

Micron Instruments offers a line of Semiconductor - Backed Gages.

⇒ **Easy to install**

Mounted on a flexible insulated circuit with versatile solder pads makes this device easy to install.

The gage and gold wires are over-coated to seal out moisture and to provide additional protection of the gage during the application process.

⇒ **Flexible**

Flexible enough to bend around a 0.5 inch diameter rod.

⇒ **Performance**

Sensitivity is 50 to 75 times Greater than a foil gage

⇒ **Linearity & Stability**

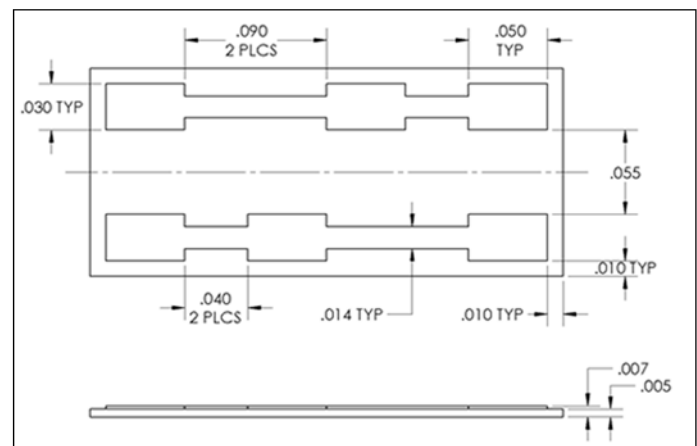
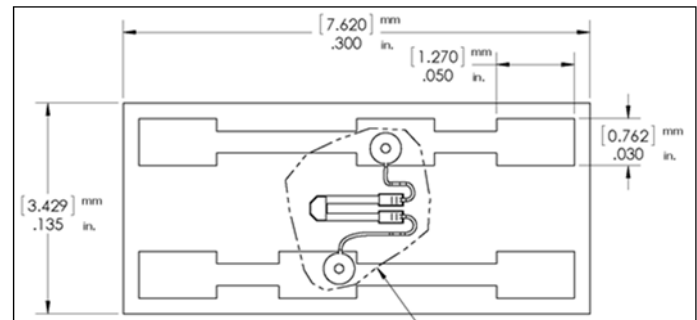
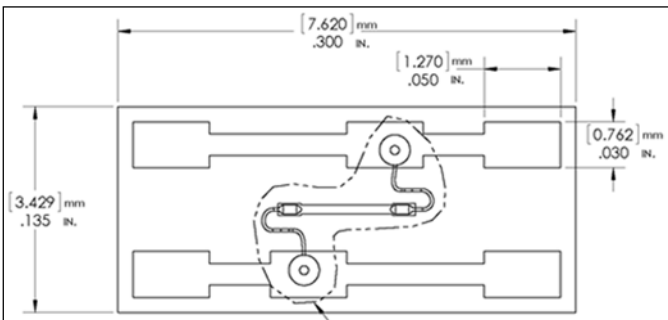
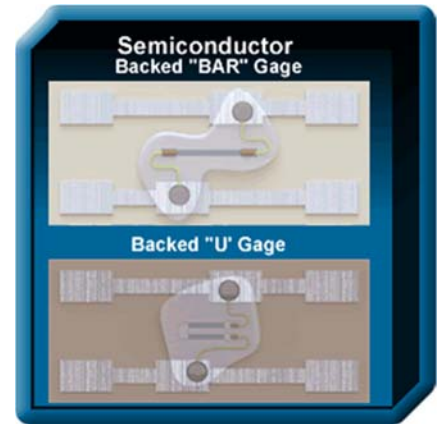
On load cells and foil bridges our gages can be used as a linearity corrector.

A non-linearity of 0.125 % FS can be corrected to less than .05 % of full scale.

Long-term stability is not compromised.

⇒ **Suggested Uses**

Prototyping for proof of concept and for transient or high frequency measurements.



SPECIFICATIONS- BACKING

Backing Material: FR-4

Thickness: .005 in. / 127 mm

Temperature Rating :250C Min

Electrical Trace Material: 1Oz Copper / Tin
(Top Side Only)

Visit our website for complete information on backed and un-backed gages as well as supporting products, or call (805) 522-4376 for technical assistance.

