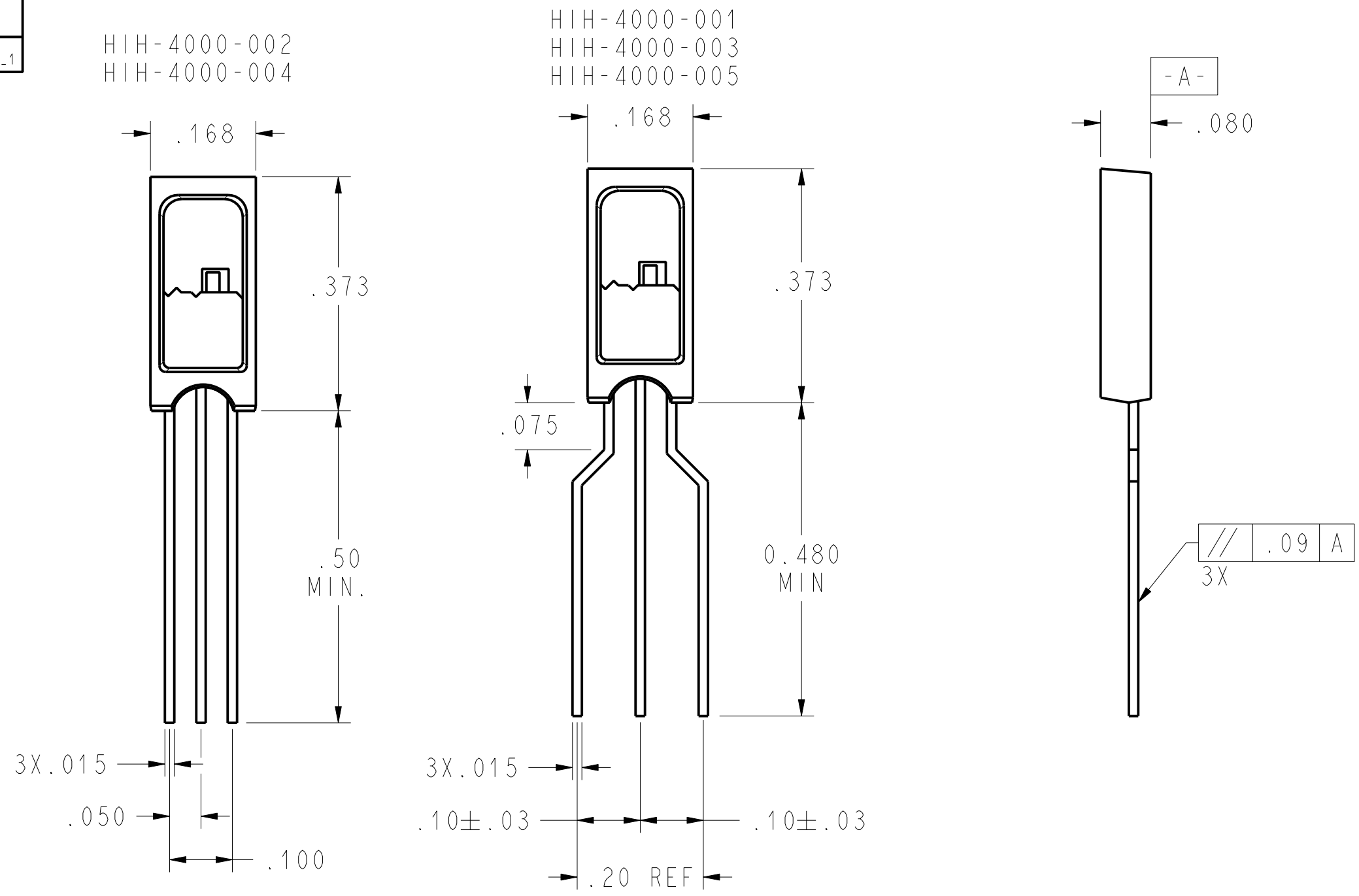


HONEYWELL
PART NUMBER
HIH4000_SERIES_CHART_1

| REV | DOCUMENT | CHANGED BY | CHECK |
|-----|----------|-------------|-------|
| A | 0001131 | NSD 29APR04 | AK |



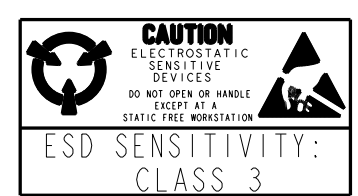
| PRODUCT DESCRIPTION | |
|---------------------|--|
| CATALOG LISTING | DESCRIPTION |
| HIH-4000-001 | INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.100 IN LEAD PITCH SIP |
| HIH-4000-002 | INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.050 IN LEAD PITCH SIP |
| HIH-4000-003 | INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.100 IN LEAD PITCH SIP WITH CALIBRATION AND DATA PRINTOUT |
| HIH-4000-004 | INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.050 IN LEAD PITCH SIP WITH CALIBRATION AND DATA PRINTOUT |

OPERATING CHARACTERISTICS
at 5.0 VDC AND 25°C UNLESS OTHERWISE NOTED

| SPECIFICATION | MIN | TYP | MAX | UNIT |
|---------------------------------------|--|-----------|-----|------|
| INTERCHANGEABILITY | | | | |
| 0 to 60%RH | -5 | | 5 | % RH |
| 60% to 100%RH | -8 | | 8 | % RH |
| ACCURACY, (BFSL) | | ±3.5 | | % RH |
| ACCURACY, (2nd ORDER CURVE) | | ±2.5 | | % RH |
| HYSTERESIS | | 3 | | % RH |
| REPEATABILITY | | ±0.5 | | % RH |
