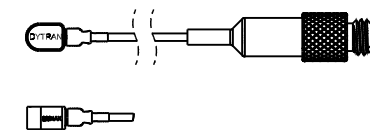
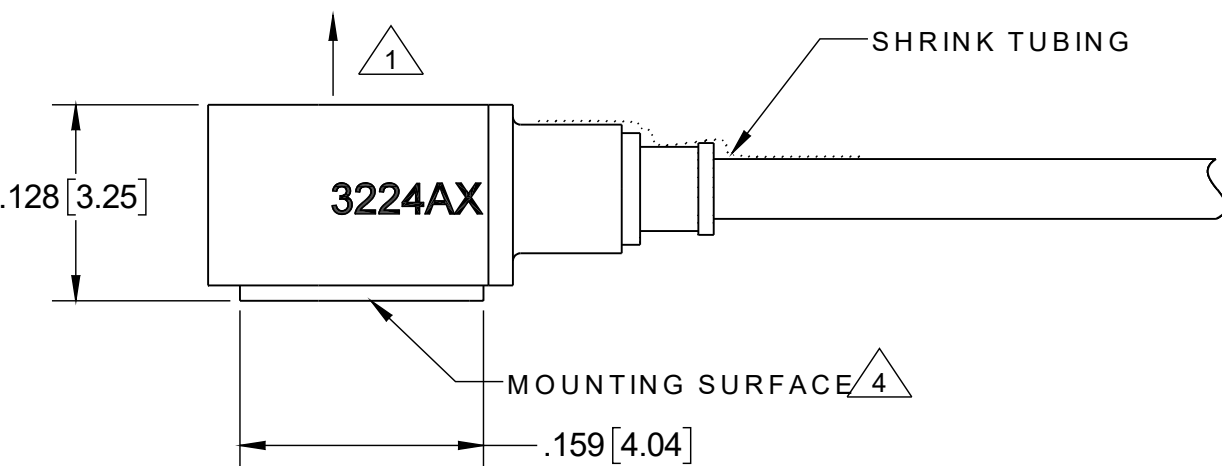


## REVISIONS

| REV. | ECN | DESCRIPTION | BY/DATE | CHK | APPR |
|------|-----|-------------|---------|-----|------|
|------|-----|-------------|---------|-----|------|

## SEE ECN

|   |       |         |                |    |    |
|---|-------|---------|----------------|----|----|
| F | 17029 | SEE ECN | JT<br>01/27/23 | JB | AS |
|---|-------|---------|----------------|----|----|



ACTUAL SIZE

- 5 SEE VARIATION TABLE FOR CABLE LENGTH.
- 4 APPLY ADHESIVE TO THIS SURFACE TO MOUNT.
3. CASE AND CONNECTOR MATERIAL: TITANIUM.
2. WEIGHT LESS CABLE: 0.2 GRAMS.
- 1 ARROW INDICATES SENSE AND DIRECTION OF INPUT ACCELERATION FOR POSITIVE GOING OUTPUT SIGNAL.

|  |                 |               |
|--|-----------------|---------------|
| UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN INCHES. |                 |               |
| DECIMALS   | TOLERANCES ARE: | ANGLES        |
| .XX $\pm .01$  |                 | $\pm 1^\circ$ |
| .XXX $\pm .005$  |                 |               |

| APPROVALS |     | DATE     |
|-----------|-----|----------|
| DRAWN     | NC  | 01/15/08 |
| DESIGN    | NC  | 01/15/08 |
| CHK       | DV  | 08/18/10 |
| APP       | ANS | 08/18/10 |

THIRD ANGLE PROJECTION  
USA



Chatsworth, CA

TITLE:

# OUTLINE/INSTALLATION DRAWING, MODEL 3224A1

SIZE  
**B**

CAGE CODE  
**2W033**

|        |
|--------|
| DWG NO |
|--------|

127-3224A1


REV  
F

SCALE:

