

# Series SSP / OSP

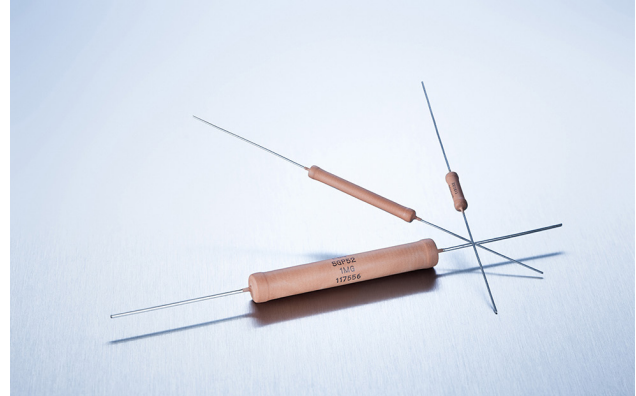
Power- and High-Voltage Resistors with high maximum temperature operation, TC of  $\pm 50$  ppm/°C

A Miba Group Company

The SSP series meets the requirements of power ratings of up to 40 W while at the same time offering voltage ratings of up to 6,000 V. These Power Resistors cover a wide ohmic value range and operate at up to 275°C in axial lead construction.

## Features

- up to 40 kV operating voltage
- Non-Inductive design
- ROHS compliant
- Full power and voltage ratings (derating not required)



## Technical Specifications

<b>Resistance value</b>	0.1 $\Omega$ $\leq$ 30 M $\Omega$ (see model specifications)
<b>Resistance tolerance</b>	$\pm 1$ % to $\pm 10$ % standard $\pm 0.1$ % to $\pm 0.5$ % on special request for limited ohmic values** - "L-Version"
<b>Temperature coefficient</b>	$\geq 10 \Omega$ : 50 ppm/°C (referenced to 25°C, $\Delta R$ taken at -15°C and +85°C) 25 ppm/°C on special request for limited ohmic values, ask for details
<b>Max. operating temperature</b>	+ 275°C
<b>Dielectric strength</b>	1,000 V DC
<b>Insulation resistance</b>	10 G $\Omega$ min. at 1,000 V DC
<b>Overload / overvoltage</b>	5x rated power with applied voltage not to exceed 1.5x maximum continuous operating voltage for 5 sec. $\Delta R$ 0.5 % max. or 0.5 $\Omega$ max. whichever is greater (not applicable for SSP-148!)
<b>Load Life</b>	1,000 hours at rated power, $\Delta R$ 0.5 % max. or 0.5 $\Omega$ max., whichever is greater
<b>Thermal shock</b>	MIL-Std-202, method 107, Cond. C, $\Delta R$ 0.5 % max. or 0.5 $\Omega$ max., whichever is greater
<b>Encapsulation</b>	<b>standard coating: silicone conformal</b> we recommend 2x polyimide coating for use in oil and potted applications (ask for details) other coatings available on special request
<b>Lead material</b>	OFHC copper, tin-plated
<b>Other terminals available</b>	screw end caps [6/32", M4 (torque max. 1 Nm), customer-specific], golden leads with diameter 0,8 mm available for SSP series (ask for details)
<b>Weight</b>	depending on model no. (ask for details)

To accomplish this objective of high stability, high value, high voltage and high power in the SSP series, EBG employs a special variation of its METOXFILM formulations. These films are annealed on special ceramic bodies at temperatures above 1,400°F/800°C and become an inherent part of the ceramic surface, which brings about their unusual performance characteristics. As a result of EBG's unique Non-Inductive patented process, these resistors are ideally suited for high-frequency applications and result in less "ringing" with minimum distortion of the signals and faster settling times.

### F\*: enforced cooling

- Resistor in open air position, air flow  $> 1.5$  m/sec. at  $\leq 25^\circ\text{C}$  ambient temperature
- Resistor in case, air flow  $> 2$  m/sec. at  $\leq 25^\circ\text{C}$  ambient temperature

### \*\* Version L:

Resistance tolerances down to  $\pm 0.5$  % or  $\pm 0.1$  %, lower max. power (like SGP Series)

