

Surface Mount Type **SP-Cap**

Series : **SX (Low ESR Products)**



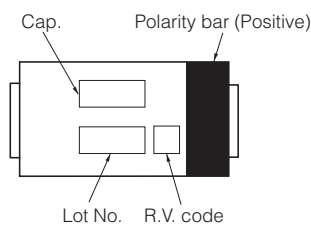
Features

- Large capacitance (560 μF max.)
- Low ESR (4.5 $\text{m}\Omega$ to 9 $\text{m}\Omega$)
- High ripple current (8500 mAr.m.s. max.)
- RoHS compliance, Halogen free

Specifications

Series	SX			
Category temp. range	-55 °C to +105 °C			
Rated voltage range	2 V.DC to 6.3 V.DC			
Nominal cap.range	82 μF to 560 μF			
Capacitance tolerance	$\pm 20\%$ (120 Hz/+20 °C)			
DC leakage current	$I \leq 0.1 \text{ CV}$ (μA) 2 minutes			
Dissipation factor ($\tan \delta$)	≤ 0.06 (120 Hz/+20 °C)			
Surge voltage (V.DC)	Rated voltage $\times 1.25$ (15 °C to 35 °C)			
Endurance	+105 °C, 2000 h, rated voltage applied			
	Capacitance change	Within $\pm 20\%$ of the initial value		
	$\tan \delta$	≤ 2 times of the initial limit		
	DC leakage current	≤ 3 times of the initial limit		
Damp heat (Steady state)	+60 °C, 90 %, 500 h, No-applied voltage			
	Capacitance change of initial measurd value	2 to 2.5 V.DC	4 V.DC	6.3 V.DC
		+70 %, -20 %	+60 %, -20 %	+50 %, -20 %
	$\tan \delta$	≤ 2 times of the initial limit		
DC leakage current	Within the initial limit			

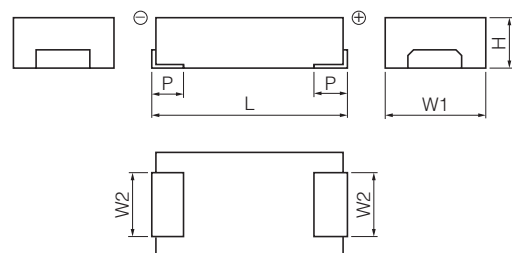
Marking



Rated voltage mark

d	2 V.DC
e	2.5 V.DC
g	4 V.DC
j	6.3 V.DC

Dimensions (not to scale)



Unit : mm

Series	$L \pm 0.2$	$W1 \pm 0.2$	$W2 \pm 0.1$	$H \pm 0.1$	$P \pm 0.3$
SX	7.3	4.3	2.4	1.9	1.3

* Externals of figure are the reference.

Characteristics list

Reflow *3 <Standard>

Series	Rated voltage (V.DC)	Capacitance (±20%) (μF)	Case size (mm)			Specification		Part number	Min.*4 Packaging Q'ty (pcs)
			L	W	H	*1 Ripple current (mAr.m.s.)	*2 ESR (mΩ max.)		
SX	2	180	7.3	4.3	1.9	6300	9	EEFSX0D181ER	3500
		220	7.3	4.3	1.9	6300	9	EEFSX0D221ER	3500
		270	7.3	4.3	1.9	6300	9	EEFSX0D271ER	3500
			7.3	4.3	1.9	7500	6	EEFSX0D271XE	3500
			7.3	4.3	1.9	8500	4.5	EEFSX0D271E4	3500
		330	7.3	4.3	1.9	6300	9	EEFSX0D331ER	3500
			7.3	4.3	1.9	7500	6	EEFSX0D331XE	3500
			7.3	4.3	1.9	8500	4.5	EEFSX0D331E4	3500
		390	7.3	4.3	1.9	6300	9	EEFSX0D391ER	3500
			7.3	4.3	1.9	7500	6	EEFSX0D391XE	3500
	7.3		4.3	1.9	8500	4.5	EEFSX0D391E4	3500	
	470	7.3	4.3	1.9	6300	9	EEFSX0D471ER	3500	
		7.3	4.3	1.9	7500	6	EEFSX0D471XE	3500	
		7.3	4.3	1.9	8500	4.5	EEFSX0D471E4	3500	
	560	7.3	4.3	1.9	8500	4.5	EEFSX0D561E4	3500	
	2.5	150	7.3	4.3	1.9	6300	9	EEFSX0E151ER	3500
		180	7.3	4.3	1.9	6300	9	EEFSX0E181ER	3500
		220	7.3	4.3	1.9	6300	9	EEFSX0E221ER	3500
			7.3	4.3	1.9	7000	7	EEFSX0E221E7	3500
		270	7.3	4.3	1.9	7000	7	EEFSX0E271E7	3500
		330	7.3	4.3	1.9	6300	9	EEFSX0E331ER	3500
			7.3	4.3	1.9	7500	6	EEFSX0E331XE	3500
			7.3	4.3	1.9	8500	4.5	EEFSX0E331E4	3500
		390	7.3	4.3	1.9	6300	9	EEFSX0E391ER	3500
			7.3	4.3	1.9	7500	6	EEFSX0E391XE	3500
			7.3	4.3	1.9	8500	4.5	EEFSX0E391E4	3500
		470	7.3	4.3	1.9	6300	9	EEFSX0E471ER	3500
			7.3	4.3	1.9	7500	6	EEFSX0E471XE	3500
			7.3	4.3	1.9	8500	4.5	EEFSX0E471E4	3500
	4	82	7.3	4.3	1.9	6300	9	EEFSX0G820ER	3500
100		7.3	4.3	1.9	6300	9	EEFSX0G101ER	3500	
150		7.3	4.3	1.9	6300	9	EEFSX0G151ER	3500	
		7.3	4.3	1.9	7000	7	EEFSX0G151E7	3500	
180		7.3	4.3	1.9	6300	9	EEFSX0G181ER	3500	
220		7.3	4.3	1.9	6300	9	EEFSX0G221ER	3500	
270	7.3	4.3	1.9	6300	9	EEFSX0G271ER	3500		
6.3	120	7.3	4.3	1.9	7000	7	EEFSX0J121E7	3500	
	150	7.3	4.3	1.9	6300	9	EEFSX0J151ER	3500	
	180	7.3	4.3	1.9	6300	9	EEFSX0J181ER	3500	

*1: Ripple current (100 kHz/ +45°C), *2: ESR (100 kHz/+20°C)

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

*4: Please contact us when 500 pcs packing is necessary.

Temperature compensation multipliers for ripple current

Temp.	T ≤ 45 °C	45 °C < T ≤ 85 °C	85 °C < T ≤ 105 °C
Coefficient	1.0	0.7	0.25