BACKED SEMICONDUCTOR STRAIN GAGES							
PART NUMBER	Width	Lead Attachment	Thickness	Resistance Ohms@ 78° F	Gage Factor	TCGF	TCR
SS-027-013-500PB	.009	Ball Bond	.0004	540±50	155±10	-18%	24%
SS-037-022-500PB	.009	Ball Bond	.0004	540±50	155±10	-13%	17%
SS-060-033-500PB	.008	WL	.0004	540 ±50	140 ±10	-13%	15%
SS-060-033-500PUB	.016	WL	.0004	540 ±50	140 ±10	-12%	14%
SS-060-033-1000PB	.008	WL	.0004	1050 ±75	155 ±10	-18%	24%
SS-060-033-2000PUB	.016	WL	.0004	2000 ±1000	155 ±100	-18%	25%
SS-060-033-5000PB	.008	WL	.0004	5000±500	175 ±10	-23%	47%
SS-080-050-120PB	.008	WL	.0004	120 ±20	120 ±10	-9%	5%
SS-080-050-230PB	.008	WL	.0004	230 ±30	120 ±10	-9%	5%
SS-080-050-345PB	.008	WL	.0004	345 ±40	140 ±10	-13%	16%
SS-080-050-500PB	.008	WL	.0004	540 ±50	140 ±10	-13%	16%
SS-080-050-10,000PUB	.008	WL	.0004	10000±1000	175 ±10	-23%	42%
SS-095-060-350PUB	.016	WL	.0004	350 ±50	120 ±10	-9%	5%
SS-090-060-1150PB	.008	WL	.0004	1125 ±75	155 ±10	-18%	24%
SS-150-124-15PB	.009	WL	.0010	15 ±2	100 ±10	-10%	6%
SS-150-124-25PB	.008	WL	.0008	25 ±3	100 ±10	-10%	6%
SS-150-124-30PB	.008	WL	.0008	30 ±4	100 ±10	-10%	6%
SS-150-124-40PB	.008	WL	.0008	40 ±5	100 ±10	-10%	6%
SS-250-225-120PB	.009	WL	.0004	120 ±20	100 ±10	-10%	6%

Backed Bar Semiconductor Strain Gage Pricing Information										
Part No. ▼	Quantity ►	1-4	5-9	10-24	25-49	50-99	100-150	151-300	301-500	501+
SS-027-013-500PB-S1		\$26.27	\$23.83	\$22.67	\$20.74	\$18.74	\$17.92	\$17.27	\$16.36	Call for Price
-S2		\$78.71	\$66.42	\$54.76	\$44.45	\$39.12	\$37.32	\$36.02	\$34.27	
-S4		\$161.76	\$141.68	\$118.86	\$96.35	\$81.24	\$78.37	\$75.78	\$73.79	
SS-037-022-500PB-S1		\$26.27	\$23.83	\$22.67	\$20.74	\$18.74	\$17.92	\$17.27	\$16.36	
-S2		\$78.71	\$66.42	\$55.14	\$44.45	\$39.12	\$37.32	\$36.02	\$34.27	
-S4		\$161.76	\$141.68	\$118.86	\$96.35	\$81.24	\$78.37	\$75.78	\$73.79	
SS-060-033-500PB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36	Web
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55	
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87	
SS-060-033-1000PB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36	Web
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55	
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87	
SS-060-033-5000PB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36	Web
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55	
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87	
SS-080-050-120PB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36	Web
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55	
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87	
SS-080-050-230PB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36	
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55	
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87	
SS-080-050-345PB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36	Web
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55	
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87	

Backed "Bar" Semiconductor Strain Gage Pricing Information (Continued)

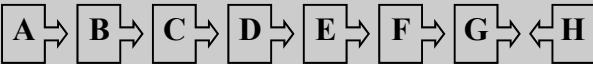
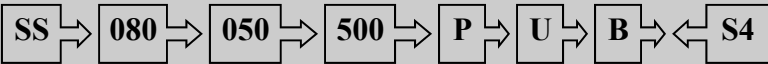
Part No.▼	Quantity▶	1-4	5-9	10-24	25-49	50-99	100-150	151-300	301-500	501+	
SS-080-050-500PB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36	Call for Price	
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55		
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87		
SS-080-050-1000PB-S1		\$26.27	\$24.55	\$23.71	\$22.49	\$19.38	\$18.56	\$17.99	\$17.47		
-S2		\$78.71	\$67.87	\$58.08	\$46.55	\$39.78	\$38.11	\$36.82	\$35.77		
-S4		\$158.87	\$135.85	\$115.98	\$93.47	\$81.24	\$77.65	\$74.29	\$72.34		
SS-090-060-500PB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36		
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55		
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87		
SS-090-060-1150PB-S1		\$26.27	\$24.55	\$23.71	\$22.49	\$19.38	\$18.56	\$17.99	\$17.47		
-S2		\$78.71	\$67.87	\$58.08	\$46.55	\$39.78	\$38.11	\$36.82	\$35.77		
-S4		\$158.87	\$135.85	\$115.98	\$93.47	\$81.24	\$77.65	\$74.29	\$72.34		
SS-150-124-15PB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36		Web
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55		
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87		
SS-150-124-25PB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36		Web
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55		
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87		
SS-150-124-30PB-S1		\$29.83	\$27.40	\$25.85	\$23.92	\$21.98	\$20.05	\$19.14	\$17.27		
SS-150-124-40PB-S1		\$29.83	\$27.40	\$25.85	\$23.92	\$21.98	\$20.05	\$19.14	\$17.27		
SS-250-225-120PB-S1		\$29.83	\$27.40	\$25.13	\$23.21	\$21.66	\$20.45	\$19.54	\$18.62		
-S2		\$81.60	\$70.75	\$59.53	\$49.43	\$46.66	\$43.93	\$42.06	\$40.36		
S4		\$164.64	\$141.68	\$134.71	\$100.67	\$95.00	\$87.95	\$84.04	\$80.59		

