

### Surface Mount Type

### SP-Cap

Series: **SL**

**Old series**



#### ■ Features

- Low-ESR (9 mΩ)
- Excellent Noise-absorbent Characteristics
- High Ripple Current
- RoHS directive compliant

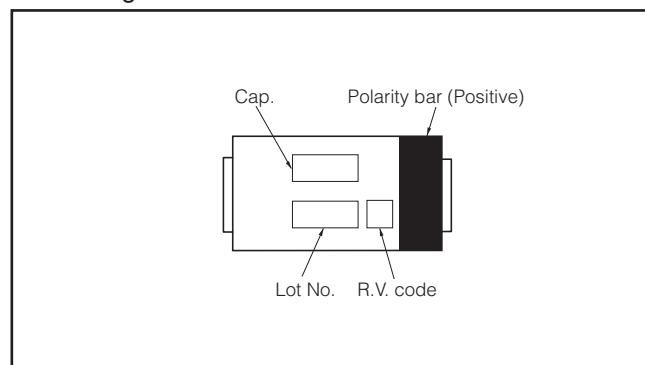
#### [Our Requests]

Since this series is old, we don't recommend you to adopt it but SX series for your new design.

#### ■ Specifications

|                       |                                                                                                                                             |                                    |            |            |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------|------------|
| Series & Size Code    | SL                                                                                                                                          |                                    |            |            |
| Category Temp. Range  | -40 °C to +105 °C                                                                                                                           |                                    |            |            |
| Rated Voltage Range   | 2 V.DC to 6.3 V.DC                                                                                                                          |                                    |            |            |
| Nominal Cap.Range     | 56 μF to 220 μF                                                                                                                             |                                    |            |            |
| Capacitance Tolerance | ±20 %                                                                                                                                       |                                    |            |            |
| DC Leakage Current    | Reflow 240 °C : I ≤ 0.04 CV (μA) 2 minutes (6.3 V.DC)<br>Reflow 260 °C : I ≤ 0.1 CV (μA) 2 minutes                                          |                                    |            |            |
| tan δ                 | ≤ 0.06 (120 Hz/+20 °C)                                                                                                                      |                                    |            |            |
| Surge Voltage         | Rated Voltage × 1.25 (15 °C to 35 °C)                                                                                                       |                                    |            |            |
| Endurance             | After applying rated voltage for 1000 hours at 105 °C±2 °C, and then being stabilized at +20 °C, capacitor shall meet the following limits. |                                    |            |            |
|                       | Capacitance change                                                                                                                          | ±10% of initial measured value     |            |            |
|                       | tan δ                                                                                                                                       | ≤ Initial specified value          |            |            |
|                       | DC leakage current                                                                                                                          | ≤ Initial specified value          |            |            |
| Moisture resistance   | After storing for 500 hours at 60 °C, 90 %                                                                                                  |                                    |            |            |
|                       | Capacitance change of initial measurd value                                                                                                 | 2, 2.5 V.DC                        | 4 V.DC     | 6.3 V.DC   |
|                       |                                                                                                                                             | +70, -20 %                         | +60, -20 % | +50, -20 % |
|                       | tan δ                                                                                                                                       | ≤ 200 % of initial specified value |            |            |
|                       | DC leakage current                                                                                                                          | ≤ Initial specified value          |            |            |

#### ■ Marking



#### ■ Dimensions in mm(not to scale)

(Unit : mm)

(Unit: mm)

Technical drawing of a capacitor showing three views: top, side, and front views. The top view shows a rectangular component with a central rectangular cutout. The side view shows the component's profile with a central rectangular cutout. The front view shows the component's profile with a central rectangular cutout. The dimensions are labeled as follows:

- $L$ : Total length of the component.
- $P$ : Distance from the center of the component to the center of the cutout.
- $W1$ : Width of the component.
- $W2$ : Width of the component at the ends.
- $H$ : Height of the component.

| Series & Size Code | $L \pm 0.2$ | $W1 \pm 0.2$ | $W2 \pm 0.1$ | H             | $P \pm 0.3$ |
|--------------------|-------------|--------------|--------------|---------------|-------------|
| <b>SL</b>          | 7.3         | 4.3          | 2.4          | $1.8 \pm 0.1$ | 1.3         |

\* Externals of figure are the reference.

#### ■ Low ESR Products

| Series & Size Code | Rated Voltage (V.DC) | Capacitance (±20 %) (μF) | Case Size |        |        | Specification                  |                     | Part number  | Reflow *3 |        | Min. Packaging Q'ty (pcs) |
|--------------------|----------------------|--------------------------|-----------|--------|--------|--------------------------------|---------------------|--------------|-----------|--------|---------------------------|
|                    |                      |                          | L (mm)    | W (mm) | H (mm) | *1<br>Ripple current (Ar.m.s.) | *2<br>ESR (mΩ max.) |              | 240 °C    | 260 °C |                           |
| SL                 | 2                    | 100                      | 7.3       | 4.3    | 1.8    | 3.0                            | 9                   | EEFSL0D101ER | —         | ○      | 3500                      |
|                    |                      | 120                      | 7.3       | 4.3    | 1.8    | 3.0                            | 9                   | EEFSL0D121ER | —         | ○      | 3500                      |
|                    |                      | 150                      | 7.3       | 4.3    | 1.8    | 3.0                            | 9                   | EEFSL0D151ER | —         | ○      | 3500                      |
|                    |                      | 180                      | 7.3       | 4.3    | 1.8    | 3.0                            | 9                   | EEFSL0D181ER | —         | ○      | 3500                      |
|                    |                      | 220                      | 7.3       | 4.3    | 1.8    | 3.0                            | 9                   | EEFSL0D221ER | —         | ○      | 3500                      |
|                    | 2.5                  | 100                      | 7.3       | 4.3    | 1.8    | 3.0                            | 9                   | EEFSL0E101ER | —         | ○      | 3500                      |
|                    |                      | 120                      | 7.3       | 4.3    | 1.8    | 3.0                            | 9                   | EEFSL0E121ER | —         | ○      | 3500                      |
|                    |                      | 150                      | 7.3       | 4.3    | 1.8    | 3.0                            | 9                   | EEFSL0E151ER | —         | ○      | 3500                      |
|                    | 4                    | 82                       | 7.3       | 4.3    | 1.8    | 3.0                            | 9                   | EEFSL0G820ER | —         | ○      | 3500                      |
|                    | 6.3                  | 56                       | 7.3       | 4.3    | 1.8    | 3.0                            | 9                   | EEFSL0J560R  | ○         | —      | 3500                      |

\*1: Ripple current (100 kHz/ +20 to +105 °C), \*2: ESR (100 kHz/+20 °C)

\*3: Please refer to the page of "Mounting Specifications".

\*4: Please contact Panasonic for details of allowable 240 °C reflow condition.

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.  
Should a safety concern arise regarding this product, please be sure to contact us immediately.

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# Mouser Electronics

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