

Surface Mount Type

SP-Cap

Series: S

- Features
 - Super Low-ESR(5 to 9mΩ)
 - Lower ESR and Higher Capacitance at the same case size as conventional products.
 - Excellent Noise-absorbent Characteristics
 - High Ripple Current
 - RoHS directive compliant
 - Reflow 260°C and 240°C. Please see specific P/N details.

Country of Origin

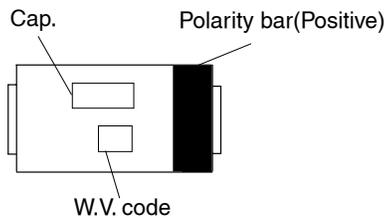
Japan
Singapore



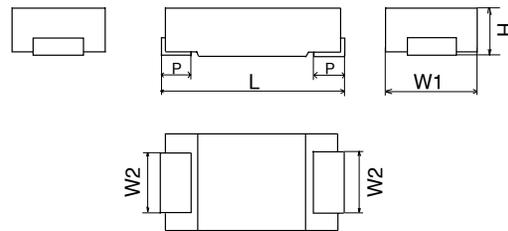
■ Specification

Series & Size Code	SL	SX	SD	SE
Category Temp. Range	-40 to +105°C			
Rated W.V. Range	2 to 6.3V.DC			
Nominal Cap. Range	56 to 220μF	68 to 470μF	120 to 390μF	180 to 560μF
Capacitance Tolerance	±20 %			
DC Leakage Current	Reflow 240°C: $I \leq 0.06 CV$ 2minutes(2 to 4V.DC) $I \leq 0.04CV$ 2minutes(6.3V.DC) Reflow 260°C: $I \leq 0.1CV$ 2minutes			
tan δ	$\leq 0.06(120Hz/ +20°C)$		$\leq 0.10(120Hz/ +20°C)$	
Surge Voltage	Rated Working Voltage × 1.25 (15 to 35°C)			
Endurance	After applying rated working voltage for 1000 hours at 105±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, 2.5V.DC +70, -20%	4 V.DC +60, -20%	6.3V.DC +50, -20%
	tan δ	≤ 200% of initial specified value		
	DC leakage current	≤ Initial specified value		

■ Marking



■ Dimensions in mm(not to scale)



(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
SD	7.3	4.3	2.4	2.8±0.2	1.3
SE	7.3	4.3	2.4	4.2±0.1	1.3