## Model Specifications

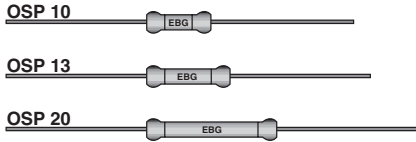
Model no.	Wattage	Max. continuous operating voltage	Resistance values		Dimensions in millimeters (inches)		
			Min. $\Omega$	Max. $\Omega$	A $\begin{smallmatrix} \pm 0.50 \\ \pm 0.02 \end{smallmatrix}$	B $\begin{smallmatrix} \pm 0.50 \\ \pm 0.02 \end{smallmatrix}$	C $\begin{smallmatrix} \pm 0.05 \\ \pm 0.002 \end{smallmatrix}$
OSP 10	2.00	1,000	0.1	10M	10.90 (0.429)	4.20 (0.165)	0.60 (0.024)
OSP 13	2.40	1,000	0.1	12M	13.70 (0.539)	4.20 (0.165)	0.60 (0.024)
OSP 20	3.00	1,000	0.1	15M	19.70 (0.776)	4.20 (0.165)	0.60 (0.024)
SSP 20	4.00	800	0.1	15M	20.20 (0.795)	8.20 (0.323)	1.00 (0.040)
SSP 26	6.00	2,000	0.1	15M	26.90 (1.059)	8.20 (0.323)	1.00 (0.040)
SSP 32	8.00	4,500	0.1	20M	33.00 (1.3)	8.20 (0.323)	1.00 (0.040)
SSP 32 F*	10.00	4,500	1	10M	33.00 (1.3)	8.20 (0.323)	1.00 (0.040)
SSP 39	10.00	4,500	0.1	20M	39.50 (1.555)	8.20 (0.323)	1.00 (0.040)
SSP 52	12.50	6,000	0.1	30M	52.10 (2.051)	8.20 (0.323)	1.00 (0.040)
SSP 52 F*	15.00	6,000	1	30M	52.10 (2.051)	8.20 (0.323)	1.00 (0.040)
SSP 148	40.00	6,000	1	100K	148.00 (5.83)	16.00 (0.63)	M4

The above spec. sheet features our standard products. For further options please contact our local EBG representative or contact us directly.

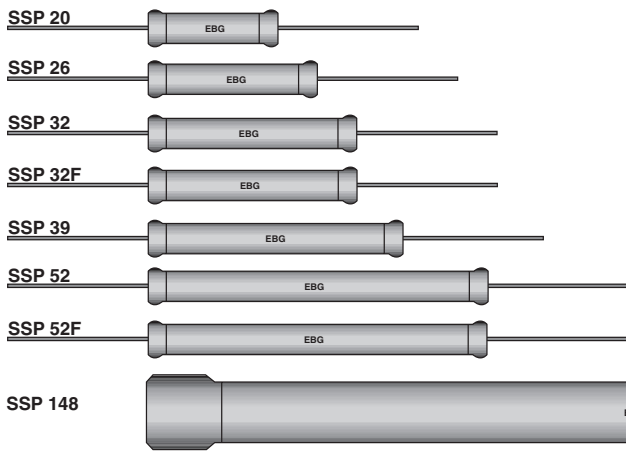
# Series SSP / OSP



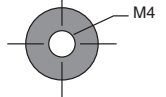
## OSP series overview



## SSP series overview



others on request



## How to make a request

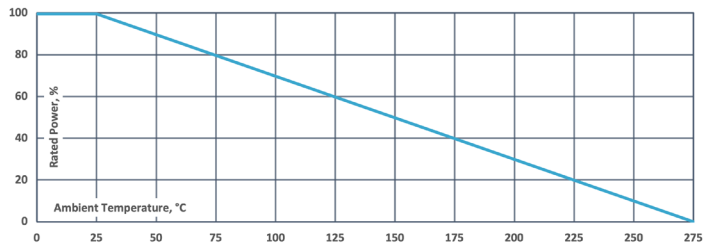
Model no.\_Ohmic Value\_Tolerance\_TCR

For example:

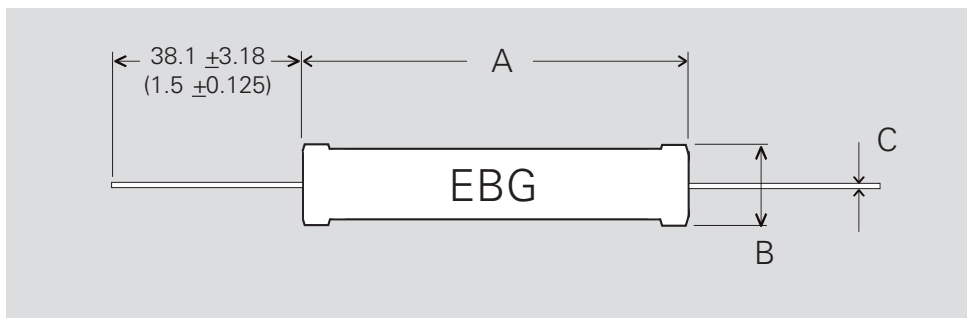
SSP-52 68R 5% 50ppm or OSP-10 150K 10% 50ppm

Example for low tolerance

SSP-32-L 10R04 0.1% 50ppm



## Dimensions in mm [inches]



The above spec. sheet features our standard products. For further options please contact our local EBG representative or contact us directly.

