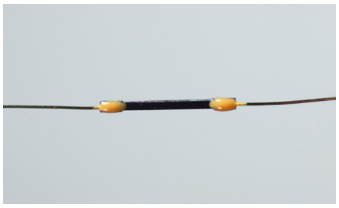
SS Bar Semiconductor Strain Gages

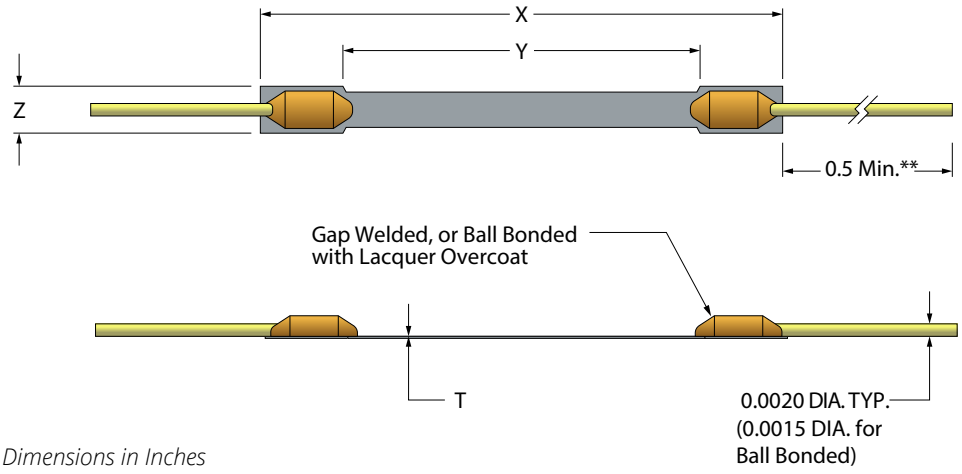
Introduction

Piezo-Metrics SS-Bar semiconductor strain gages are made from "P" doped bulk silicon. This is a two terminal resistive device. The silicon is micro machined to shape, thus eliminating molecular dislocation or cracks, thereby optimizing performance.



SS BAR Gage - Shown for Reference

SS Bar Gage Outline



See Table
for T, X, Y & Z

T = Thickness
X = Overall Length
Y = Active Area
Z = Width

Dimensions in Inches

Standard SS Bar Strain Gages

Part Number _ _-X-Y-_ _ _ _	Width Z	Lead Attachment	Thickness T	Resistance Ohms@ 78°F	Typical Gage Factor	Typical TCR
SS-027-013-500P	.009	Ball Bonded	.0004	540±50	175	24%
SS-037-022-500P	.009	Ball Bonded	.0004	540±50	150	17%
SS-080-050-120P	.008	Gap Welded	.0004	120±20	120	8%
SS-080-050-345P	.008	Gap Welded	.0004	345±40	150	16%
SS-080-050-500P	.008	Gap Welded	.0004	540±50	150	16%
SS-080-050-500P-BB	.008	Ball Bonded	.0004	540±50	150	16%
SS-080-050-1000P	.008	Gap Welded	.0004	1050±75	155	24%
SS-090-060-500P	.008	Gap Welded	.0004	540±50	150	16%
SS-090-060-1150P	.008	Gap Welded	.0004	1125±75	175	30%
SS-150-124-15P	.008	Gap Welded	.0010	15±2	85	9%
SS-150-124-40P	.008	Gap Welded	.0007	40±4	100	6%
SS-250-225-120P	.009	Gap Welded	.0004	120±20	100	6%

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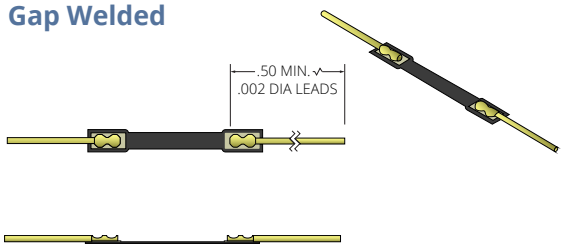
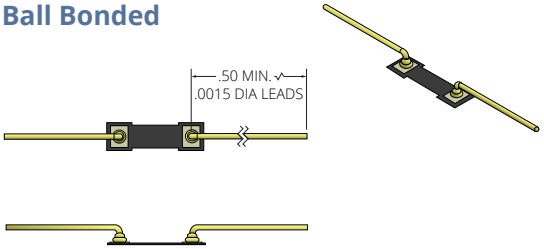
Lead Attachment Configuration

(Prior to lacquer Overcoat)

Gap Welded



Ball Bonded



Standard Gage Specifications

Materials	Czochralski pulled boron doped silicon
Leads	.002 dia. Pure Gold (99.99%) leads. (Ball Bonded Gages - .0015 dia. Gold leads)
Contact Pads	Vapor deposited aluminum (SS-027 & SS-037 Ball Bonded gages) Deposited gold with titanium tungsten adhesion layer (SS-080 thru SS-250 gages)
Lead Attachments	Gap Welded or Ball Bonded with reinforced Lacquer Overcoat
Operating Strain	±2000 μ inch/inch (3000 μ inch/inch max.)
Linearity	Better than ±0.25% to 600 μ inch/inch Better than ±1.50% to 1500 μ inch/inch
Max. Operating Temperature	500°F

Ordering Information

Example

A - B - C - D > E - F	SS - 080 - 050 - 500 > P - S4
A. Model (SS)	**SS-080-050-500P-S4** is a Semiconductor Strain gage with a total length of **.080"** and an active length of **.050"**. The gage has a base resistance of **500** ohms. The gage is further defined as Dopant **P,** and **S4** specifies a matched set of 4 gages.
B. Total Length ("X" Dimension)	
C. Active Length ("Y" Dimension)	
D. Nominal Resistance at 78°F (Ohms)	**Match Set Options:**
E. Dopant (P)	• S4 Matched set of 4 gages with temperature Data • S2 Matched set of 2 gages with temperature Data • S1 Single gage with temperature Data • S0 Single gage without temperature data. * For Matched Sets of S5 up to sets of S16 Consult Factory
F. Specifies Matched Gage Sets, Single Gage, or Bulk Gages	

Standard Bridge Matching *

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

Notes:
** Matched sets larger than -S4, custom gage temperature matching, or additional temperature test data points are available - Consult Factory.*
*** Gage Leads typically run parrellel to gage but are not guarenteed to be totally straight. If specific gage lead forming is required - Consult Factory.*

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