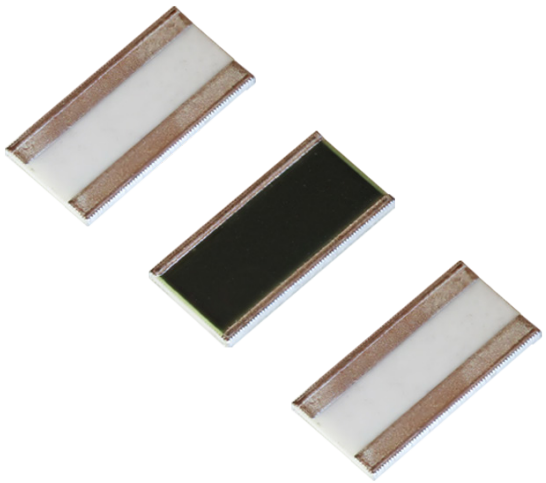
# DURAKOOL®

# SSP Series
## Power Chip SMD Resistors



- Untrimmed for improved pulse power rating
- Surface mount thick film technology
- Power chip resistor up to 3W
- 0.1Ω to 100MΩ Resistance range
- Suitable for high vacuum applications - no organics
- Nickel barrier / matte tin terminations
- Working voltage up to 1.5kV
- Power mode with increased power rating available
- RF Varieties with air abrasive trimming

e3 TÜV ELV RoHS Compliant ✓ 2000/53/EC 2011/65/EC

**Technical Data** — **Table 1**

| Size | 1210 | 1216 | 2010 | 2040 | 2512 | 4020 |
|---|---|---|---|---|---|---|
| Power rating $P_{70}$ (W) ( $P_{155}$ = 0W) | 0.35W | 0.5W | 0.75W (1.0)[2] | 2W (3.0)[2] | 1W (2.0)[2] | 2W (3.0)[2] |
| Working voltage $U_{\_1}$, $U_{eff}$ (V)[1] Standard (trimmed) U (untrimmed, Tol. ≥5%) | 200V 600V | 200V 600V | 250V 900V | 250V 900V | 300V 1200V | 500V 1500V |
| Resistance / Tolerance[3] % / Temperature Coefficient (TCR) ppm˚C[3] (Lower resistance tolerances, TCR & VCR on request & by agreement) | | | | | | |
| 0R1 - <1R ± % ppm/˚C | 5, 10, 20 250 | 5, 10, 20 250 | 5, 10, 20 250 | 5, 10, 20 250 | 5, 10, 20 250 | 5, 10, 20 250 |
| 1R - <10R ± % ppm/˚C | 1, 5, 10, 20 100, 250 | 1, 5, 10, 20 100, 250 | 1, 5, 10, 20 100, 250 | 1, 5, 10, 20 100, 250 | 1, 5, 10, 20 100, 250 | 1, 5, 10, 20 100, 250 |
| 10R - <100R ± % ppm/˚C | 1, 5, 10, 20 100 | 1, 5, 10, 20 100 | 1, 5, 10, 20 100 | 1, 5, 10, 20 100 | 1, 5, 10, 20 100 | 1, 5, 10, 20 100 |
| 100R - <100k ± % ppm/˚C | 1, 5, 10, 20 50, 100 | 1, 5, 10, 20 50, 100 | 1, 5, 10, 20 50, 100 | 1, 5, 10, 20 50, 100 | 0.5, 1, 5, 10, 20 50, 100 | 0.5, 1, 5, 10, 20 50, 100 |
| 100k - <100M ± % ppm/˚C | 1, 5, 10, 20 50, 100 | 1, 5, 10, 20 50, 100 | 1, 5, 10, 20 25, 50, 100 | 1, 5, 10, 20 25, 50, 100 | SXV Series | SXV Series |

[1]) Continuous operating voltage ($U_{\_}$, $U_{eff}$): $V \leq \sqrt{(P*R)}$ or max. working voltage (the lower value)

[2]) At continuous power dissipation the dimensions of solder-pads must secure sufficient heat removal. Power Mode 1W at 2010, 2W at 2512 adn 3W at 4020 and 2040 sizes. The temperature of the resistor element is higher than the standard model. Higher power rating requires adequte heat removal (e.g. increased solder pads or Cu-thicknesses). The user has to ensure solder joints will not run over their load limit. The resistor must not exceed the specified operating temperature range.

