

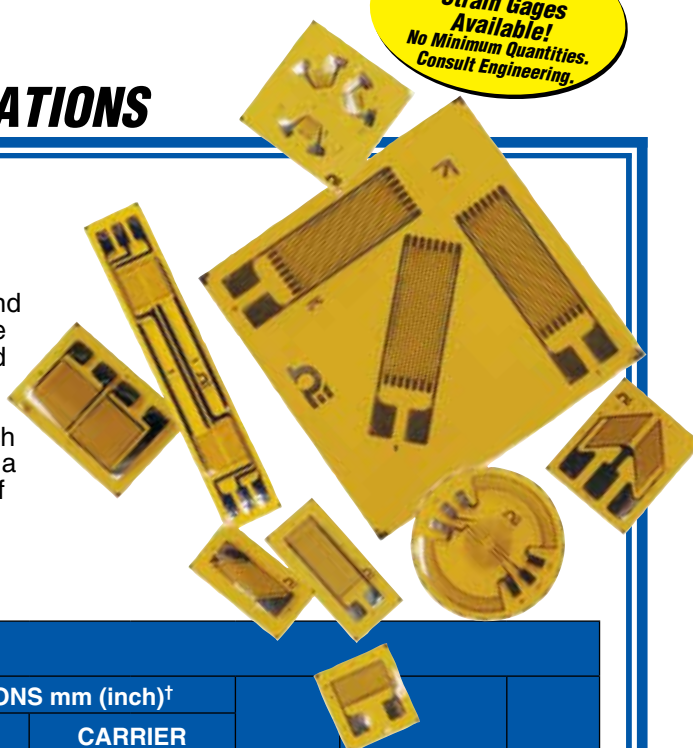
# GENERAL PURPOSE STRAIN GAGES

## FOR STATIC AND DYNAMIC APPLICATIONS





**Custom-Designed  
Strain Gages  
Available!**  
No Minimum Quantities.  
Consult Engineering.

- ✓ Very Flexible, Mechanically Strong
- ✓ Small Bending Radius
- ✓ Broad Temperature Range
- ✓ Ribbon Leads, Solder Pads, or Wire Lead Connections
- ✓ Clear Alignment Marks
- ✓ Affix with Cold or Hot Curing Adhesives

OMEGA® strain gages are available in a variety of models to cover most strain measurement applications. Their rugged construction and flexibility make them suitable for highly accurate static and dynamic measurement. The measuring grid is formed by etching constantan foil, which is then completely sealed in a carrier medium composed of polyimide film.



### To Order

GAGE PATTERN Leads not shown	MODEL NO. Pkg of 10	NOM. RESISTANCE (Ω)	DIMENSIONS mm (inch) <sup>†</sup>				MAX V* (Vrms)	TERMINATION	TEMP COMP
			GRID		CARRIER				
			A	B	C	D			
Shown actual size 4.70 mm 	SGD-1.5/120-LY11	120	1.50 (0.059)	1.20 (0.047)	4.70 (0.185)	3.40 (0.134)	4	Ribbon Leads	ST
	SGD-1.5/120-LY13	120	1.50 (0.059)	1.20 (0.047)	4.70 (0.185)	3.40 (0.134)	5.5	Ribbon Leads	AL
	SGD-1.5/120-LY41	120	1.50 (0.059)	1.20 (0.047)	4.70 (0.185)	3.40 (0.134)	4	Solder Pads	ST
	SGD-1.5/120-LY43	120	1.50 (0.059)	1.20 (0.047)	4.70 (0.185)	3.40 (0.134)	5.5	Solder Pads	AL
Shown actual size 7.60 mm 	SGD-2/350-LY11	350	2.00 (0.079)	2.50 (0.098)	7.60 (0.299)	5.80 (0.228)	4.5	Ribbon Leads	ST
	SGD-2/350-LY13	350	2.00 (0.079)	2.50 (0.098)	7.60 (0.299)	5.80 (0.228)	6	Ribbon Leads	AL
	SGD-2/350-LY41	350	2.00 (0.079)	2.50 (0.098)	7.60 (0.299)	5.80 (0.228)	4.5	Solder Pads	ST
	SGD-2/350-LY43	350	2.00 (0.079)	2.50 (0.098)	7.60 (0.299)	5.80 (0.228)	6	Solder Pads	AL
Shown actual size 7.10 mm 	SGD-2D/350-LY11	350	1.90 (0.075)	4.80 (0.189)	7.10 (0.280)	6.60 (0.260)	9	Ribbon Leads	ST
	SGD-2D/350-LY13	350	1.90 (0.075)	4.80 (0.189)	7.10 (0.280)	6.60 (0.260)	12	Ribbon Leads	AL
	SGD-2D/350-LY41	350	1.90 (0.075)	4.80 (0.189)	7.10 (0.280)	6.60 (0.260)	9	Solder Pads	ST
	SGD-2D/350-LY43	350	1.90 (0.075)	4.80 (0.189)	7.10 (0.280)	6.60 (0.260)	12	Solder Pads	AL
Shown actual size 7.00 mm 	SGD-3/350-LY11	350	3.20 (0.126)	2.50 (0.098)	7.00 (0.276)	4.00 (0.157)	12	Ribbon Leads	ST
	SGD-3/350-LY13	350	3.20 (0.126)	2.50 (0.098)	7.00 (0.276)	4.00 (0.157)	17	Ribbon Leads	AL
	SGD-3/350-LY41	350	3.20 (0.126)	2.50 (0.098)	7.00 (0.276)	4.00 (0.157)	12	Solder Pads	ST
	SGD-3/350-LY43	350	3.20 (0.126)	2.50 (0.098)	7.00 (0.276)	4.00 (0.157)	17	Solder Pads	AL