| SETTLING TIME | | | 70 | mS |
| RESPONSE TIME, 1/e IN SLOW MOVING AIR | | 15 | | Sec. |
| STABILITY, AT 50%RH IN 1 YEAR | | 1.2 | | % RH |
| POWER REQUIREMENTS | | | | |
| VOLTAGE SUPPLY | 4 | | 5.8 | VDC |
| CURRENT SUPPLY | | | 500 | µA |
| VOLTAGE OUTPUT, 2nd ORDER CURVE FIT | $V_{out} = 0.00003(\text{SENSOR RH})^2 + 0.0281(\text{SENSOR RH}) + 0.820$, TYP at 25°C | | | |
| TEMPERATURE COMPENSATION | $V_{out} = (0.0305 + 0.000044T - 0.0000011T^2)(\text{SENSOR RH}) + (0.9237 - 0.0041T + 0.000040T^2)$, T=TEMPERATURE IN °C | | | |
| OPERATING TEMPERATURE | -40 | SEE CHART | 85 | °C |
| OPERATING HUMIDITY | 0 | SEE CHART | 100 | % RH |
| STORAGE TEMPERATURE | -50 | | 125 | °C |
| STORAGE HUMIDITY | | SEE CHART | | % RH |

| DATA PRINTOUT (EXAMPLE) | |
|---------------------------------------|----------------------------|
| MODEL | HIH-4000-001 |
| CHANNEL | 92 |
| WAFER | 030996M |
| MRP | 337313 |
| CALCULATED VALUES AT 5 V | |
| Vout @ 0% RH | 0.958 V |
| Vout @ 75.3% RH | 3.268 V |
| LINEAR OUTPUT FOR 2% RH | |
| ACCURACY @ 25 °C | 0.958 V |
| ZERO OFFSET | 30.680 mV/%RH |
| SLOPE | (Vout-ZERO OFFSET)/SLOPE |
| RH | (Vout-0.958)/0.0307 |
| RATIOMETRIC RESPONSE FOR 0 TO 100% RH | |
| Vout | Vsupply (0.1915 TO 0.8130) |