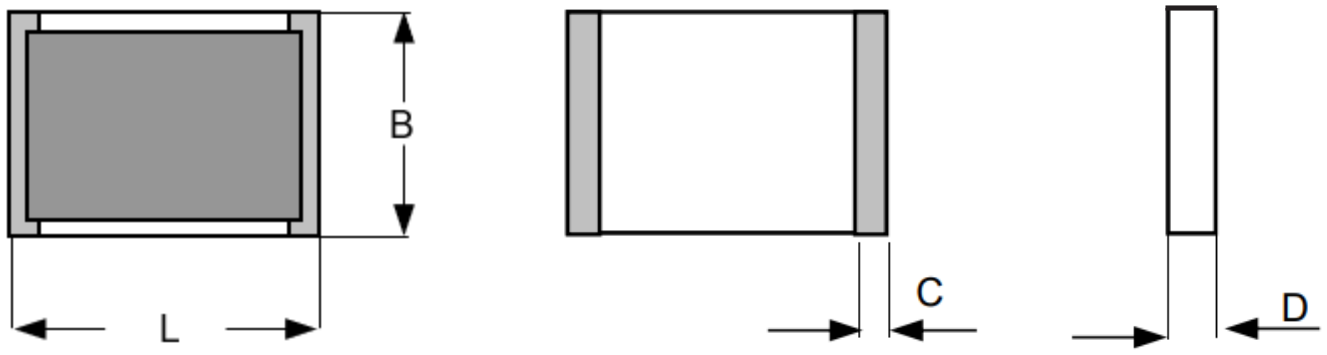
[3]) Temperature coefficient TCR: in ppm/K +25°C to +125°C; TCR lower than standard TCR (highest value) +25°C to +85°C; Zero Ω jumper: <50 mΩ

**Technical Data - General**

| | | |
|---|---|---|
| Operating temperature range | -55°C to +155°C | |
| Climatic category acc. to EN 60068-1 | 55, 155, 56 | |
| Solderability acc. to EN 60068-2-58 (lead-free and lead-containing) [4] | 250°C, 3s | |
| Max. soldering temperature acc. to EN 60068-2-58 | 260°C, 10s | |
| Long term stability | **10R - 10M** | **< 10R** |
| Storage 125°C/1000h | < 0.5% | < 1% |
| Storage 155°C/1000h | < 1% | < 2% |
| Load Life $P_{70}$/70°C/1000h | < 1% | < 2% |
| Short term overload | < 0.25% | < 0.5% |
| Damp heat (56d/40˚C/96%) | < 0.5% | < 1% |
| Other data according to EN 140401-802 (CECC 40401-802). | | |

| Dimensions (mm) | | | | Table 2 |
|---|---|---|---|---|
| **Size** | **L (Length)** | **B (Width)** | **D (Thickness)** | **C (Wrap around width)** |
| 1210 | 3.2 +0.2/-0.05 | 2.5 +0.2/-0.05 | 0.5 +0.2/-0.1 | 0.8 +0.2 |
| 1216 | 3.2 +0.2/-0.05 | 4.1 +0.2/-0.05 | 0.5 +0.2/-0.1 | 0.8 +0.2 |
| 2010 | 5.1 +0.2/-0.05 | 2.5 +0.2/-0.05 | 0.6 +0.2/-0.1 | 1.2 +0.2 |
| 2040 | 5.1 +0.2/-0.05 | 10.2 +0.2/-0.05 | 0.6 +0.2/-0.1 | 1.2 +0.2 |
| 2512 | 6.3 +0.2/-0.05 | 3.5 +0.2/-0.05 | 0.6 +0.2/-0.1 | 0.9 ±0.2 |
| 4020 | 10.2 +0.2 | 5.1 +0.2 | 0.6 +0.2/-0.1 | 0.9 ±0.2 |

**Dimensions** — Fig. 1




| Packaging | |
|---|---|
| Bulk in plastic bags | Contact Durakool for minimum order quantities |
| Embossed carrier tape acc. to IEC 60286-3 | Contact Durakool for minimum order quantities |
| Reel diameter | 180 or 330mm |

## Example Ordering Code

| S | S | P | 1 | 2 | 1 | 0 | T | 1 | R | 0 | 0 | F | 1 | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Series**
SSP

**Case Size**
1210, 1216, 2010, 2040, 2512,4020

**Trimming**
T = Trimmed
U = Untrimmed

**Resistance Ω**
0.1 - 100M

**Tolerance ± % (See table 1)**

| | | |
|---|---|---|
| **B** ± 0.1 | **F** ± 1 | **K** ± 10 |
| **C** ± 0.25 | **G** ± 2 | **M** ± 20 |
| **D** ± 0.5 | **J** ± 5 | **N** ± 30 |

**Temperature Coefficient TCR**
50 to 250 ppm (See table 1)

NB: Standard TCR will be the highest value in the table unless otherwise requested. Measuring voltage will be 10V. Other voltages are available - specific requirements must be requested.