[sales@ebg-resistors.com](mailto:sales@ebg-resistors.com) · [sales@ebg-us.com](mailto:sales@ebg-us.com)

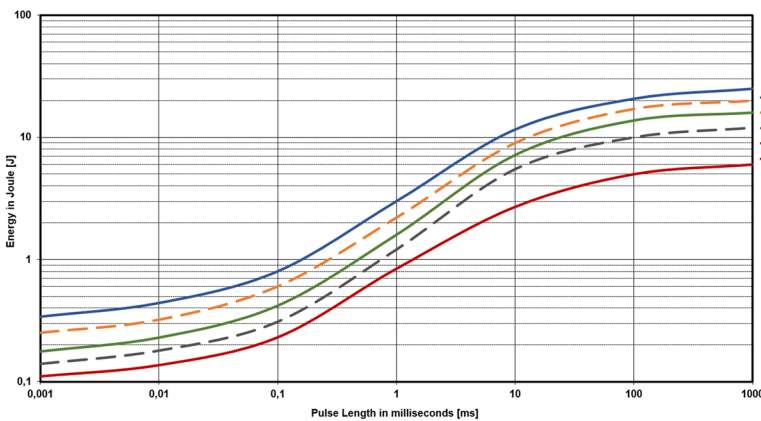
### Pulse Energy Curve (typical rating for SSP series)

Note: These energy values are reference values → depending on ohmic value e.g. 1 Ω to 10 Ω and used resistive paste, a variation in max. energy load capability is possible

#### Test procedure

Every test resistor was mounted with brackets in free air at +25°C ambient temperature

- The test time of each tested resistor: 10min.
- Break time between two pulses: 1sec.
- To determine good / defect parts the ohmic value was measured before and after tests: a change of tolerance of more than 0.1% means defect



**Description of Pulse Energy Curve**

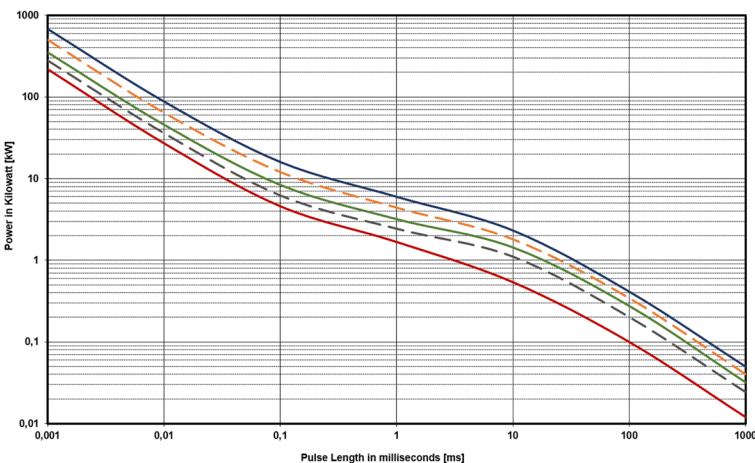
- Shape of pulse = e-function
- Time between two pulses = 1 second
- Pulse length = time constant of 1 tau (1 means ... tau = 1ms)

#### Example

At 1 ms tau the SSP-52 with e.g. 1 Ω to 10 Ω can withstand an energy level of about 3 J, when the pulse pause time is ≥ 1s

### Pulse Power Curve (typical rating for SSP series)

The power curve shows the max. possible power which can be applied for a certain duration. Referring to the same test procedure as described above.



**Description of Pulse Power Curve**

- Shape of pulse = e-function
- Time between two pulses = 1 second
- Pulse length = time constant of 1 tau (1 means ... tau = 1ms)

#### Example

For SSP-52 the time-constant of 1 ms you can apply about 6 kW max., if the time between two such peaks is ≥ 1s

# Disclaimer



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