<sup>†</sup>For dimensions key, visit us online.

\* Maximum permitted bridge energizing voltage (Vrms).

\*\* For accessory terminal pads, visit us online.

Ordering Example: SGD-3/350-LY11, 3.2 mm grid, 350 Ω nominal-resistance strain gage.

**NOTE**  
ST = Steel  
AL = Aluminum

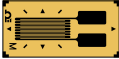



STRAIN GAGES

# GENERAL PURPOSE STRAIN GAGES

## FOR STATIC AND DYNAMIC APPLICATIONS

Custom-Designed  
Strain Gages  
Available!  
No Minimum Quantities.  
Consult Engineering.

### To Order

GAGE PATTERN Leads not shown	MODEL NO. Pkg of 10	NOM. RESIS- TANCE ( $\Omega$ )	DIMENSIONS mm (inch) <sup>†</sup>				MAX V* (Vrms)	TERMINATION	TEMP COMP
			GRID		CARRIER				
			A	B	C	D			
Shown actual size 7.80 mm 	SGD-3/120-LY11	120	3.00 (0.118)	1.50 (0.059)	7.80 (0.307)	3.80 (0.150)	4	Ribbon Leads	ST
	SGD-3/120-LY13	120	3.00 (0.118)	1.50 (0.059)	7.80 (0.307)	3.80 (0.150)	5.5	Ribbon Leads	AL
	SGD-3/120-LY41	120	3.00 (0.118)	1.50 (0.059)	7.80 (0.307)	3.80 (0.150)	4	Solder Pads	ST
	SGD-3/120-LY43	120	3.00 (0.118)	1.50 (0.059)	7.80 (0.307)	3.80 (0.150)	5.5	Solder Pads	AL
Shown actual size 6.60 mm 	SGD-3S/120-LY11	120	3.00 (0.118)	1.70 (0.067)	6.60 (0.260)	3.30 (0.130)	4.5	Ribbon Leads	ST
	SGD-3S/120-LY13	120	3.00 (0.118)	1.70 (0.067)	6.60 (0.260)	3.30 (0.130)	6	Ribbon Leads	AL
	SGD-3S/120-LY41	120	3.00 (0.118)	1.70 (0.067)	6.60 (0.260)	3.30 (0.130)	4.5	Solder Pads	ST
	SGD-3S/120-LY43	120	3.00 (0.118)	1.70 (0.067)	6.60 (0.260)	3.30 (0.130)	6	Solder Pads	AL
Shown actual size 7.90 mm 	SGD-4/120-LY11	120	3.80 (0.150)	5.70 (0.224)	7.90 (0.311)	7.10 (0.280)	9	Ribbon Leads	ST
	SGD-4/120-LY13	120	3.80 (0.150)	5.70 (0.224)	7.90 (0.311)	7.10 (0.280)	12	Ribbon Leads	AL
	SGD-4/120-LY41	120	3.80 (0.150)	5.70 (0.224)	7.90 (0.311)	7.10 (0.280)	9	Solder Pads	ST
	SGD-4/120-LY43	120	3.80 (0.150)	5.70 (0.224)	7.90 (0.311)	7.10 (0.280)	12	Solder Pads	AL
Shown actual size 9.80 mm 	SGD-5/350-LY11	350	4.50 (0.177)	3.20 (0.126)	9.80 (0.386)	5.20 (0.205)	12	Ribbon Leads	ST
	SGD-5/350-LY13	350	4.50 (0.177)	3.20 (0.126)	9.80 (0.386)	5.20 (0.205)	17	Ribbon Leads	AL
	SGD-5/350-LY41	350	4.50 (0.177)	3.20 (0.126)	9.80 (0.386)	5.20 (0.205)	12	Solder Pads	ST
	SGD-5/350-LY43	350	4.50 (0.177)	3.20 (0.126)	9.80 (0.386)	5.20 (0.205)	17	Solder Pads	AL