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Mar.2006

Low ESR Products

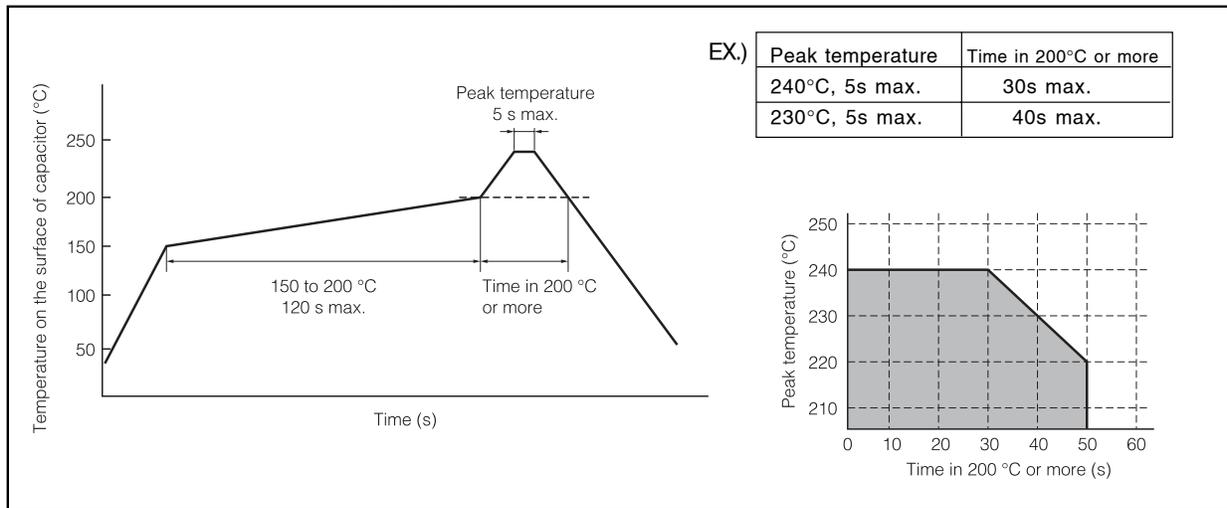
Series & Size Code	Rated W.V. (V.DC)	Capacitance (±20%) (μF)	Case Size			Specification		Reflow 240°C	Reflow 260°C	Min. Packaging Q'ty (pcs)
			L (mm)	W (mm)	H (mm)	Ripple current (Ar.m.s.) ^{*1}	ESR (Ω) ^{*2}	Part number	Part number	
SL	2	100	7.3	4.3	1.8	3.0	0.009	EEFSL0D101R	EEFSL0D101ER	3500
		120	7.3	4.3	1.8	3.0	0.009	EEFSL0D121R	EEFSL0D121ER	3500
		150	7.3	4.3	1.8	3.0	0.009	EEFSL0D151R	EEFSL0D151ER	3500
		180	7.3	4.3	1.8	3.0	0.009	EEFSL0D181R	EEFSL0D181ER	3500
		220	7.3	4.3	1.8	3.0	0.009	EEFSL0D221R	EEFSL0D221ER	3500
	2.5	100	7.3	4.3	1.8	3.0	0.009	EEFSL0E101R	EEFSL0E101ER	3500
		120	7.3	4.3	1.8	3.0	0.009	EEFSL0E121R	EEFSL0E121ER	3500
		150	7.3	4.3	1.8	3.0	0.009	EEFSL0E151R	EEFSL0E151ER	3500
	4	82	7.3	4.3	1.8	3.0	0.009	EEFSL0G820R	EEFSL0G820ER	3500
	6.3	56	7.3	4.3	1.8	3.0	0.009	EEFSL0J560R	-	3500
SD	2	270	7.3	4.3	2.8	3.5	0.007	EEFSD0D271R	EEFSD0D271ER	2000
		330	7.3	4.3	2.8	3.5	0.007	EEFSD0D331R	EEFSD0D331ER	2000
		390	7.3	4.3	2.8	3.5	0.007	EEFSD0D391R	EEFSD0D391ER	2000
	2.5	220	7.3	4.3	2.8	3.5	0.007	EEFSD0E221R	EEFSD0E221ER	2000
		270	7.3	4.3	2.8	3.5	0.007	EEFSD0E271R	EEFSD0E271ER	2000
	4	150	7.3	4.3	2.8	3.5	0.007	EEFSD0G151R	EEFSD0G151ER	2000
	6.3	120	7.3	4.3	2.8	3.5	0.007	EEFSD0J121R	-	2000
	SE	2	390	7.3	4.3	4.2	4.0	0.005	EEFSE0D391R	EEFSE0D391ER
470			7.3	4.3	4.2	4.0	0.005	EEFSE0D471R	EEFSE0D471ER	2000
560			7.3	4.3	4.2	4.0	0.005	EEFSE0D561R	EEFSE0D561ER	2000
2.5		330	7.3	4.3	4.2	4.0	0.005	EEFSE0E331R	EEFSE0E331ER	2000
		390	7.3	4.3	4.2	4.0	0.005	EEFSE0E391R	EEFSE0E391ER	2000
4		220	7.3	4.3	4.2	4.0	0.005	EEFSE0G221R	EEFSE0G221ER	2000
6.3		180	7.3	4.3	4.2	4.0	0.005	EEFSE0J181R	-	2000
SX		2	180	7.3	4.3	1.9	3.0	0.009	EEFSX0D181R	EEFSX0D181ER
	220		7.3	4.3	1.9	3.0	0.009	EEFSX0D221R	EEFSX0D221ER	3500
	270		7.3	4.3	1.9	3.0	0.009	EEFSX0D271R	EEFSX0D271ER	3500
	330		7.3	4.3	1.9	3.0	0.009	EEFSX0D331R	EEFSX0D331ER	3500
	330		7.3	4.3	1.9	3.5	0.006	EEFSX0D331XR	EEFSX0D331XE	3500
	390		7.3	4.3	1.9	3.0	0.009	EEFSX0D391R	EEFSX0D391ER	3500
	470		7.3	4.3	1.9	3.0	0.009	EEFSX0D471R	EEFSX0D471ER	3500
	470		7.3	4.3	1.9	3.5	0.006	EEFSX0D471XR	EEFSX0D471XE	3500
	2.5	150	7.3	4.3	1.9	3.0	0.009	EEFSX0E151R	EEFSX0E151ER	3500
		180	7.3	4.3	1.9	3.0	0.009	EEFSX0E181R	EEFSX0E181ER	3500
		220	7.3	4.3	1.9	3.0	0.009	EEFSX0E221R	EEFSX0E221ER	3500
		330	7.3	4.3	1.9	3.0	0.009	EEFSX0E331R	EEFSX0E331ER	3500
		330	7.3	4.3	1.9	3.5	0.006	EEFSX0E331XR	EEFSX0E331XE	3500
		390	7.3	4.3	1.9	3.0	0.009	EEFSX0E391R	EEFSX0E391ER	3500
		390	7.3	4.3	1.9	3.5	0.006	EEFSX0E391XR	EEFSX0E391XE	3500
	4	82	7.3	4.3	1.9	3.0	0.009	EEFSX0G820R	EEFSX0G820ER	3500
		100	7.3	4.3	1.9	3.0	0.009	EEFSX0G101R	EEFSX0G101ER	3500
		150	7.3	4.3	1.9	3.0	0.009	EEFSX0G151R	EEFSX0G151ER	3500
	6.3	68	7.3	4.3	1.9	3.0	0.009	EEFSX0J680R	-	3500

