                                                                                      |  |                                                                                                                                                                                                                                                                                               |          |          | SHEET      |
|                                                                                      |  |                                                                                                                                                                                                                                                                                               |          |          | 1 OF 1     |

1 2 3 4 5 6 7 8 9 10

## PCM4988

### High Thermal Conductivity Phase Change Material

Honeywell's PCM4988, a highly thermally conductive Phase Change Material (PCM) in pad format, was designed to minimize thermal resistance at interfaces. Based on a novel polymer PCM system, this material exhibits excellent wetting at interfaces during typical operating temperature range, resulting in very low surface contact resistance.

A proprietary filler material provides high thermal conductivity (2.0–5.0 W/m°C ) and a low thermal impedance ( $<0.20^{\circ}\text{C cm}^2/\text{W}$ ), suitable for high performance IC devices.

#### PCM4988 in Convenient Pad Format



\*Stencil printable material is available as PCM4988-SP

#### Honeywell TIMs Serve Multiple Applications



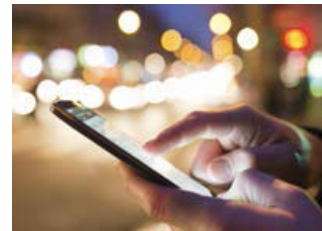
Automotive & Power



IT/Enterprise



Telecommunications



Consumer Electronics



## FEATURES & BENEFITS

- High performance filler and polymer technology
- Phase change at 45°C
- Highly conductive filler loading to optimize performance
- Superior handling and reworkability
- Superior reliable thermal performance
- Excellent thermal capability to fit different needs

# PCM4988 Technical Information

| Physical Properties                         | Unit                   | Test Method         | PCM4988              |
|---------------------------------------------|------------------------|---------------------|----------------------|
| Thermal Conductivity                        | W/m·K                  | ASTM D5470          | 2.0                  |
| Thermal Impedance @ no shim (Typical Value) | °C -cm <sup>2</sup> /W | ASTM D5470 Modified | 0.14                 |
| Specific Gravity                            |                        | ASTM D374           | 2.2                  |
| Viscosity (Typical Value)                   | Pa·s @2 1/s, 25°C      | RehometerHON        | NA                   |
| Volume Resistivity                          | Ω·cm                   | ASTM D257-700       | 8.2x10 <sup>14</sup> |
| Thickness Range                             | mm                     |                     | 0.20-1.00            |

## STORAGE CONDITION

Refer to product label.

## THERMAL IMPEDANCE POST RELIABILITY

(No shim @ 40psi)

End of Line 0.14 °C-cm<sup>2</sup>/W

Temperature Cycle "B" 0.10 °C-cm<sup>2</sup>/W

(-55°C to +125°C , 1000 cycles)

## Product Use

Clamping pressure and temperature are suggested to achieve a minimum bond line thickness of the thermal interface material, typically less than 1.5 mil (0.038mm) for best thermal performance.

## More Honeywell TIMs

PCM4988 is part of Honeywell's TIM Solutions family of phase change materials. Whatever the thermal challenge, we offer a TIM product that provides just the right characteristics for your application. Find out more about:

PTM7000 Series PTM6000 Series  
PTM5000 Series PCM45F Series  
Hybrid Series LTM Series By

visiting: [electronicmaterials.com](http://electronicmaterials.com)



RESPONSIBLE CARE®  
OUR COMMITMENT TO SUSTAINABILITY

## Honeywell Electronic Materials

USA: 1-509-252-2102

China: 400-840-2233

Germany: 49-5137-999-9199

Japan: 81-3-6730-7092

Korea: 82-2-3483-5076

Singapore: 65-6580-3593

Taiwan: 886-3-6580300 ext.312

[www.electronicmaterials.com](http://www.electronicmaterials.com)

Although all statements and information contained herein are believed to be accurate and reliable, they are presented without guarantee or warranty of any kind, express or implied. Information provided herein does not relieve the user from the responsibility of carrying out its own tests and experiments, and the user assumes all risks and liability for use of the information and results obtained. Statements or suggestions concerning the use of materials and processes are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that all toxicity data and safety measures are indicated herein or that other measures may not be required.

DS.0318Rev3  
©2018 Honeywell International Inc.

# Honeywell