<sup>†</sup>For dimensions key, visit us online.

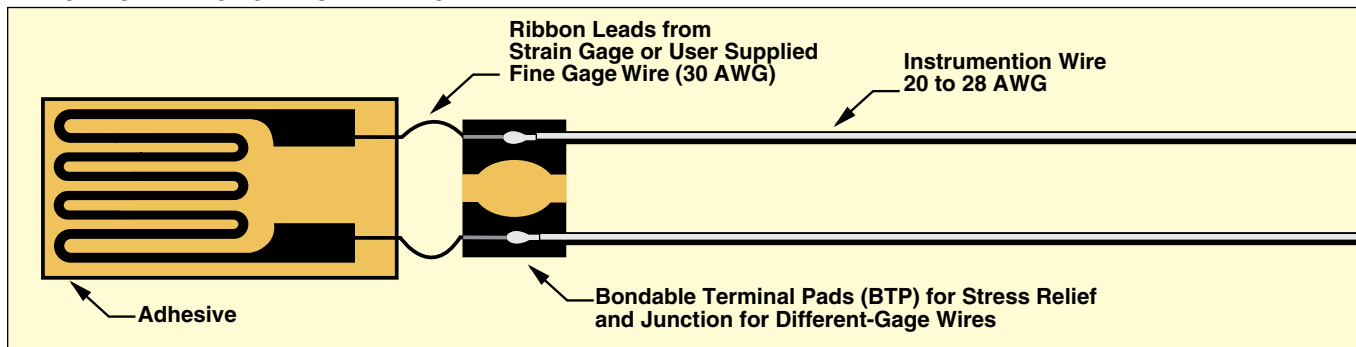
\* Maximum permitted bridge energizing voltage (Vrms).

\*\* For accessory terminal pads, visit us online.

Ordering Example: SGD-4/120-LY13, 3.8 mm grid, 120  $\Omega$  nominal-resistance strain gage.

**NOTE**  
ST = Steel  
AL = Aluminum




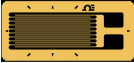
### TYPICAL STRAIN GAGE INSTALLATION



# GENERAL PURPOSE STRAIN GAGES FOR STATIC AND DYNAMIC APPLICATIONS

Custom-Designed  
Strain Gages  
Available!  
No Minimum Quantities.  
Consult Engineering.

## To Order

GAGE PATTERN Leads not shown	MODEL NO. Pkg of 10	NOM. RESIS- TANCE ( $\Omega$ )	DIMENSIONS mm (inch) <sup>†</sup>				MAX V* (Vrms)	TERMINATION	TEMP COMP
			GRID		CARRIER				
			A	B	C	D			
Shown actual size, 11.4 mm 	SGD-6/120-LY11	120	6.50 (0.256)	3.10 (0.122)	11.40 (0.449)	5.10 (0.201)	9	Ribbon Leads	ST
	SGD-6/120-LY13	120	6.50 (0.256)	3.10 (0.122)	11.40 (0.449)	5.10 (0.201)	12	Ribbon Leads	AL
	SGD-6/120-LY41	120	6.50 (0.256)	3.10 (0.122)	11.40 (0.449)	5.10 (0.201)	9	Solder Pads	ST
	SGD-6/120-LY43	120	6.50 (0.256)	3.10 (0.122)	11.40 (0.449)	5.10 (0.201)	12	Solder Pads	AL
Shown actual size, 11.4 mm 	SGD-7/350-LY11	350	6.50 (0.256)	3.10 (0.122)	11.40 (0.449)	5.10 (0.201)	15	Ribbon Leads	ST
	SGD-7/350-LY13	350	6.50 (0.256)	3.10 (0.122)	11.40 (0.449)	5.10 (0.201)	20	Ribbon Leads	AL
	SGD-7/350-LY41	350	6.50 (0.256)	3.10 (0.122)	11.40 (0.449)	5.10 (0.201)	15	Solder Pads	ST
	SGD-7/350-LY43	350	6.50 (0.256)	3.10 (0.122)	11.40 (0.449)	5.10 (0.201)	20	Solder Pads	AL
Shown actual size, 11.3 mm 	SGD-7/1000-LY11	1000	7.00 (0.276)	3.60 (0.142)	11.80 (0.465)	5.60 (0.220)	27	Ribbon Leads	ST
	SGD-7/1000-LY13	1000	7.00 (0.276)	3.60 (0.142)	11.80 (0.465)	5.60 (0.220)	37	Ribbon Leads	AL
	SGD-7/1000-LY41	1000	7.00 (0.276)	3.60 (0.142)	11.80 (0.465)	5.60 (0.220)	27	Solder Pads	ST
	SGD-7/1000-LY43	1000	7.00 (0.276)	3.60 (0.142)	11.80 (0.465)	5.60 (0.220)	37	Solder Pads	AL
Shown actual size, 17.7 mm 	SGD-10/120-LY11	120	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	14	Ribbon Leads	ST
	SGD-10/120-LY13	120	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	19	Ribbon Leads	AL
	SGD-10/120-LY41	120	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	14	Solder Pads	ST
	SGD-10/120-LY43	120	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	19	Solder Pads	AL