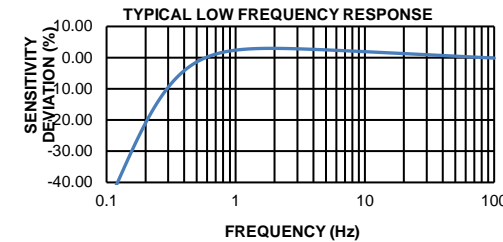
4:1

PART NO: SEE TABLE

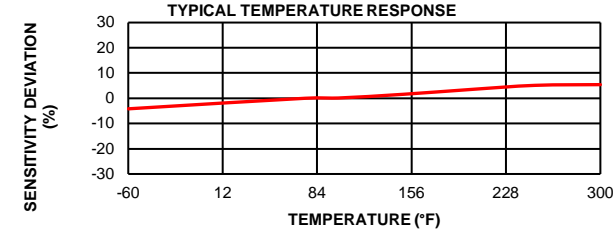
SHEET 1 OF

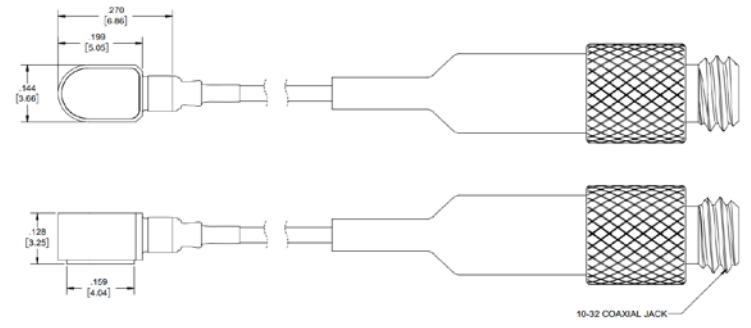
| MODEL NUMBER  |                                  | PERFORMANCE SPECIFICATION   |                                  |                      |            | DOC NO.  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
|---|----------------------------------|---|----------------------------------|----------------------|------------|--|--|-------|--------------------|--------------|--------------------|----------------|----------|--------|--------|------|------|------------|------------|--------|---------|------|-------|------------|------------|--------|----------|------|------|------------|------------|
| 3224A1  |                                  |   |                                  |                      |            | PS3224A1   |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
|   |                                  | IEPE ACCELEROMETER  |                                  |                      |            | REV R, ECN 17029, 01/19/23   |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
|  |                                  | <ul style="list-style-type: none"><li>• MINIATURE SIZE</li><li>• HIGH SENSITIVITY</li><li>• EPOXY SEALED CABLE CONNECTION</li></ul> |                                  |                      |            | <p><b>This family also includes:</b></p> <table><tr><th>Model</th><th>Sensitivity (mV/g)</th><th>Range (g pk)</th><th>Resolution (g RMS)</th><th>Oper. Temp(°F)</th><th>TC (sec)</th></tr><tr><td>3224A2</td><td>2 to 5</td><td>2500</td><td>0.03</td><td>-60 to 300</td><td>0.3 to 1.0</td></tr><tr><td>3224A3</td><td>5 to 10</td><td>1000</td><td>0.037</td><td>-60 to 300</td><td>1.1 to 2.5</td></tr><tr><td>3224A4</td><td>1 to 2.5</td><td>5000</td><td>0.08</td><td>-60 to 300</td><td>0.3 to 1.0</td></tr></table> <p>Please, refer to the performance specifications of the products in this family for detailed description.</p> <p><b>Supplied Accessories:</b></p> <p>1) Model 6725 installation removal wrench.<br/>2) Sample of " Small Petro Mounting Wax".<br/>3) Accredited calibration certificate (ISO 17025)</p> <p><b>Notes:</b></p> <p>[1] Flat mounting surface for adhesive mount.<br/>[2] 10-32 Jack at end of integral 3FT. cable.<br/>[3] Actual sensitivity is given on a calibration certificate traceable to ISO 17025, supplied with each instrument<br/>[4] Measured using zero-based straight line method, % of F.S. or any lesser range.<br/>[5] Do not apply power to this system without current limiting, 20 mA MAX. To do so will destroy the IC charge amplifier.<br/>[6] All specifications are at room temperature unless otherwise specified.<br/>[7] Case is grounded to electrical signal/power ground.<br/>[8] In the interest of constant product improvement, we reserve the rights to change the specifications without notice.</p> <p>It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary overtime. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts.</p> |  | Model | Sensitivity (mV/g) | Range (g pk) | Resolution (g RMS) | Oper. Temp(°F) | TC (sec) | 3224A2 | 2 to 5 | 2500 | 0.03 | -60 to 300 | 0.3 to 1.0 | 3224A3 | 5 to 10 | 1000 | 0.037 | -60 to 300 | 1.1 to 2.5 | 3224A4 | 1 to 2.5 | 5000 | 0.08 | -60 to 300 | 0.3 to 1.0 |
| Model   | Sensitivity (mV/g)               | Range (g pk)  | Resolution (g RMS)               | Oper. Temp(°F)       | TC (sec)   |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| 3224A2  | 2 to 5                           | 2500  | 0.03                             | -60 to 300           | 0.3 to 1.0 |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| 3224A3  | 5 to 10                          | 1000  | 0.037                            | -60 to 300           | 1.1 to 2.5 |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| 3224A4  | 1 to 2.5                         | 5000  | 0.08                             | -60 to 300           | 0.3 to 1.0 |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| <b>PHYSICAL</b>   |                                  | ENGLISH   |                                  | SI                   |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Weight, Less Cable  | 0.007                            | oz  | 0.2                              | grams                |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Mounting Provision  | [1]                              |   | [1]                              |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Connector [2]   | Integral cable                   |   | Integral cable                   |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Case