

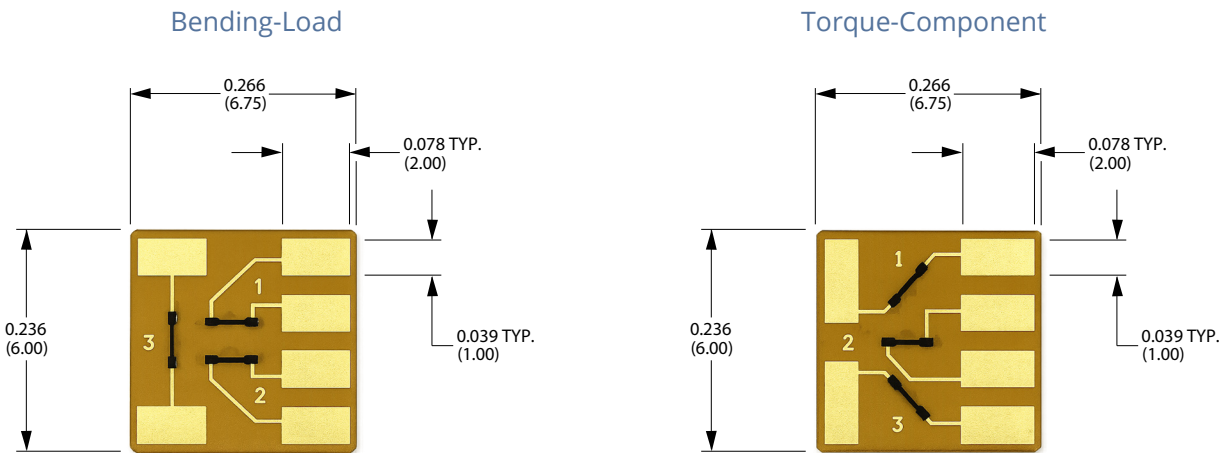
# RSGH Semiconductor Strain Gage Half-Bridge Rosette

## Introduction

Piezo-Metrics’ semiconductor strain gage half-bridge rosette uses the same surface preparation techniques, bonding procedures and electrical connection methods as those used for metal foil strain gage rosettes with the added advantage of having a Gage Factor (GF) that is up to 70 times greater than that of a standard metal foil strain gage.

Two types of half-bridge rosettes are available, namely, the Bending-Load rosette and the Torque-Component rosette. Bending loads are measured using Gage 1 and Gage 2 on the Bend-Load rosette while Axial Loads are measured using Gage 3 and either Gage 1 or Gage 2. Torque loads are measured using Gage 1 and Gage 3 on the Torque-Component rosette while component strains are measured using Gages 1, 2 and 3 which are oriented at +45 deg/0 deg/-45 deg, respectively.

## RSGH Half-Bridge Configurations



Dimensions in Inches (MM)

## RSGH Half-Bridge - Part Numbers

RSGH Half-Bridge Part Number	Nominal Gage Resistance (Ohms @ 78°F)	Half-Bridge Configuration
RSGH-060-500-BL - [ ]	500	Bending-Load
RSGH-060-500-TC - [ ]	500	Torque-Component



## RSGH Half-Bridge Strain Gage Specifications

Characteristics	Value
Overall Dimensions L x W x T - Inches (mm)	0.266 X 0.236 x 0.003 (6.75 X 6.00 X 0.070)
Gage Length - Inches (mm)	0.060 (1.52)
Active Area Gage Length - Inches (mm)	0.033 (0.84)
Nominal Gage Resistance (ohms)	400 to 600
Nominal Gage Factor (GF)	120 to 125
Nominal TCR - ppm per °F (ppm per °C)	2400 to 2600 (4300 to 4500)
Nominal Gage Matching Tolerance (% of nominal resistance)	< 10
Operating Temperature Range - °F (°C)	-4 to +130 (-20 to 55)
Gage Strain Limit (microstrain)	< 1000
Linearity (% of 1000 microstrain Span)	< 2
Hysteresis (% of 1000 microstrain Span)	< 2
Fatigue Life cycles at 0 to 400 microstrain and 86°F (30°C)	> 10 <sup>6</sup>
Substrate Type	Polyimide
Maximum Mountable Curvature Radius - Inches (mm)	0.60 (15.0)
Mounting Method	Cyanoacrylate or 2-part Epoxy

## Ordering Information

## Example

A - B	RSGH-060-500-BL - M2
<p><b>A.</b> RSGH Half-Bridge Strain Gage Part Number (<i>See Table</i>)</p> <p><b>B.</b> Specify Single or multiple Matched Half-Bridge Rosettes.</p> <p><b>M1</b> - single Rosette with three semiconductor gages that have been resistance Precision_Matched™ to each other.</p> <p><b>M2</b> - two Rosettes with three semiconductor gages on each Rosette, all gages are Precision_Matched™ to each other.</p> <p><b>M3</b> - three Rosettes with three semiconductor gages on each Rosette, all gages are Precision_Matched™ to each other.</p> <p><b>M4</b> - four Rosettes with three semiconductor gages on each Rosette, all gages are Precision_Matched™ to each other.</p>	<p><b>A.</b> <b>RSGH-060-500-BL</b> indicates this is model <b>RSGH</b> Rosette Half-bridge with <b>060-500</b> Ohm strain gages and half-bridge configuration is Bending-Load <b>BL</b>.</p> <p><b>B.</b> <b>M2</b> specifies a set of 2 Rosettes with three semiconductor gages on each Rosette, all gages are Precision_Matched™ to each other.</p>

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