

Surface Mount Type **SP-Cap**

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



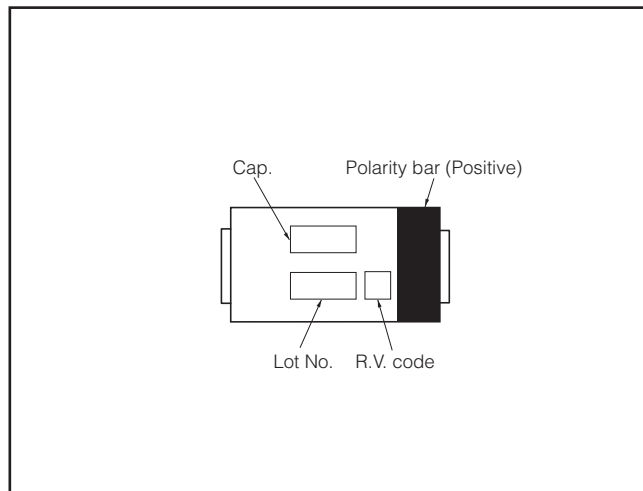
■ Features

- Large capacitance (560 μF max.)
- Low ESR (4.5 mΩ to 9 mΩ)
- RoHS directive compliant

■ Specifications

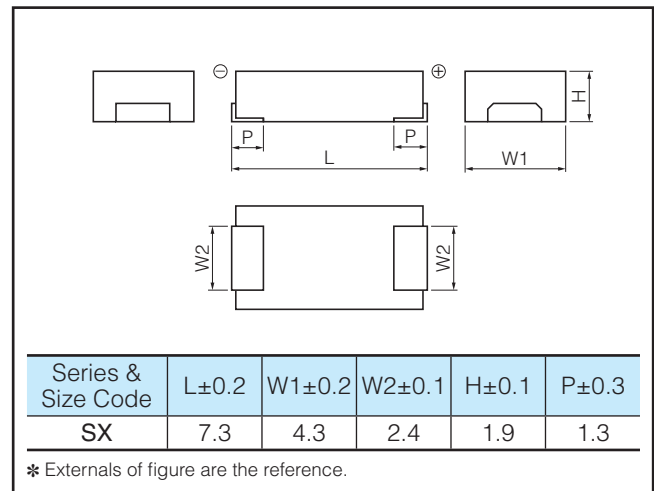
Series & Size Code	SX			
Category Temp. Range	-55 °C to +105 °C			
Rated Voltage Range	2 V.DC to 6.3 V.DC			
Nominal Cap.Range	82 μF to 560 μF			
Capacitance Tolerance	±20 % (120 Hz/+20 °C)			
DC Leakage Current	I ≤ 0.1 CV (μA) 2 minutes			
tan δ	≤ 0.06 (120 Hz/+20 °C)			
Surge Voltage	Rated Voltage × 1.25 (15 °C to 35 °C)			
Endurance	After applying rated voltage for 2000 hours at 105 °C±2 °C, and then being stabilized at +20 °C, capacitor shall meet the following limits.			
	Capacitance change	±20% of initial measured value		
	tan δ	≤ 200 % of initial specified value		
	DC leakage current	≤ 300 % of initial specified value		
Moisture resistance	After storing for 500 hours at 60 °C, 90 %			
	Capacitance change of initial measured 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)



■ Low ESR Products

Reflow *3 <Standard>

Series & Size Code	Rated Voltage (V.DC)	Capacitance (±20%) (μF)	Case Size			Specification		Part number	Min. Packaging Q'ty (pcs) *4	
			L (mm)	W (mm)	H (mm)	Ripple current (Ar.m.s.) *1	ESR (mΩ max.) *2			
SX	2	180	7.3	4.3	1.9	6.3	9	EEFSX0D181ER	3500	
		220	7.3	4.3	1.9	6.3	9	EEFSX0D221ER	3500	
		270	7.3	4.3	1.9	6.3	9	EEFSX0D271ER	3500	
			7.3	4.3	1.9	7.5	6	EEFSX0D271XE	3500	
			7.3	4.3	1.9	8.5	4.5	EEFSX0D271E4	3500	
		330	7.3	4.3	1.9	6.3	9	EEFSX0D331ER	3500	
			7.3	4.3	1.9	7.5	6	EEFSX0D331XE	3500	
			7.3	4.3	1.9	8.5	4.5	EEFSX0D331E4	3500	
		390	7.3	4.3	1.9	6.3	9	EEFSX0D391ER	3500	
			7.3	4.3	1.9	7.5	6	EEFSX0D391XE	3500	
			7.3	4.3	1.9	8.5	4.5	EEFSX0D391E4	3500	
		470	7.3	4.3	1.9	6.3	9	EEFSX0D471ER	3500	
	7.3		4.3	1.9	7.5	6	EEFSX0D471XE	3500		
	7.3		4.3	1.9	8.5	4.5	EEFSX0D471E4	3500		
	560	7.3	4.3	1.9	8.5	4.5	EEFSX0D561E4	3500		
	2.5	150	7.3	4.3	1.9	6.3	9	EEFSX0E151ER	3500	
		180	7.3	4.3	1.9	6.3	9	EEFSX0E181ER	3500	
		220	7.3	4.3	1.9	6.3	9	EEFSX0E221ER	3500	
			7.3	4.3	1.9	7.0	7	EEFSX0E221E7	3500	
		270	7.3	4.3	1.9	7.0	7	EEFSX0E271E7	3500	
		330	7.3	4.3	1.9	6.3	9	EEFSX0E331ER	3500	
			7.3	4.3	1.9	7.5	6	EEFSX0E331XE	3500	
			7.3	4.3	1.9	8.5	4.5	EEFSX0E331E4	3500	
		390	7.3	4.3	1.9	6.3	9	EEFSX0E391ER	3500	
			7.3	4.3	1.9	7.5	6	EEFSX0E391XE	3500	
			7.3	4.3	1.9	8.5	4.5	EEFSX0E391E4	3500	
		470	7.3	4.3	1.9	6.3	9	EEFSX0E471ER	3500	
			7.3	4.3	1.9	7.5	6	EEFSX0E471XE	3500	
			7.3	4.3	1.9	8.5	4.5	EEFSX0E471E4	3500	
		4	82	7.3	4.3	1.9	6.3	9	EEFSX0G820ER	3500
			100	7.3	4.3	1.9	6.3	9	EEFSX0G101ER	3500
			150	7.3	4.3	1.9	6.3	9	EEFSX0G151ER	3500
				7.3	4.3	1.9	7.0	7	EEFSX0G151E7	3500
	180		7.3	4.3	1.9	6.3	9	EEFSX0G181ER	3500	
	220		7.3	4.3	1.9	6.3	9	EEFSX0G221ER	3500	
	270		7.3	4.3	1.9	6.3	9	EEFSX0G271ER	3500	
6.3	120	7.3	4.3	1.9	7.0	7	EEFSX0J121E7	3500		
	150	7.3	4.3	1.9	6.3	9	EEFSX0J151ER	3500		
	180	7.3	4.3	1.9	6.3	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		
T ≤ 45 °C	45 °C < T ≤ 85 °C	85 °C < T ≤ 105 °C
1.0	0.7	0.25