Material   | Titanium                         |   | Titanium                         |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Sensing Element   | Planar Shear Piezoceramic        |   | Planar Shear Piezoceramic        |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| <b>PERFORMANCE</b>  |                                  |   |                                  |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Sensitivity [3]   | 9 to 14                          | mV/g  | .9 to 1.4                        | mV/ m/s <sup>2</sup> |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Range for ± 5 Volts Output  | ± 500                            | g pk  | ± 4905                           | m/s <sup>2</sup> pk  |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Frequency Response, ±3dB  | 0.16 to 60000                    | Hz  | 0.16 to 60000                    | Hz                   |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Resonant Frequency, NOM   | >95                              | kHz   | >95                              | kHz                  |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Equivalent Electrical Noise Floor   | 0.023                            | g RMS   | 0.225                            | m/s <sup>2</sup> RMS |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Amplitude Non-Linearity [4]   | ± 1%                             | %F.S  | ± 1%                             | %F.S                 |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Maximum Transverse Sensitivity  | 5%                               |   | 5%                               |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Strain Sensitivity @ 250µε  | 0.14                             | g/µε  | 1.37                             | m/s <sup>2</sup> /µε |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| <b>ENVIRONMENTAL</b>  |                                  |   |                                  |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Maximum Shock   | 2000                             | g pk  | 19600                            | m/s <sup>2</sup> pk  |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Temperature Range   | -60 to +300                      | °F  | -51 to 149                       | °C                   |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Seal  | Laser welded, Epoxy Sealed Cable |   | Laser welded, Epoxy Sealed Cable |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Magnetic Sensitivity at 100 Gauss   | 0.000009                         | g/Gauss   | 0.8829                           | m/s <sup>2</sup> /T  |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| <b>ELECTRICAL</b>   |                                  |   |                                  |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Supply Current Range [5]  | 2 to 20                          | mA  | 2 to 20                          | mA                   |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Compliance Voltage Range  | 18 to +30                        | V   | 18 to +30                        | V                    |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Output Impedance TYP  | 100                              | Ω   | 100                              | Ω                    |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Bias Voltage  | +7 to +13                        | VDC   | +7 to +13                        | VDC                  |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Discharge Time Constant   | 0.9 to 2.5                       | sec   | 0.9 to 2.5                       | sec                  |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Output Signal Polarity for Acceleration Toward Top                                | Positive                         |   | Positive                         |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |
| Case Grounding  | [7]                              |   | [7]                              |                      |            |  |  |       |                    |              |                    |                |          |        |        |      |      |            |            |        |         |      |       |            |            |        |          |      |      |            |            |

**TYPICAL LOW FREQUENCY RESPONSE**




**TYPICAL TEMPERATURE RESPONSE**





Units on the line drawing are in inches, units in brackets are in millimeters. Refer to 127-3224A1 for more information.



21592 Marilla Street, Chatsworth, California 91311 Phone: 818.700.7818 Fax:818.698.0362 [www.dytran.com](http://www.dytran.com)

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