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

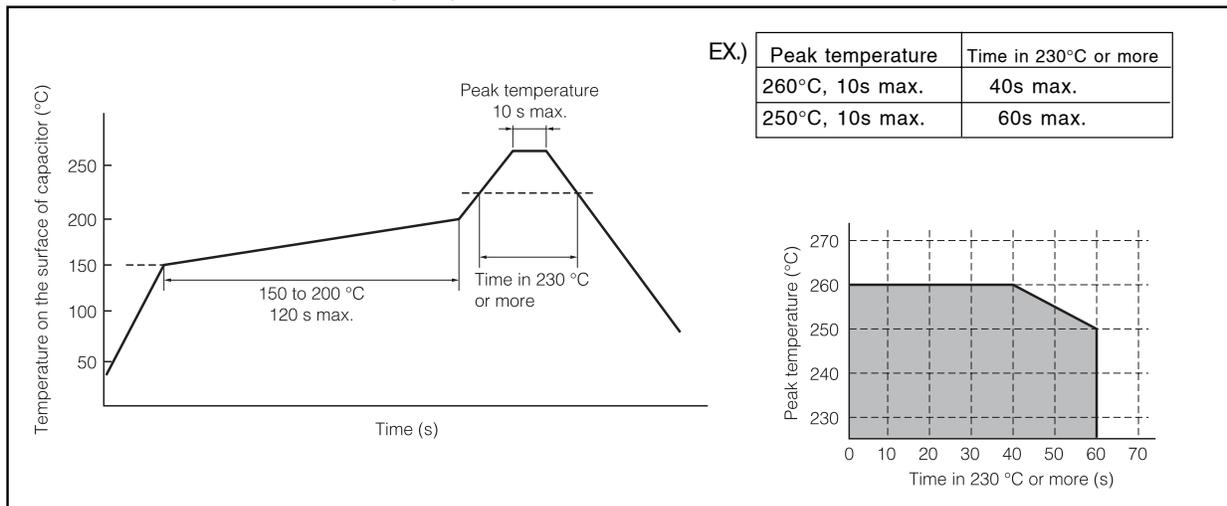
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■ Mounting Specifications.