- NOTES
- 1 - DEVICE IS CALIBRATED AT 5 VDC AND 25°C
 - 2 - NONCONDENSING ENVIRONMENT
 - 3 - CROSS-HATCHED OPERATING ZONE LIMITED TO <50 HOURS
 - 4 - NO SPECIFICATION ZONE
 - 5 - DEVICE IS RATIOMETRIC TO SUPPLY VOLTAGE
 - 6 - EXTENDED EXPOSURE TO >=90% CAUSES A REVERSIBLE SHIFT OF 3% RH
 - 7 - THIS SENSOR IS LIGHT SENSITIVE AND SHOULD BE SHIELDED FROM BRIGHT LIGHT TO ACHIEVE BEST PERFORMANCE



| | | | |
|--|--|---------------------|---|
| DESIGN UNITS: INCH TOLERANCES UNLESS NOTED: | DRAWN NSD 29APR04 CHECK AK 29APR04 | Honeywell | |
| NO PLACE X ± 0.040 ONE PLACE .X ± 0.030 TWO PLACE .XX ± 0.015 THREE PLACE .XXX ± 0.005 FOUR PLACE .XXXX ± 0.0005 ANGLES X ± 2 | THIS DRAWING COVERS A PROPRIETARY ITEM AND IS THE PROPERTY OF HONEYWELL. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE PERMISSION OF HONEYWELL. | | |
| THIRD ANGLE PROJECTION | INTERPRET PER ASME Y14.5M-1994 OTHER HONEYWELL ENGINEERING STANDARDS MAY APPLY | SIZE C SCALE 3:1 | DRAWING NAME HIH-4000 SERIES CHART 1 REV A |
| | Pro/ENGINEER 3D | SHEET 1 OF 2 | |