<sup>†</sup>For dimensions key, visit us online.

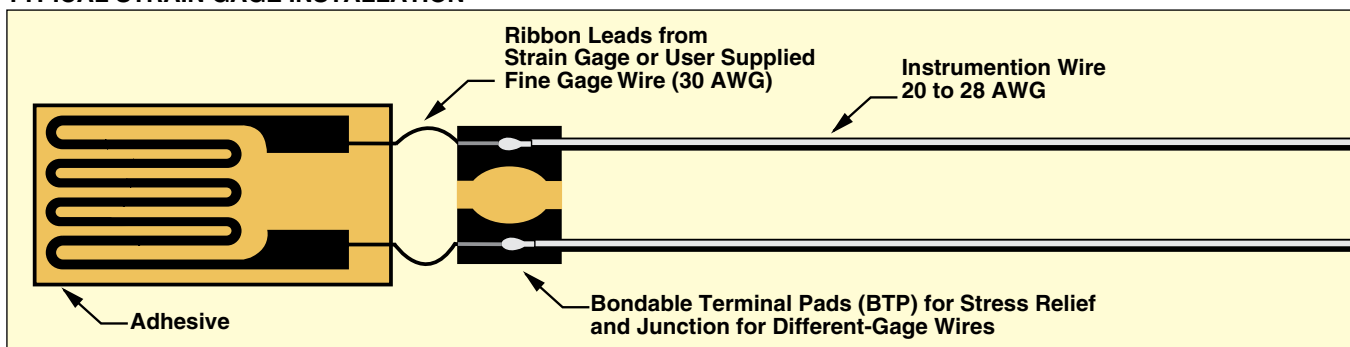
\* Maximum permitted bridge energizing voltage (Vrms).

\*\* For accessory terminal pads, visit us online.

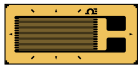
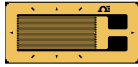
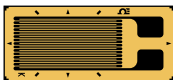
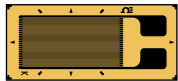
Ordering Example: SGD-6/120-LY13, 6.5 mm grid, 120  $\Omega$  nominal-resistance strain gage.

