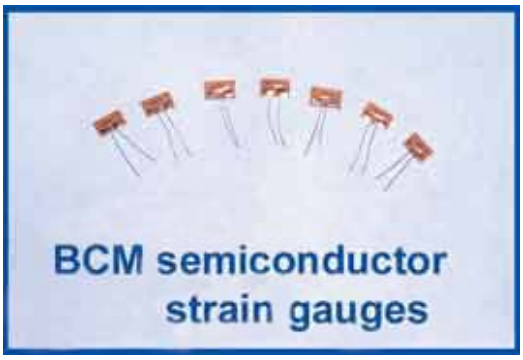
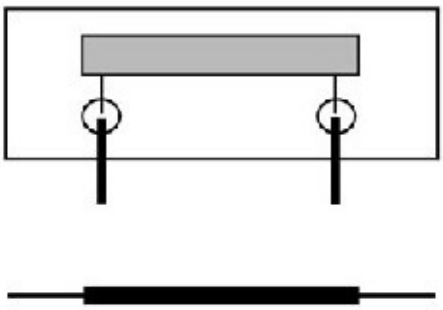
Semiconductor Strain Gauges





1. Descriptions and Gauge Configurations

Based on piezoresistive effect, T&S semiconductor strain gauges are made from p-type doped silicon wafer, and manufactured in two types: bar-type and backing-type. When gauges are made in the bar-type, they are naked gauges (SN-series), while made in the backing-type, the gauges are backed with phenolic-resin (SB-series).

The semiconductor gauges are manufactured of three different dimensions ("1", "2" and "3") and the gauge leads can be finished in different lead-configuration. Illustrated on the top, are some SB-series backed-gauges of type 2 lead-configuration.

T&S semiconductor strain gauges are listed according to their part number (P/N). For information on the gauge P/N and the detailed explanation of gauge lead-configuration, please refer to Semiconductor Gauge Coding System and Lead-Configuration.

The gauges of different gauging factors and electrical resistances, are available in stock for quick delivery.

2. Gauge Types and Physical Dimensions

Gauge P/N	Gauge Type	Gauge Length	Crystal Width	Crystal Thickness	Backing (L x W)
SB 1 - ## -P- *	backed-gauge	3.8 mm	0.3 mm	0.05 mm	5 mm x 3 mm
SB 2 - ## -P- *	backed-gauge	5 mm	0.4 mm	0.06 mm	8 mm x 5 mm
SB 3 - ## -P- *	backed-gauge	6 mm	0.5 mm	0.06 mm	9 mm x 6 mm
SN 1 - ## -P- *	naked-gauge	3.8 mm	0.3 mm	0.05 mm	no backing
SN 2 - ## -P- *	naked-gauge	5 mm	0.4 mm	0.06 mm	no backing
SN 3 - ## -P- *	naked-gauge	6 mm	0.5 mm	0.06 mm	no backing

"1", "2" and "3" identify the gauge dimensions, "##" stands for the gauge resistance, and " * " for the gauge lead-configuration.

3. Technical Specifications

Gauge P/N	R*	GF**	TCR*** (1/°C)	TCGF**** (1/°C)	Working Current (mA)	Working Temp (°C)	Strain Limit (με)
SB (SN) # -15-P- *	15	75 +/- 5%	< 0.08%	< 0.12%	< 25	< 80	6000
SB (SN) # -25-P- *	25	75 +/- 5%	< 0.08%	< 0.12%	< 25	< 80	6000
SB (SN) # -30-P- *	30	80 +/- 5%	< 0.08%	< 0.12%	< 25	< 80	6000
SB (SN) # -60-P- *	60	100 +/- 5%	< 0.08%	< 0.12%	< 25	< 80	6000
SB (SN) # -120-P- *	120	110 +/- 5%	< 0.15%	< 0.15%	< 25	< 80	6000
SB (SN) # -200-P- *	200	120 +/- 5%	< 0.15%	< 0.15%	< 20	< 80	6000
SB (SN) # -350-P- *	350	130 +/- 5%	< 0.35%	< 0.28%	< 15	< 80	6000
SB (SN) # -600-P- *	600	140 +/- 5%	< 0.4%	< 0.3%	< 12	< 80	6000
SB (SN) # -1000-P- *	1000	150 +/- 5%	< 0.4%	< 0.3%	< 12	< 80	6000

: indication of gauge dimensions
* R = gauge resistance in Ohms @ 32 °C.

** GF = gauge factor (strain sensitivity) @ 32 °C.
*** TCR = temperature coefficient of resistance @ 32 °C.
**** TCGF = temperature coefficient of gauge factor @ 32 °C.

The gauge specifications and physical dimensions are subject to change without notice.