

# Kulite®

## STRAIN GAGE SERIES

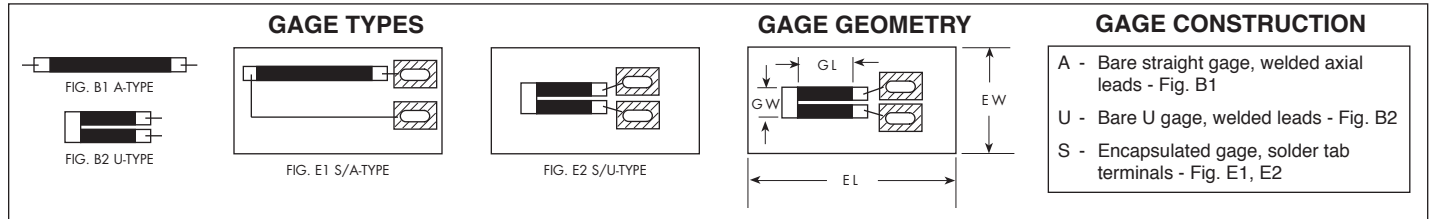
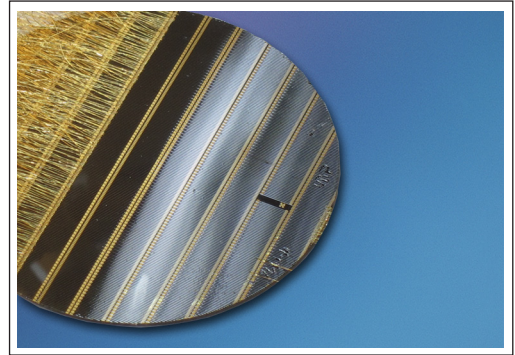
When compared to conventional metallic wire and foil gages, Kulite semiconductor gages offer some significant advantages:

- Higher Sensitivity
- Smaller Sizes
- Higher Resistance
- Higher Fatigue Life
- Lower Hysteresis
- Lower Non-linearity
- Increased Temperature Envelope

The semiconductor strain gage may be thought of as a strain sensitive resistor. Generally when bonded to a stressed member, its resistance changes as a function of applied strain. This characteristic makes it useful in the fields of stress analysis, physical measurements, testing, transducer and instrumentation manufacture. Additionally, the latest Silicon-On-Insulator (SOI) technology enables the fabrication of the high temperature strain gages with enhanced performance characteristics. These gages, as well as all other silicon based strain gages, are easily optimized for specific customer applications and have been found by customers to be truly superior to their foil gage counterparts.

For further information, please download our Strain Gage Manual, which can be found on the *Reference Library* page at [www.kulite.com](http://www.kulite.com).

Kulite recommends the [KSC Series](#) of signal conditioners to maximize the measurement capability of the Strain Gage Series.



### STRAIN GAGE CHARACTERISTICS AND SELECTION TABLE

RESISTIVITY OR DOPING CODE	P	GAGE CODE	FIGURE	(GL) ACTIVE LENGTH ±.002	(GW) GAGE WIDTH ±.002	(EL) ENCAPSULATION		
						LENGTH ±.050	WIDTH ±.020	
<b>C</b>	G.F.	+ 100	ACP-15-150	B1	.100	.020		
	TCR	+ 4%	ACP-30-150	B1	.100	.010		
	TCGF	- 6%	ACP-120-300	B1	.266	.009		
	Linearity	± 0.2%	UCP-120-090	B2	.065	.016		
			S/ACP-120-300	E1	.266	.009	.470	.150
		S/UCP-120-090	E2	.065	.016	.260	.150	
<b>D</b>	G.F.	+ 115	ADP-250-220	B1	.186	.009		
	TCR	+ 3%	ADP-350-300	B1	.266	.009		
	TCGF	- 8%	UDP-350-175	B2	.140	.016		
	Linearity	± 0.2%	S/ADP-350-300	E1	.266	.009	.470	.150
			S/UDP-350-175	E2	.140	.016	.345	.150
<b>E</b>	G.F.	+ 130	AEP-350-220	B1	.170	.010		
	TCR	+ 6%	AEP-500-300	B1	.250	.012		
	TCGF	- 10%	UEP-350-060	B2	.035	.016		
			UEP-350-090	B2	.065	.016		
	Linearity	± 0.2%	S/AEP-500-300	E1	.250	.012	.470	.150
			S/UEP-350-060	E2	.035	.016	.230	.150
		S/UEP-350-090	E2	.065	.016	.260	.150	
<b>F</b>	G.F.	+ 140	AFP-500-090	B1	.060	.007		
	TCR	+ 10%	AFP-350-090	B1	.060	.007		
	TCGF	- 11%	UFP-750-090	B2	.065	.016		
	Linearity	± 0.2%	S/AFP-500-090	E1	.060	.007	.260	.150
			S/UFP-750-090	E2	.065	.016	.260	.150
<b>G</b>	G.F.	+ 155	AGP-350-090	B1	.060	.010		
	TCR	+ 18%	AGP-500-090	B1	.060	.010		
	TCGF	- 13%	AGP-1000-300	B1	.250	.012		
			UGP-1000-060	B2	.035	.016		
	Linearity	± 0.2%	UGP-1000-090	B2	.065	.016		
			S/AGP-1000-300	E1	.250	.012	.470	.150
		S/UGP-1000-060	E2	.035	.016	.230	.150	
		S/UGP-1000-090	E2	.065	.016	.260	.150	
<b>H</b>	G.F.	+ 175	AHP-10000-220	B1	.170	.010		
	TCR	+45%	AHP-10000-300	B1	.250	.012		
	TCGF	-23%	UHP-5000-060	B2	.0175	.016		
	Linearity	±0.2%	S/AHP-10000-220	E1	.170	.010	.390	.150
			S/AHP-10000-300	E1	.250	.012	.470	.150
		S/UHP-5000-060	E2	.0175	.016	.230	.150	

Nominal Gage Resistance (Ω) Indicated in Red

#### DEFINITIONS:

G.F. is gage factor =

$$\frac{\Delta R / R_0}{\Delta L / L}$$

Actual value within ±5% of nominal shown given at 70°F

TCR is temp. coefficient of resistance in percent per 100°F

TCGF is temp. coefficient of gage factor in percent per 100°F

Linearity is stated as best fit over ± 1000 microstrain

Note: Dimensions are in inches. All dimensions nominal. Continuous development and refinement of our products may result in specification changes without notice. (G) Copyright © 2014 Kulite Semiconductor Products, Inc. All Rights Reserved. Kulite miniature pressure transducers are intended for use in test and research and development programs and are not necessarily designed to be used in production applications. For products designed to be used in production programs, please consult the factory.