Backed "U" Semiconductor Strain Gage Pricing Information

Part No.▼	Quantity▶	1-4	5-9	10-24	25-49	50-99	100-150	151-300	301-500	501+	
SS-037-022-500PUB-S1		\$27.56	\$25.12	\$23.96	\$21.25	\$19.19	\$18.43	\$17.72	\$16.81	Call for Price	
-S2		\$78.71	\$66.42	\$55.14	\$44.44	\$39.11	\$37.32	\$36.02	\$34.26		
-S4		\$161.76	\$141.68	\$118.86	\$96.35	\$81.23	\$78.37	\$75.78	\$73.76		
SS-047-025-500PUB-S1		\$27.56	\$25.12	\$23.96	\$21.25	\$19.19	\$18.43	\$17.72	\$16.81		
-S2		\$78.71	\$66.42	\$55.14	\$44.44	\$39.11	\$37.32	\$36.02	\$34.26		
-S4		\$161.76	\$141.68	\$118.86	\$96.35	\$81.23	\$78.37	\$75.78	\$73.76		
SS-060-033-300PUB-S1		\$25.55	\$23.82	\$22.99	\$21.44	\$19.38	\$18.55	\$17.98	\$17.59		
-S2		\$80.15	\$67.86	\$58.08	\$45.10	\$39.77	\$38.10	\$36.80	\$35.83		
-S4		\$161.76	\$135.85	\$117.42	\$92.03	\$81.23	\$76.93	\$73.49	\$71.62		
SS-060-033-500PUB-S1		\$26.65	\$24.92	\$24.08	\$23.18	\$20.09	\$19.01	\$18.43	\$17.59		
-S2		\$80.15	\$69.31	\$58.21	\$47.98	\$41.21	\$38.76	\$37.54	\$35.77		
-S4		\$161.76	\$138.73	\$120.30	\$87.32	\$84.12	\$80.53	\$78.20	\$76.13		
SS-060-033-2000PUB-S1		\$24.12	\$22.40	\$21.56	\$20.03	\$18.74	\$17.92	\$17.27	\$16.36		Web
-S2		\$77.28	\$64.99	\$55.14	\$44.45	\$38.33	\$36.28	\$34.52	\$33.55		
-S4		\$155.99	\$132.97	\$113.10	\$89.14	\$78.36	\$73.26	\$70.93	\$68.87		
SS-080-050-10000PUB-S1		\$26.96	\$25.26	\$24.41	\$23.18	\$21.98	\$20.04	\$19.54	\$18.62		
SS-095-060-350PUB-S1		\$25.55	\$23.82	\$22.99	\$21.44	\$19.38	\$18.55	\$17.98	\$17.59		
-S2		\$80.15	\$67.86	\$58.08	\$45.10	\$39.77	\$38.10	\$36.80	\$35.83		
-S4		\$161.76	\$135.85	\$117.42	\$92.03	\$81.23	\$76.93	\$73.49	\$71.62		

Backed "M" Semiconductor Strain Gage Pricing Information

Part No.▼	Quantity▶	1-4	5-9	10-24	25-49	50-99	100-150	151-300	301-500	501+	
SS-060-040-2500PBM-S1		\$32.28	\$27.61	\$25.02	\$23.30	\$21.59	\$20.18	\$18.46	\$17.10	Call for Price	
-S2		\$79.78	\$72.19	\$66.98	\$56.06	\$48.17	\$41.72	\$37.93	\$36.82		
-S4		\$160.92	\$144.55	\$135.47	\$113.78	\$97.96	\$84.94	\$77.17	\$72.44		