**NOTE**  
ST = Steel  
AL = Aluminum

## TYPICAL STRAIN GAGE INSTALLATION



## To Order

GAGE PATTERN Leads not shown	MODEL NO. Pkg of 10	NOM. RESISTANCE ( $\Omega$ )	DIMENSIONS mm (inch) <sup>†</sup>				MAX V* (Vrms)	TERMINATION	TEMP COMP
			GRID		CARRIER				
			A	B	C	D			
Shown actual size, 17.7 mm 	SGD-10/350-LY11	350	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	22	Ribbon Leads	ST
	SGD-10/350-LY13	350	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	32	Ribbon Leads	AL
	SGD-10/350-LY41	350	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	22	Solder Pads	ST
	SGD-10/350-LY43	350	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	32	Solder Pads	AL
Shown actual size, 17.7 mm 	SGD-10/1000-LY11	1000	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	40	Ribbon Leads	ST
	SGD-10/1000-LY13	1000	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	55	Ribbon Leads	AL
	SGD-10/1000-LY41	1000	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	40	Solder Pads	ST
	SGD-10/1000-LY43	1000	10.00 (0.394)	4.90 (0.193)	17.70 (0.697)	8.00 (0.315)	55	Solder Pads	AL
Shown actual size, 22.7 mm 	SGD-13/350-LY11	350	13.00 (0.512)	7.20 (0.283)	22.70 (0.894)	10.00 (0.394)	30	Ribbon Leads	ST
	SGD-13/350-LY13	350	13.00 (0.512)	7.20 (0.283)	22.70 (0.894)	10.00 (0.394)	40	Ribbon Leads	AL
	SGD-13/350-LY41	350	13.00 (0.512)	7.20 (0.283)	22.70 (0.894)	10.00 (0.394)	30	Solder Pads	ST
	SGD-13/350-LY43	350	13.00 (0.512)	7.20 (0.283)	22.70 (0.894)	10.00 (0.394)	40	Solder Pads	AL
Shown actual size, 22.7 mm 	SGD-13/1000-LY11	1000	13.00 (0.512)	7.20 (0.283)	22.70 (0.894)	10.00 (0.394)	55	Ribbon Leads	ST
	SGD-13/1000-LY13	1000	13.00 (0.512)	7.20 (0.283)	22.70 (0.894)	10.00 (0.394)	75	Ribbon Leads	AL
	SGD-13/1000-LY41	1000	13.00 (0.512)	7.20 (0.283)	22.70 (0.894)	10.00 (0.394)	55	Solder Pads	ST
	SGD-13/1000-LY43	1000	13.00 (0.512)	7.20 (0.283)	22.70 (0.894)	10.00 (0.394)	75	Solder Pads	AL

<sup>†</sup>For dimensions key, visit us online.

\* Maximum permitted bridge energizing voltage (Vrms).

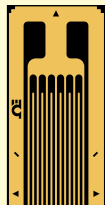
\*\* For accessory terminal pads, visit us online.

Ordering Example: SGD-13/350-LY13, 13 mm grid, 350  $\Omega$  nominal-resistance strain gage.

**NOTE**  
ST = Steel  
AL = Aluminum

## Extra-long for inhomogeneous material

## To Order

GAGE PATTERN Leads not shown	MODEL NO. Pkg of 5	NOM. RESISTANCE ( $\Omega$ )	DIMENSIONS mm (inch) <sup>†</sup>				MAX V* (Vrms)	TERMINATION	TEMP COMP
			GRID		CARRIER				
			A	B	C	D			
	SGD-30/120-LY40	350	25.00 (0.984)	8.00 (0.315)	40.00 (1.575)	12.00 (0.472)	12	Solder Pads	UNC
	SGD-30/350-LY40	350	30.00 (0.472)	3.00 (0.118)	36.00 (1.417)	5.00 (0.197)	14	Solder Pads	UNC
	SGD-50/120-LY40	350	50.00 (1.969)	4.30 (0.169)	60.00 (2.362)	9.00 (0.354)	12	Solder Pads	UNC
	SGD-150/240-LY40	350	150.00 (5.906)	5.00 (0.197)	165.00 (6.496)	9.00 (0.354)	35	Solder Pads	UNC

<sup>†</sup>For dimensions key, visit us online.

\* Maximum permitted bridge energizing voltage (Vrms).

\*\* For accessory terminal pads, visit us online.

