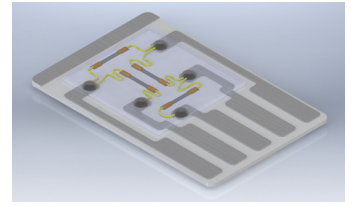
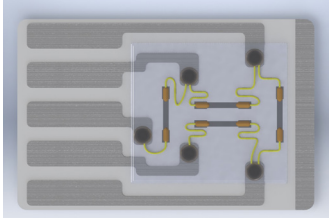


SSGF Full-Bridge Semiconductor Strain Gages



Introduction

Piezo-Metrics offers our SS semiconductor strain gages in a pre-mounted SSGF Full-bridge configuration for use in a wide range of applications. These devices use our SS semiconductor strain gages, giving the SSGF full-bridge 50 to 75 times more sensitivity than traditional foil gages. Each full-bridge includes four thermally matched SS semiconductor strain gages bonded onto a single backing. Since all four gages are matched they compensate each other thermally thru temperature and thermal expansion. Multiple matched full-bridges can be ordered to form a custom configuration where all the full-bridges are matched to each other. The SSGF full-bridge helps simplify the installation of strain gage sets and provides flexibility for many applications.

Half-Bridge configurations for load, bending, or torque utilizing 2 matched gages on a single backing are also available utilizing our SS gages. See DS-SSGH Half-Bridge strain gage data sheet.

Benefits

Easy to install

The strain gages are mounted on a flexible insulated circuit substrate with versatile solder pads making this device easy to install. The gage and gold wire leads are over-coated to seal out moisture and provide additional protection during application and use. Installation of our backed strain gages can be done using similar tools and adhesives that are used on foil gages.

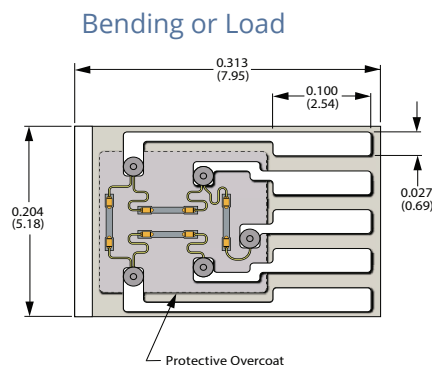
Performance

The SSGF Full-bridge design offers greater installation flexibility, with some performance variations when compared to unbacked gages. For example, when both gages are being used in the half-bridge, the raw gage factor (GF) of 120 will roughly be 85% of an unbacked gage. The actual performance and benefits will vary depending on your specific application.

Suggested Usage

The insulated circuit is flexible enough to bend around a rod as small as 0.5 inches (12.7 mm) in diameter without damaging the gage. SSGF full-bridges have been successfully used in a wide range of applications, including prototyping, R&D, and final production components.

SSGF Full-Bridge Strain Gage Configuration



Backing Material Specifications:

Backing Material: FR-4 TG-250
 Thickness: 0.005 in. (0.127 mm)
 Electrical Trace Material: 1Oz Copper / Tin
 (Top Side Only)

Dimensions in Inches (MM)

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SSGF Full-Bridge Strain Gage Part Numbers

SSGF Full-Bridge Part Number *	Typical Resistance Ohms @ 78°F	Typical Raw Gage Factor	Typical TCR	Gage Type
SSGF-080-050-120PB - []	120	120	8%	Bar Gage
SSGF-080-050-345PB - []	345	150	16%	Bar Gage
SSGF-080-050-500PB - []	540	150	16%	Bar Gage
SSGF-090-060-500PB - []	540	150	16%	Bar Gage
SSGF-080-050-1000PB - []	1050	155	24%	Bar Gage
SSGF-090-060-1150PB - []	1125	175	30%	Bar Gage
SSGF-060-033-500PUB - []	500	140	17%	U Gage
SSGF-060-033-2000PUB - []	2000	160	31%	U Gage
SSGF-080-050-10000PUB - []	10000	165	42%	U Gage

• For full gage specifications please refer to **DS-SS-BAR Gage Data Sheet** and **DS-SS-U Gage Data Sheet**.

Ordering Information

Example

A - B	SSGF-080-050-120PB - M2
<p>A. SSGF Full-Bridge Strain Gage Part Number (* See Table) **</p> <p>B. Specify Single or multiple Matched Full-Bridge gage Sets. **</p> <p>M1 - single backing with four semiconductor gages that have been resistance matched to each other.</p> <p>M2 - two backings with four semiconductor gages on each backing, all gages are resistance matched to each other.</p> <p>M3 - three backings with four semiconductor gages on each backing, all gages are resistance matched to each other.</p> <p>M4 - four backings with four semiconductor gages on each backing, all gages are resistance matched to each other.</p>	<p>A. SSGF-080-050-120PB indicates this is model SSGF backed full-bridge with four matched SS semiconductor strain gages with a total length of .080", an active length of .050", a base resistance of 120 ohms, Dopant P, and is backed B.</p> <p>B. - M2 specifies a set of 2 backings with four semiconductor gages on each backing, all gages are resistance matched to each other.</p>

Standard Bridge Gage Matching **

Temperature °F	0°	78°	278°	Percent of Base Resistance (Note that bridge gage matching is done at the gage level prior to bonding to backing)
Standard Matching	±0.6%	±0.4%	±0.4%	

** • Matched sets larger than -M4, custom gage temperature matching, or additional temperature test data points are available - Consult Factory.
• All SSGF Full-bridges are packaged as singles or matched sets and shipped with resistance vs temperature data for each set.

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