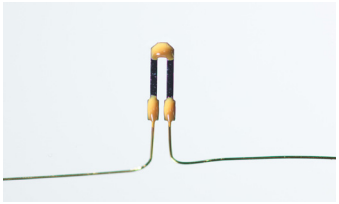
SS “U” Semiconductor Strain Gages

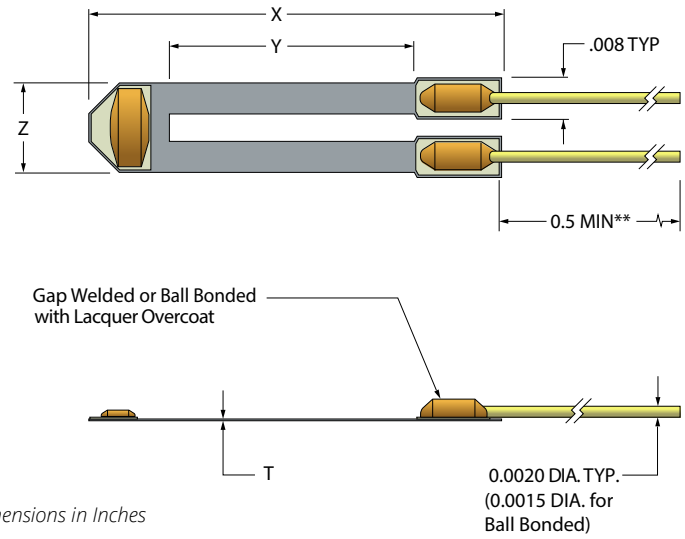
Introduction

Piezo-Metrics SS “U” 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 U Gage - Shown for Reference

SS “U” Gage Outline



Dimensions in Inches

See Table
for T, X, Y & Z

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

Standard SS “U” Strain Gages

Part Number _ _-X-Y-_ _ _ _	Width Z	Lead Attachment	Thickness T	Resistance Ohms@ 78°F	Typical Gage Factor	Typical TCR
SS-018-011-3000PU	.012	Ball Bonded	.0004	3000±150	120	42%
SS-037-022-500PU	.016	Gap Welded	.0004	540±50	140	17%
SS-047-025-350PU	.016	Gap Welded	.0004	325±40	100	11%
SS-060-033-500PU	.016	Gap Welded	.0004	540±50	140	17%
SS-060-033-2000PU	.016	Gap Welded	.0004	2000±100	160	31%
SS-080-050-10000PU	.013	Gap Welded	.0004	10000±1000	165	42%
SS-095-060-350PU	.016	Gap Welded	.0004	350±50	120	8%

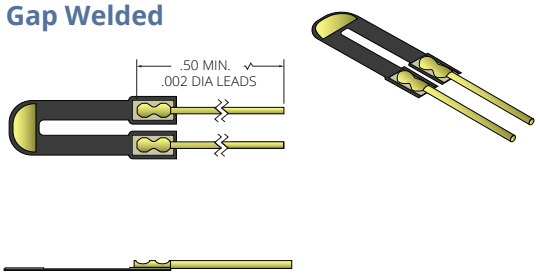
Contact: www.piezo-metrics.com • sales@piezo-metrics.com
4584 Runway Street • Simi Valley, CA 93063 USA
(805) 522-4676

Precision_Metric™ and Precision_Matched™ are trademarks of Piezo-Metrics, Inc.
©2025 Piezo-Metrics, All Rights Reserved

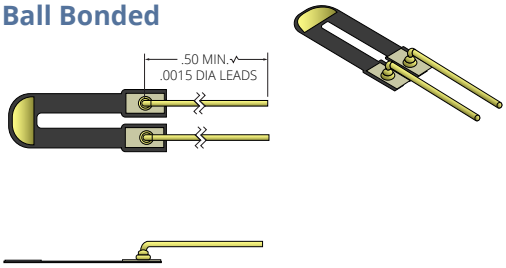
Lead Attachment Configuration

(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-018 Ball Bonded gages) Deposited gold with titanium tungsten adhesion layer (SS-037 thru SS-095 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

A - B - C - D > E > F - G
A. Model (SS)
B. Total Length ("X" Dimension)
C. Active Length ("Y" Dimension)
D. Nominal Resistance at 78°F (Ohms)
E. Dopant (P)
F. Specifies Gage Configuration type ("U")
G. Specifies Matched Gage Sets, Single Gage, or Bulk Gages

Example

SS - 060 - 033 - 500 > P > U - S4

SS-060-033-500PU-S4 is a Semiconductor Strain gage with a total length of **.060"** and an active length of **.033"**. The gage has anominal resistance of **500** ohms at 78 degrees F. The gage is further defined as Dopant **P, "U"** gage configuration, and **S4** specifies a matched set of 4 gages.

Match Set Options:

- 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 *

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 are typically formed with a 90° bend due to manufacturing & packaging processes. If specific gage lead forming is required - Consult Factory.*

Contact: www.piezo-metrics.com • sales@piezo-metrics.com
4584 Runway Street • Simi Valley, CA 93063 USA
(805) 522-4676

Precision_Metric™ and Precision_Matched™ are trademarks of Piezo-Metrics, Inc.
©2025 Piezo-Metrics, All Rights Reserved