Ordering Guidelines	Example
	
A. Model (SS)	SS-080-050-500P U B S4 is a Semiconductor Strain gage with a total length of 080 and an active length of 050 . The gage has a nominal resistance of 500 at 78 degrees F. The gage is further defined as Dopant P and Configured as a " U "* Backed Gage. S4 specifies a matched set of 4 gages. Note: <ul style="list-style-type: none"> ▪ S4 Matched set of 4 gages ▪ S2 Matched set of 2 gages. ▪ S1 Single gage with data. *Specify Gage Type: "U", "M" or Leave Blank for Bar Gage For Matched Sets of S5 up to sets of S16 Consult Factory
B. Total Length	
C. Active Length	
D. Nominal Resistance at 78°F	
E. Dopant	
F. U Gage , M Gage, or Leave Blank for Bar Gage*	
G. Backed Gage	
H. Specifies Single or Matched Gages	

Standard Bridge Matching				
Temperature °F	0°	78°	278°	Percent of Base Resistance
Standard Matching	±0.6%	±0.4%	±0.4%	

Note: Custom special matching gages (Mil-Spec.) or additional data points are also available. Please contact Micron Instruments for details. **Phone: (805) 522-4676**

Terms & Conditions	
Minimum Order: \$50.00	
FOB:	Simi Valley, California
Terms:	Net 30 Days Credit Cards: Visa, Master Card, American Express
Effective Date:	01-2016
<i>Prices Subject to Change without Notice</i>	

Semiconductor Strain Gages have large temperature coefficients of resistance making single gage strain measurements difficult unless used at a constant temperature. For this reason, gages are predominantly used in a half bridge or full bridge circuits and carefully matched for slope and intercept.

PART NUMBER DETAILS

SS-060-033-500P-S2

SS designates Semiconductor Strain Gage

060 designates that the gage is 0.060 long.

033 designates the gage has an active area in the center of 0.033.

500P designates 500 ohms nominally at room temperature and it is P-doped.

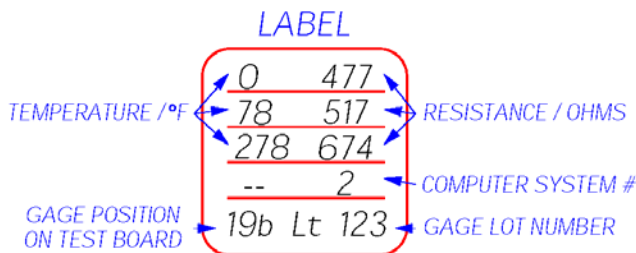
S2 indicates these two gages are resistance versus temperature matched to each other.

STANDARD PACKAGING

Gages are packaged in clear plastic boxes measuring approximately one inch square.

Each clear box lid is labeled with information about the gage.

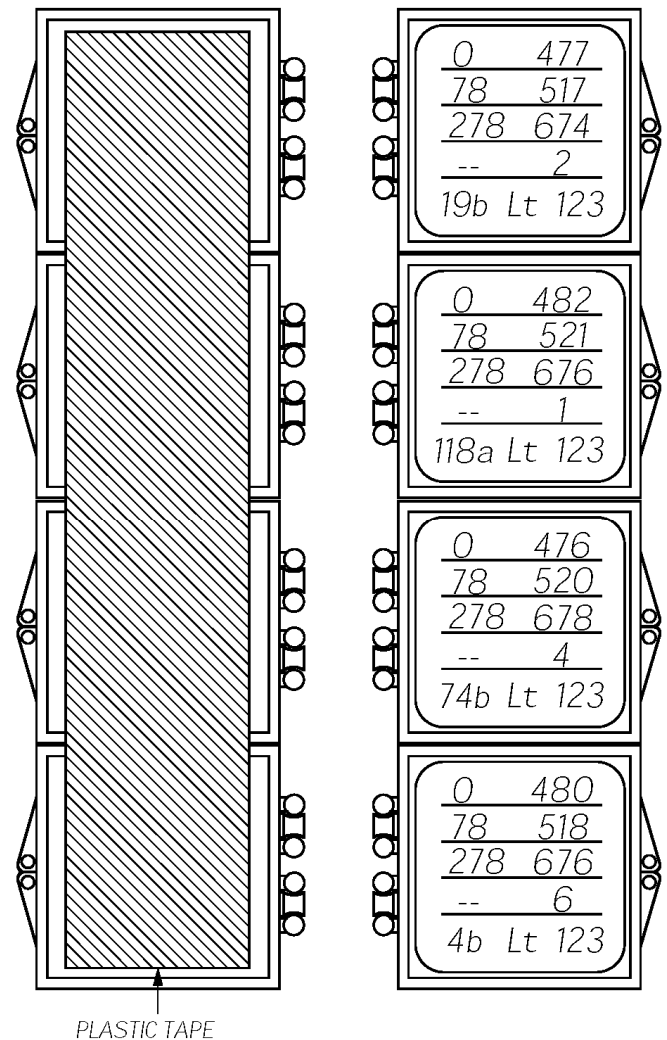
Gages are package one gage to a clear box with each box having its own label. Matched sets will be joined together with clear plastic tape on the bottom of the boxes.