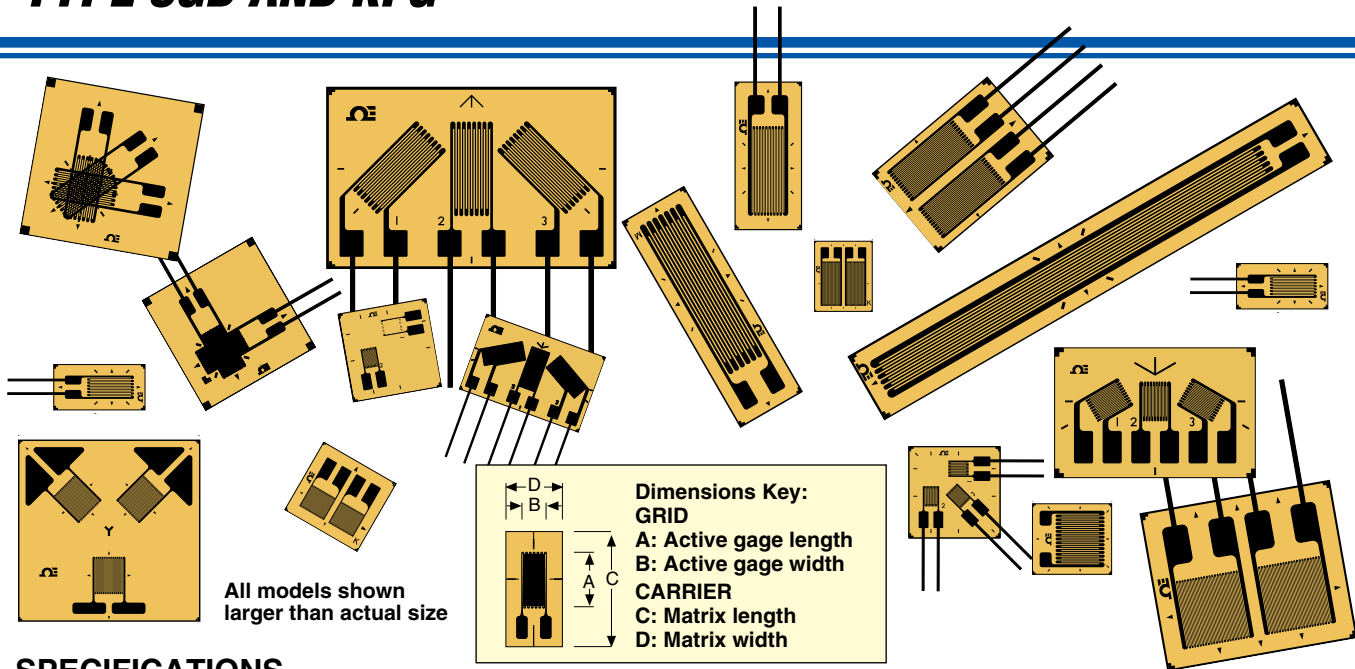
Ordering Example: SGD-30/120-LY40, 120  $\Omega$  nominal-resistance strain gage.

**NOTE** UNC = Uncompensated

# OMEGA® STRAIN GAGE

## SPECIFICATIONS CHART

### TYPE SGD AND KFG



## SPECIFICATIONS

	SGD SERIES	KFG SERIES—PRE-WIRED
Foil Measuring Grid	Constantan foil 5 microns thick	Constantan foil 6 microns thick
Carrier	Polyimide	Kapton®
Substrate Thickness	20 microns	15 microns
Cover Thickness	25 microns	9 microns
Connection Dimensions: mm (inch)	Solder pads or ribbon leads, tinned copper flat wire 30 L x 0.1 D x 0.3 mm W (1.2 x 0.004 x 0.012")	Pre-wired, 2 or 3 leads 27 AWG strand polyvinyl insulation 1 x 2 mm (0.04 x 0.08")
Nominal Resistance	Stated in "To Order" box	120 ±0.4 or 350 Ω
Resistance Tolerance Per Package	±0.15% to ±0.5% depending on gage spec	0.3%
Gage Factor (Actual Value Printed on Each Package)	2.0 ±5%	2.10 ±10%
Gage Factor Tolerance Per Package	1.00%	1.00%
<b>THERMAL PROPERTIES</b>		
Reference Temperature	23°C (73°F)	23°C (73°F)
<b>SERVICE TEMPERATURE</b>		
Static Measurements	-75 to 200°C (-100 to 392°F)	-20 to 100°C (-4 to 212°F)
Dynamic Measurements	-75 to 200°C (-100 to 392°F)	-20 to 100°C (-4 to 212°F)
<b>TEMPERATURE CHARACTERISTICS</b>		
Steel (and Certain Stainless Steels)	11 ppm/°C (6.1 ppm/°F)	10.8 ppm/°C (6 ppm/°F)
Aluminum	23 ppm/°C (12.8 ppm/°F)	—
Uncompensated	±20 ppm/°C (11.1 ppm/°F)	—
Temperature Compensated Range	-5 to 120°C (5 to 248°F)	10 to 80°C (50 to 176°F)
Tolerance of Temp Compensation	2 ppm/°C (1.0 ppm/°F)	1 ppm/°C (0.5 ppm/°F)
<b>MECHANICAL PROPERTIES</b>		
Maximum Strain	3% or 30,000 microstrain	5% or 50,000 microstrain
Hysteresis	Negligible	Negligible
Fatigue (at ±1500 microstrain)	>10,000,000 cycles	>10,000,000 cycles
Smallest Bending Radius	3 mm (1/8")	3 mm (1/8")
Transverse Sensitivity	—	Stated on each package