

# High-Voltage Resistors

## Series SGP/OGP • U.S. Patent-No. 4,859,981

TC of 80 ppm/°C combined with precision tolerances (0.1%-10%) and wide ohmic range (100 Ω – 10 GΩ)

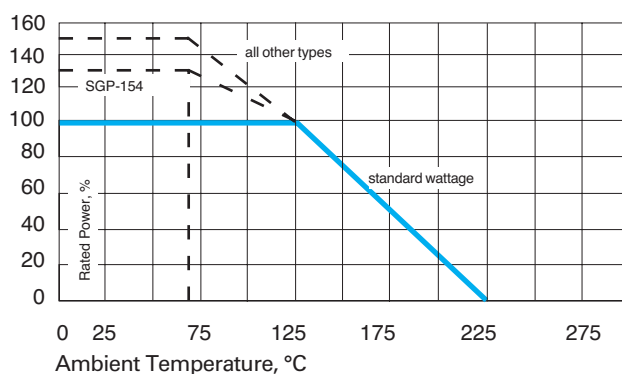
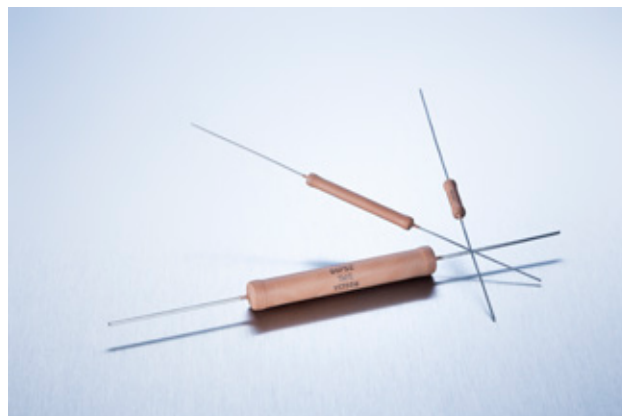
The SGP series meets the requirements of high resistance values in combination with very high voltage. It is produced using EBG's patented Non-Inductive Design complete with in-process digital trimming to exact value. This series employs our special METOXFILM, which demonstrates excellent stability while covering resistance ranges from 100 Ω to 10 GΩ – all at high operating temperatures of up to 225°C. Power ratings and voltage ratings are for continuous operation and have all been pretested for steady-state performance as well as momentary overload conditions.

### General Characteristics

- Resistance values: up to 10 GΩ
- Resistance tolerance: from ± 0.1% to ± 10%
- Standard Temperature coefficient: 80ppm/°C (others on request)
- Maximum continuous operating voltage: 48,000 V
- Load life stability: typical ±0.02% per 1,000 hours
- Maximum operating temperature: +225°C

### Specifications

- Resistance tolerance: standard: ±1% to ±10% (±1% to ±10% above 1 GΩ) (tolerances down to ±0,1% upon special request)
- Temperature coefficient: standard ±80 ppm/°C from -15°C to +105°C, referenced to +25°C (other TCR or other temperatures on request)
- Voltage coefficient: see page 7
- Dielectric strength: 1,000 V DC max. (25°C, 75% relative humidity)
- Insulation resistance: 10 GΩ min.
- Overload/overvoltage: 5 times rated power 125°C with applied voltage not to exceed 1.5 times maximum continuous operating voltage for 5 seconds. ΔR 0.5% max.
- Load life: 1,000 hours at 125°C and rated power, components with 1% tol. ΔR 0.2% max., extended range ("S") ΔR = 0.5% max.
- Moisture resistance: MIL-Std-202, Method 106, ΔR 0.4% max.
- Thermal shock: MIL-Std-202, Method 107, Cond. C, ΔR 0.25% max.
- Encapsulation: silicone conformal
- Lead material: OFHC copper, tin-plated
- Standard storage conditions: 0 to 85°C at 80% RH max. for min. 12 months. For different conditions please contact your local EBG representative!



Voltages up to 60% higher than the values listed may be specially ordered by adding "S" to the model designation.

EBG's special patented (U.S. Patent-No. 4,859,981) Non-Inductive Design offers an outstanding advantage over other techniques. The design incorporates a unique method of DIGITAL TRIMMING to value. Other less desirable methods include an "analog" method of abrading and removing the resistive material, which frequently results in a weak section. EBG's patented process avoids this potential problem.

\*\* Our resistors are designed for operation in air and non-aggressive atmospheres. For special applications (i.e., oil, casting, molding, SF6, etc.), please contact our nearest EBG representative. The above spec sheet features our standard products. For further options, please contact our local EBG representative or contact us directly. For updated information, please visit our website!

Model no.	Watt- age 25°C	Watt- age 75°C	Watt- age 125°C	Max. cont. oper. V (kV)	Max. KV *S**	Resistance F (=1%)		s-Resistance max. (2% Tol.)	Dimensions in millimeters Dimensions in inches		
						Min.	Max.		A ±0.50 ±0.02	B ±0.50 ±0.02	C ±0.50 ±0.002
OGP 13	1.0	1.0	0.60	1.5	2.4	100	50M	500M	13.30 0.524	4.20 0.165	0.60 0.024
OGP 20	1.5	1.5	1.00	2.0	3.2	200	100M	1G	19.70 0.776	4.20 0.165	0.60 0.024
OGP 26	1.9	1.9	1.25	4.0	6.4	300	150M	2G	26.20 1.031	4.20 0.165	0.60 0.024
OGP 30	2.5	2.5	1.50	5.0	8.0	500	250M	3G	32.30 1.272	4.20 0.165	0.60 0.024
OGP 39	3.0	3.0	2.00	6.0	9.6	700	300M	5G	39.40 1.551	4.20 0.165	0.60 0.024
OGP 52	3.3	3.3	2.50	10.0	12.0	400	2G	-	49.50 1.949	4.20 0.165	0.60 0.024
SGP 20	2.5	2.5	1.50	3.0	4.8	200	250M	1G	20.20 0.795	8.20 0.323	1.00 0.040
SGP 26	3.7	3.7	2.50	4.0	6.4	250	300M	1G	26.90 1.059	8.20 0.323	1.00 0.040
SGP 32	4.5	4.5	3.00	5.0	8.0	300	400M	1.5G	33.00 1.3	8.20 0.323	1.00 0.040
SGP 39	5.2	5.2	3.50	8.0	12.8	400	500M	1.5G	39.50 1.555	8.20 0.323	1.00 0.040
SGP 52	7.5	7.5	5.00	10.0	16.0	500	750M	2.5G	52.10 2.051	8.20 0.323	1.00 0.040
SGP 78	11	11	7.50	15.0	24.0	900	1G	4G	77.70 3.059	8.20 0.323	1.00 0.040
SGP 103	12	12	8.00	20.0	32.0	1K2	1G	2G	102.90 4.051	8.20 0.323	1.00 0.040
SGP 124	15	15	10.00	25.0	40.0	1K5	1G	8G	123.70 4.870	8.20 0.323	1.00 0.040
SGP 148	30	30	20.00	45.0	-	10K	3G	10G	148.00 5.83	16.00 0.63	- -
SGP 154	20	20	15.00	30.0	48.0	2K0	2G	10G	153.70 6.051	8.20 0.323	1.00 0.040

The above spec. sheet features our standard products. For further options, please contact our local EBG representative or contact us directly. For updated information, please visit our website!