- Temperature ^oF is noted along with the corresponding Resistance in Ω.
- | | | | |
|------|--------------------|-----|---------------|
| Ohms | 0 ^o F | 477 | Corresponding |
| | 78 ^o F | 517 | Resistance in |
| | 278 ^o F | 674 | Ω. |
- Gage lot number is marked as Lt.
 - Computer System number used to measure the resistance over temperature.
 - Gage Position Number identifies the position of the gage on the board in the temperature chamber.

Note:

The computer system also measures and records reverse current and TCR (Thermal Coefficient of Resistance). This data is used to detect non- performing gages allowing them to be removed from production.



MATCHED GAGE INFORMATION

There are many uses for semiconductor strain gages and to accommodate these applications, Micron offers a number of matching options.

SS-060-033-500P-XX

S1 is a single gage, tested and with data.

S2 is a thermally matched set of two gages, tested with data.

S4 is a thermally matched set of four gages, tested with data.

We recommend a spare gage be purchased in the event that a gage is damaged during installation.

An **S3** or **S5** at the end of the part number should be designated for this request

For double bridges requiring eight gages you would specify an **S8** at the end of the gage number or **S9** for a Spare.

STANDARD MATCHING

Standard Matching is at Three Temperatures and adhere to the following tolerances.

0°F	+/- 3 ohms
78°F	+/- 2 ohms
278°F	+/- 2 ohms

CUSTOM MATCHING

In general, tighter matching permits better performance especially with respect to bridge temperature compensation. When gages are to be used below 0°F, additional testing is required.

Micron does offer special matching upon request. **(Examples Below)**

500 Ohms Matched

0°F	+/- 2 ohms
78°F	+/- 1 ohm
278°F	+/- 1 ohm

1000 Ohms Matched

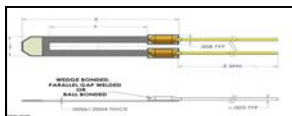
-65°F	+/- 6 ohms
0°F	+/- 6 ohms
78°F	+/- 4 ohms
278°F	+/- 4 ohms

Since the options for matching and temperature are numerous, please consult with our engineers who will advise if more accurate matching is required for your application. 1-800-638-3770

GAGE DESIGNS

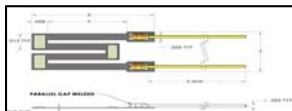


"Bar" Shaped Gage - Lead Wires Exit the ends of each side of gage.



"U" Shaped Gage - Lead Wires Exit the same side of gage.

These gages are also useful since the length is less and for the same length and resistivity, we can offer twice the resistance.