D

D

C

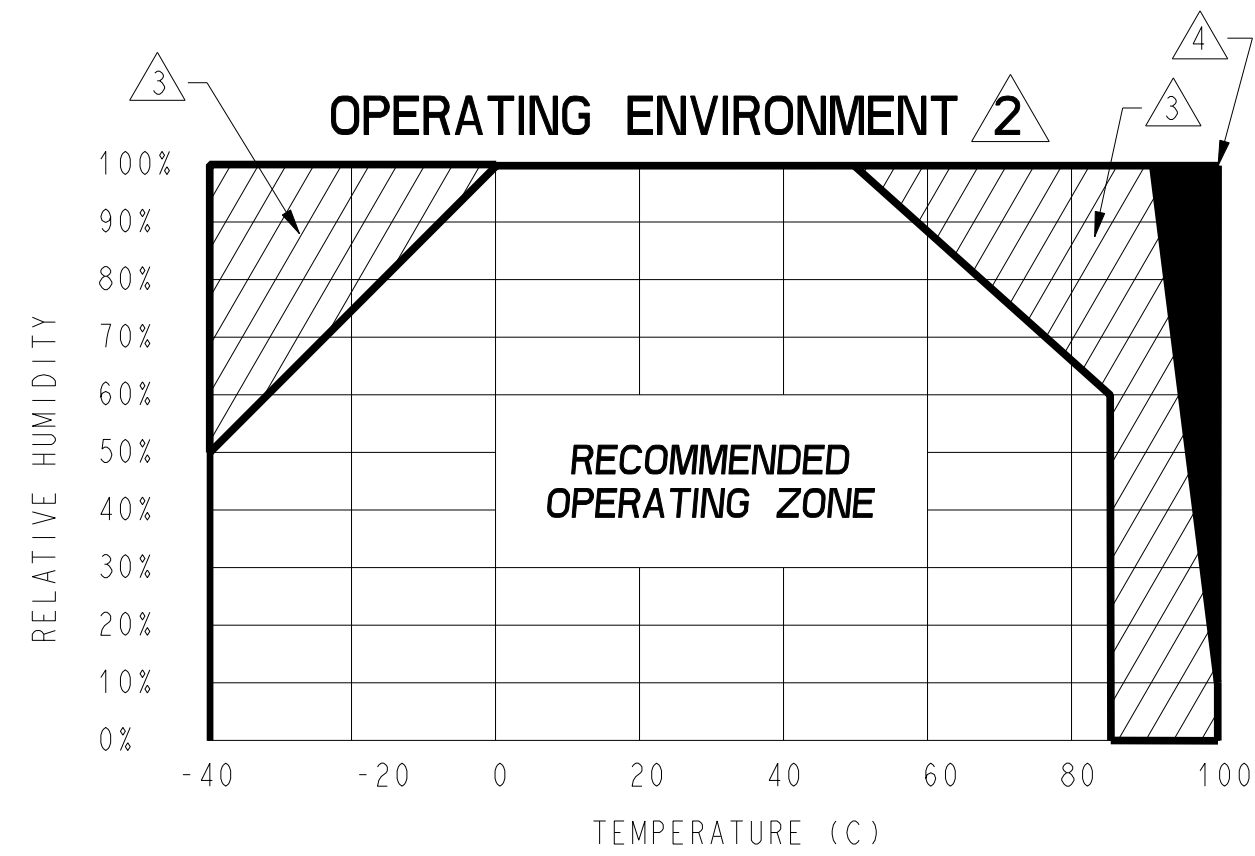
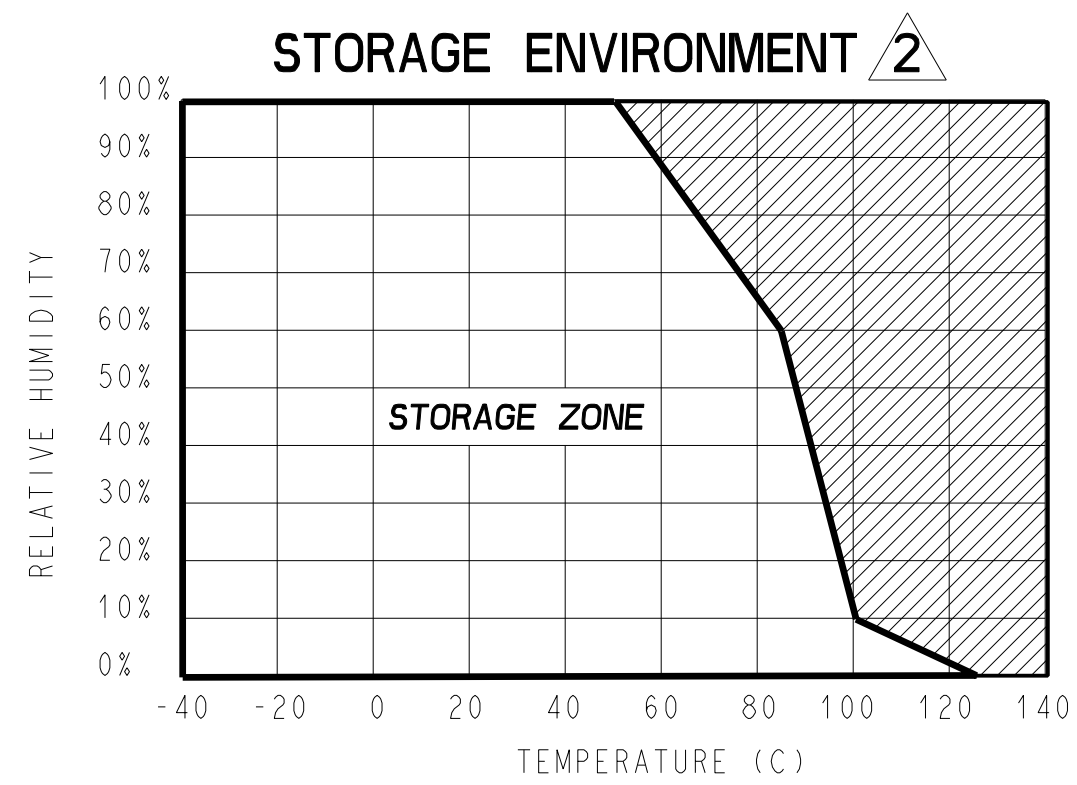
C

B

B

A

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| | | | | | |
|--|--|------------------|--------------|--------------------------------|----------|
| THIS DRAWING COVERS A PROPRIETARY ITEM AND IS THE PROPERTY OF HONEYWELL. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE PERMISSION OF HONEYWELL. | | Honeywell | | | |
| | | SIZE | DWG TYPE | DRAWING NAME | REV |
| | | C | I | HIH-4000 SERIES CHART 1 | A |
| SCALE | | 3:1 | SHEET 2 OF 2 | | |