Surface Mount Type **SP-Cap**

Series: **S**

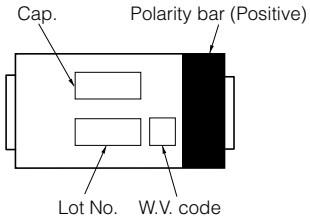
■ Features

- Super Low-ESR (4.5 mΩ to 9 mΩ)
- Lower ESR and Higher Capacitance at the same case size as conventional products.
- Excellent Noise-absorbent Characteristics
- High Ripple Current
- RoHS directive compliant

■ Specifications

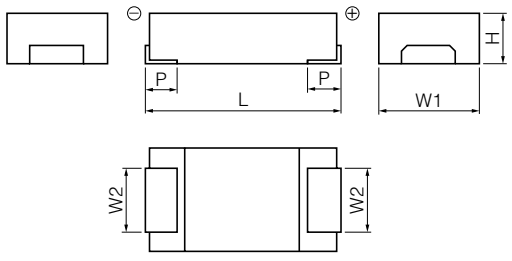
Series & Size Code	SL		SX	
Category Temp. Range	−40 °C to +105 °C			
Rated W.V.Range	2 V.DC to 6.3 V.DC			
Nominal Cap.Range	56 µF to 220 µF		82 µF to 560 µF	
Capacitance Tolerance	±20 %			
DC Leakage Current	Reflow 240 °C : I ≦ 0.06 CV (µA) 2 minutes (2 V.DC to 4 V.DC) I ≦ 0.04 CV (µA) 2 minutes (6.3 V.DC) Reflow 260 °C : I ≦ 0.1 CV (µA) 2 minutes			
tan δ	≦ 0.06 (120 Hz/+20 °C)			
Surge Voltage	Rated Working Voltage × 1.25 (15 °C to 35 °C)			
Endurance	After applying rated working 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)



Series & Size Code	L±0.2	W1±0.2	W2±0.1	H	P±0.3
SL	7.3	4.3	2.4	1.8±0.1	1.3
SX	7.3	4.3	2.4	1.9±0.2	1.3

✻ Externals of figure are the reference.

00 Nov. 2012

■ Low ESR Products

○ : available, — : not available

Series & Size Code	Rated W.V. (V.DC)	Capacitance (±20 %) (μF)	Case Size L (mm)	Case Size W (mm)	Case Size H (mm)	Specification ✻1 Ripple current (Ar.m.s.)	Specification ✻2 ESR (mΩ max.)	Part number	Reflow condition 240 °C ✻3	Reflow condition 260 °C ✻3	Min. Packaging Q'ty (pcs)
SL	2	100	7.3	4.3	1.8	3.0	9	EEFSL0D101ER	✻4	○	3500
		120	7.3	4.3	1.8	3.0	9	EEFSL0D121ER	✻4	○	3500
		150	7.3	4.3	1.8	3.0	9	EEFSL0D151ER	✻4	○	3500
		180	7.3	4.3	1.8	3.0	9	EEFSL0D181ER	✻4	○	3500
		220	7.3	4.3	1.8	3.0	9	EEFSL0D221ER	✻4	○	3500
	2.5	100	7.3	4.3	1.8	3.0	9	EEFSL0E101ER	✻4	○	3500
		120	7.3	4.3	1.8	3.0	9	EEFSL0E121ER	✻4	○	3500
		150	7.3	4.3	1.8	3.0	9	EEFSL0E151ER	✻4	○	3500
	4	82	7.3	4.3	1.8	3.0	9	EEFSL0G820ER	✻4	○	3500
	6.3	56	7.3	4.3	1.8	3.0	9	EEFSL0J560R ✻5	○	—	3500
SX	2	180	7.3	4.3	1.9	3.0	9	EEFSX0D181ER	✻4	○	3500
		220	7.3	4.3	1.9	3.0	9	EEFSX0D221ER	✻4	○	3500
		270	7.3	4.3	1.9	3.0	9	EEFSX0D271ER	✻4	○	3500
			7.3	4.3	1.9	3.5	6	EEFSX0D271XE	✻4	○	3500
			7.3	4.3	1.9	3.8	4.5	EEFSX0D271E4	—	○	3500
		330	7.3	4.3	1.9	3.0	9	EEFSX0D331ER	✻4	○	3500
			7.3	4.3	1.9	3.5	6	EEFSX0D331XE	✻4	○	3500
			7.3	4.3	1.9	3.8	4.5	EEFSX0D331E4	—	○	3500
		390	7.3	4.3	1.9	3.0	9	EEFSX0D391ER	✻4	○	3500
			7.3	4.3	1.9	3.5	6	EEFSX0D391XE	✻4	○	3500
			7.3	4.3	1.9	4.0	4.5	EEFSX0D391E4	—	○	3500
		470	7.3	4.3	1.9	3.0	9	EEFSX0D471ER	✻4	○	3500
			7.3	4.3	1.9	3.5	6	EEFSX0D471XE	✻4	○	3500
			7.3	4.3	1.9	4.0	4.5	EEFSX0D471E4	—	○	3500
		560	7.3	4.3	1.9	3.8	4.5	EEFSX0D561E4	—	○	3500
	2.5	150	7.3	4.3	1.9	3.0	9	EEFSX0E151ER	✻4	○	3500
		180	7.3	4.3	1.9	3.0	9	EEFSX0E181ER	✻4	○	3500
		220	7.3	4.3	1.9	3.0	9	EEFSX0E221ER	✻4	○	3500
			7.3	4.3	1.9	3.5	7	EEFSX0E221E7	—	○	3500
		270	7.3	4.3	1.9	3.5	7	EEFSX0E271E7	—	○	3500
		330	7.3	4.3	1.9	3.0	9	EEFSX0E331ER	✻4	○	3500
			7.3	4.3	1.9	3.5	6	EEFSX0E331XE	✻4	○	3500
			7.3	4.3	1.9	4.0	4.5	EEFSX0E331E4	—	○	3500
		390	7.3	4.3	1.9	3.0	9	EEFSX0E391ER	✻4	○	3500
			7.3	4.3	1.9	3.5	6	EEFSX0E391XE	✻4	○	3500
			7.3	4.3	1.9	4.0	4.5	EEFSX0E391E4	—	○	3500
		470	7.3	4.3	1.9	3.0	9	EEFSX0E471ER	—	○	3500
			7.3	4.3	1.9	3.5	6	EEFSX0E471XE	—	○	3500
			7.3	4.3	1.9	3.8	4.5	EEFSX0E471E4	—	○	3500
	4	82	7.3	4.3	1.9	3.0	9	EEFSX0G820ER	✻4	○	3500
		100	7.3	4.3	1.9	3.0	9	EEFSX0G101ER	✻4	○	3500
		150	7.3	4.3	1.9	3.0	9	EEFSX0G151ER	—	○	3500
			7.3	4.3	1.9	3.5	7	EEFSX0G151E7	—	○	3500
		180	7.3	4.3	1.9	3.0	9	EEFSX0G181ER	—	○	3500
		220	7.3	4.3	1.9	3.0	9	EEFSX0G221ER	—	○	3500
	6.3	120	7.3	4.3	1.9	3.5	7	EEFSX0J121E7	—	○	3500
		150	7.3	4.3	1.9	3.0	9	EEFSX0J151ER	—	○	3500

✻1: Ripple current (100 kHz/ +20 to +105 °C), ✻2: ESR (100 kHz/+20 °C)
✻3: Please refer to the page of "Mouting Specifications".
✻4: Please use high temperature Lead-Free reflow (260 °C) for new design.
✻5: In the case of new design please contact us.