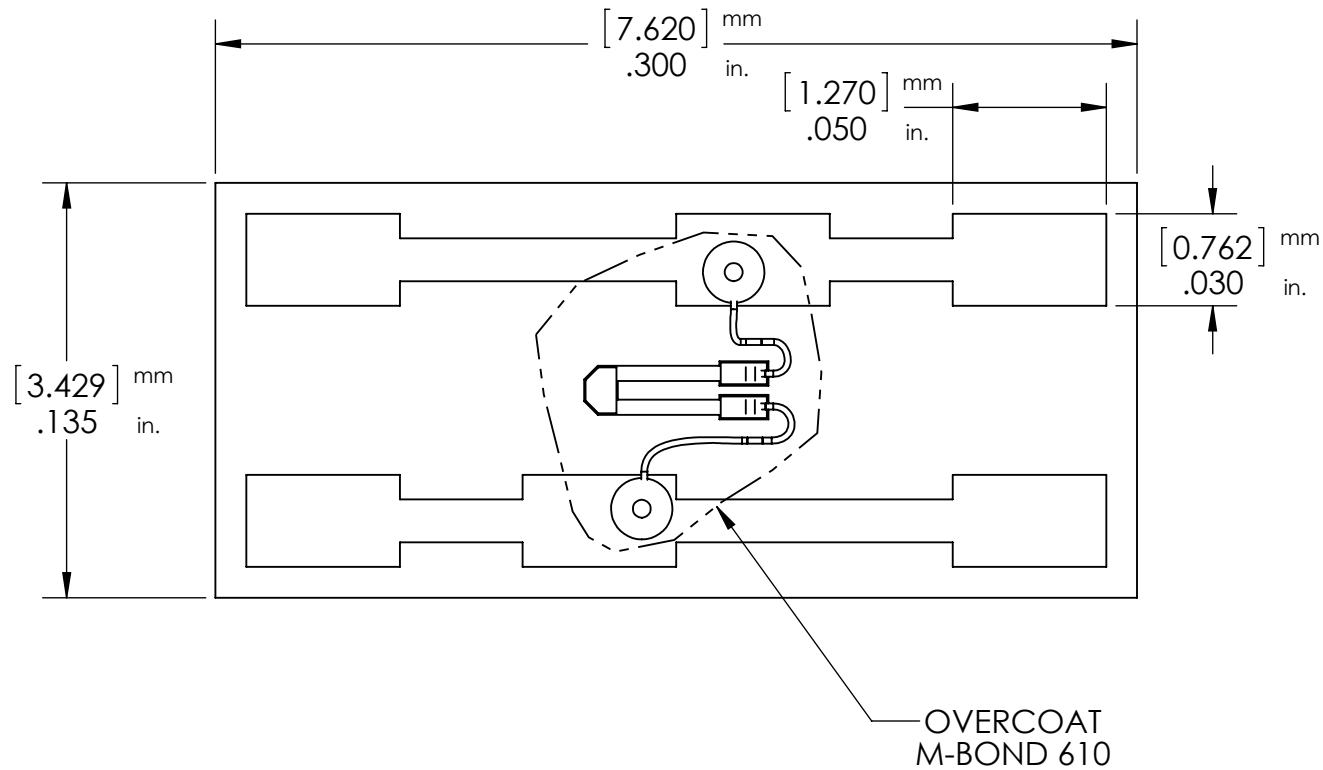


"M" Shaped Gage - Lead Wires Exit the same side of gage.

Gages are available between 10 ohms and 10,000 ohms.

Special gages are available for up to 800°F operation.

PROPERTY OF MICRON INSTRUMENTS (805) 522-4676



- MATERIAL:
.005 THK, Fr-4, Tg 250 MIN.
1Oz Cu TIN EMMERSON FINISH (BOTTOM SIDE NO COPPER).
- GAGE IS "U" type.

<p>PROPRIETARY AND CONFIDENTIAL</p> <p>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MICRON INSTRUMENTS. REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MICRON INSTRUMENTS IS PROHIBITED.</p>			UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: ANGULAR: MACH $\pm 0^{\circ} 30'$ ONE PLACE DECIMAL $\pm .030$ TWO PLACE DECIMAL $\pm .010$ THREE PLACE DECIMAL $\pm .005$ ALL DIA .005 TIR, RADII .005 MAX SURFACE FINISH \checkmark ³²		NAME	DATE	<p>MICRON INSTRUMENTS</p> <p>4509 RUNWAY STREET SIMI VALLEY, CA. 93063 (805) 522-4676 FAX (805) 522-4982 e-mail sensors@microninstruments.com</p> <p>TITLE: PCB, SINGLE BACKED U-GAGE</p>			
			INTERPRET GEOMETRIC TOLERANCING PER:							SIZE
			MATERIAL	SEE NOTES				A	MI-WEB	-
			FINISH					SCALE: 12:1	WEIGHT:	SHEET 1 OF 1
			APPLICATION	DO NOT SCALE DRAWING						
	NEXT ASSY	USED ON								