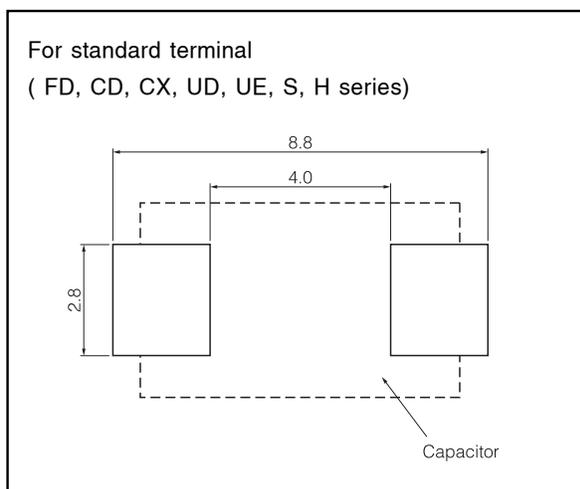
- Recommendable reflow soldering temperature 240°C



- Recommendable reflow soldering temperature 260°C



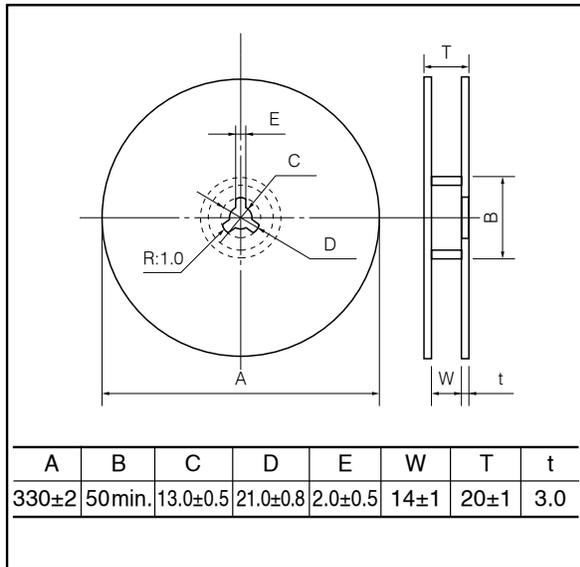
- Typical land pattern (mm)



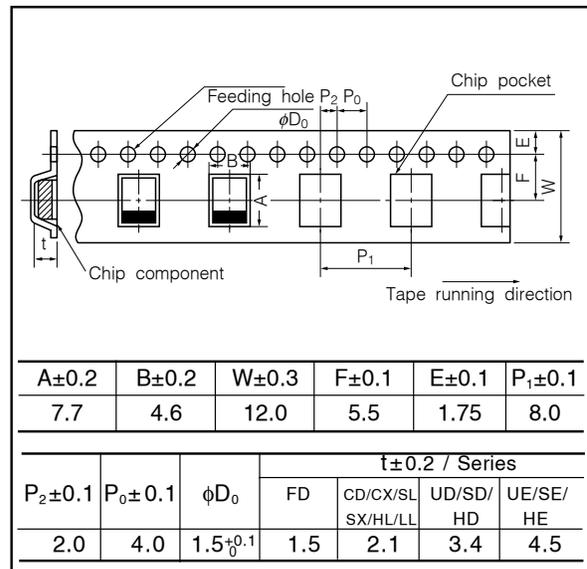
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■ Packaging Specifications

● Reel Dimensions (mm)



● Embossed Taping (mm)



■ Packaging Box Dimensions (mm)