5

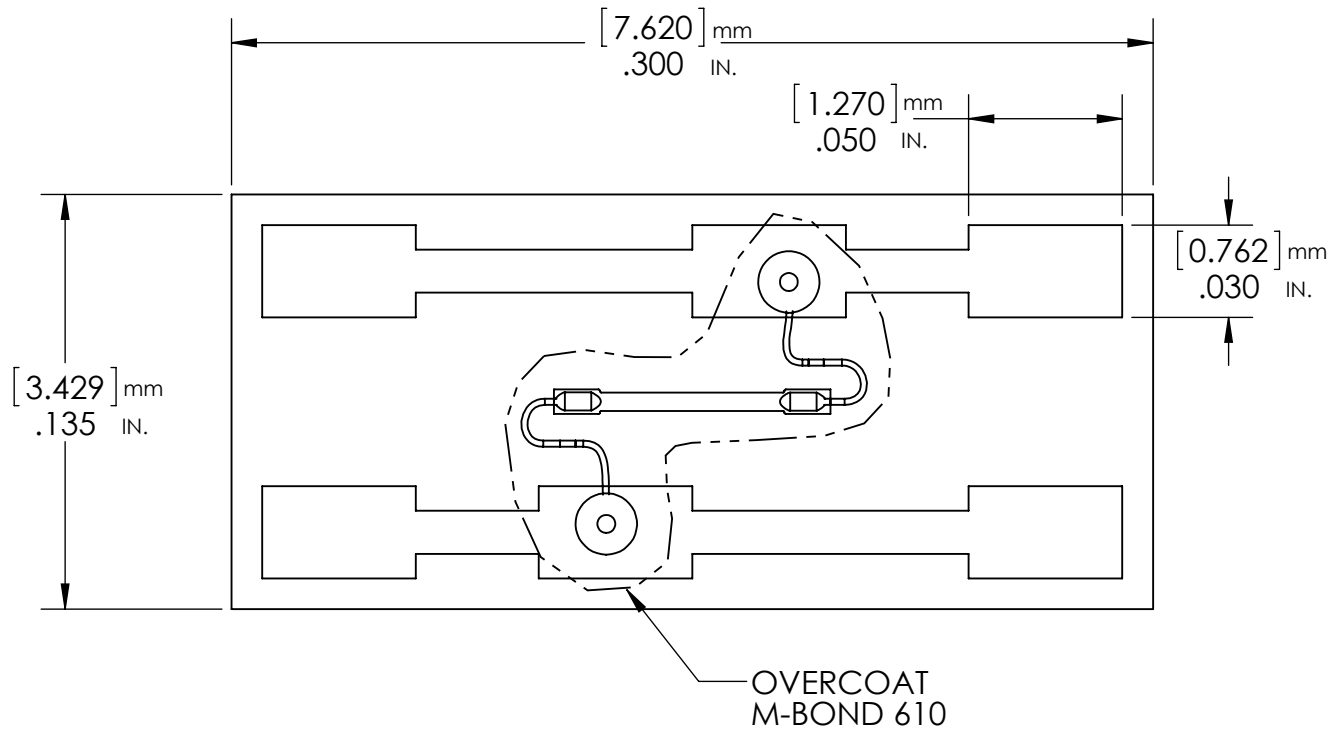
4

3

2

1

PROPERTY OF MICRON INSTRUMENTS (805) 522-4676



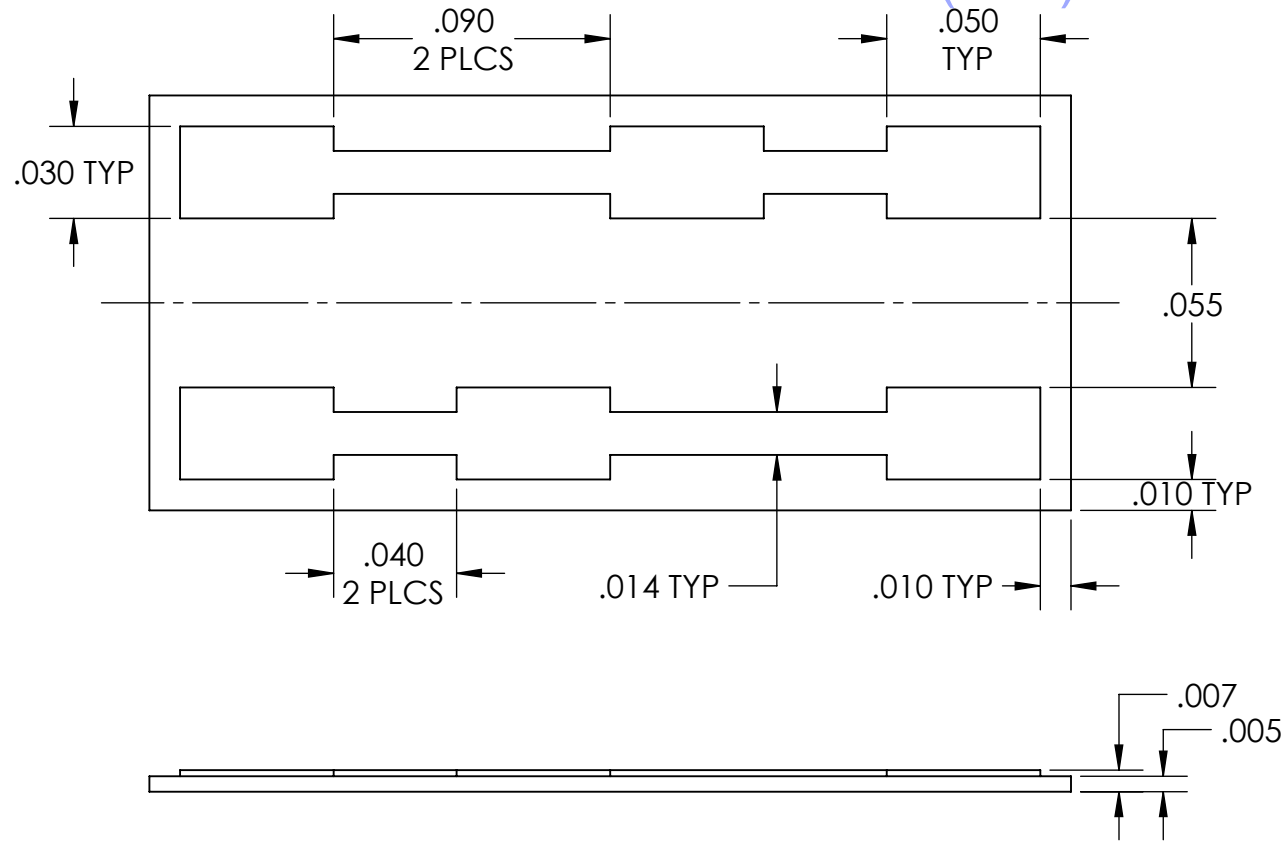
- MATERIAL:
.005 THK, Fr-4, Tg 250 MIN.
1Oz Cu TIN EMMERSON FINISH (BOTTOM SIDE NO COPPER).
- GAGE IS "BAR" type.

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MICRON INSTRUMENTS. REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MICRON INSTRUMENTS IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	08/14/13
		TOLERANCES:	CHECKED	08/14/13
		ANGULAR: MACH $\pm 0^\circ 30'$	ENG APPR.	
		ONE PLACE DECIMAL $\pm .030$	MFG APPR.	
		TWO PLACE DECIMAL $\pm .010$	Q.A.	
		THREE PLACE DECIMAL $\pm .005$	COMPANY:	
		ALL DIA .005 TIR, RADII .005 MAX		
		SURFACE FINISH \checkmark 32		
		INTERPRET GEOMETRIC TOLERANCING PER:		
		MATERIAL		
NEXT ASSY	USED ON	FINISH		
APPLICATION		DO NOT SCALE DRAWING		

MICRON INSTRUMENTS		
4509 RUNWAY STREET SIMI VALLEY, CA. 93063 (805) 522-4676 FAX (805) 522-4982 e-mail sensors@microninstruments.com		
TITLE: PCB, SINGLE BACKED GAGE (GAGED)		
SIZE A	DWG. NO. MI-WEB	REV -
SCALE: 12:1	WEIGHT:	SHEET 1 OF 1

PROPERTY OF MICRON INSTRUMENTS (805) 522-4676



1. MATERIAL:

.005 THK, Fr-4, Tg 250 MIN.

1Oz Cu TIN EMMERSION FINISH (BOTTOM SIDE NO COPPER).

PROPRIETARY AND CONFIDENTIAL
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MICRON INSTRUMENTS. REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MICRON INSTRUMENTS IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	08/14/13
		TOLERANCES:	CHECKED	08/14/13
		ANGULAR: MACH $\pm 0^{\circ} 30'$	ENG APPR.	
		ONE PLACE DECIMAL $\pm .030$	MFG APPR.	
		TWO PLACE DECIMAL $\pm .010$	Q.A.	
		THREE PLACE DECIMAL $\pm .005$	COMPANY:	
		ALL DIA .005 TIR, RADII .005 MAX		
		SURFACE FINISH $\sqrt{32}$		
		INTERPRET GEOMETRIC TOLERANCING PER:		
		MATERIAL		
		SEE NOTES		
		FINISH		
NEXT ASSY	USED ON			
APPLICATION		DO NOT SCALE DRAWING		

MICRON INSTRUMENTS

4509 RUNWAY STREET
 SIMI VALLEY, CA. 93063
 (805) 522-4676 FAX (805) 522-4982
 e-mail sensors@microninstruments.com

TITLE: PCB, SINGLE BACKED GAGE

SIZE	DWG. NO.	REV
A	MI-WEB	-

SCALE: 16:1 WEIGHT: SHEET 1 OF 1