

Surface Mount Type SR,LR,SS,LS,ST,LT series



SP-Cap

Features

- Low profile (Height 1.0 mm max.)
- Low ESR (4.5 mΩ to 9 mΩ max.)
- Low ESL (3-terminals : 50% less than 2-terminals) [LR, LS, LT series]
- High ripple current (8500 mA r.m.s. max.)
- RoHS compliance, Halogen free

Specifications

Series	SR	LR	SS	LS	ST	LT	
Category temp. range	-55 °C to +105 °C						
Rated voltage range	2.0 V.DC to 6.3 V.DC			2.0 V.DC to 2.5 V.DC			
Nominal cap. range	68 μF to 220 μF		180 μF to 220 μF		270 μF to 330 μF		
Capacitance tolerance	±20 % (120 Hz / +20 °C)						
DC leakage current	$I \leq 0.1 CV$ (μA) 2 minutes						
Dissipation factor (tan δ)	≤ 0.06 (120 Hz / + 20 °C)						
Surge voltage (V.DC)	Rated voltage × 1.25 (15 °C to 35 °C)						
Endurance	+105 °C ± 2 °C, 2000 h, rated voltage applied						
	Capacitance change	Within ±20 % of the initial value					
	Dissipation factor (tan δ)	≤ 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 measured value	2.0 V.DC to 2.5 V.DC +70 %, -20 %		4.0 V.DC +60 %, -20 %		6.3 V.DC +50 %, -20 %	
	Dissipation factor (tan δ)	≤ 2 times of the initial limit					
	DC leakage current	Within the initial limit					

Marking

Capacitance (μF)

Polarity bar (Positive)

Lot No.

R. voltage code

R. voltage code	Unit : V.DC
d	2.0
e	2.5
g	4.0
j	6.3

Dimensions (not to scale)

SR, SS, ST series

2 terminals

Series	L±0.2	W1±0.2	W2±0.1	H±0.1	P±0.3
SR	7.3	4.3	2.4	1.0 ^{*1}	1.3
SS	7.3	4.3	2.4	1.1	1.3
ST	7.3	4.3	2.4	1.4	1.3

Unit : mm
^{*1}:max.

LR, LS, LT series

3 terminals

Series	L±0.2	W1±0.2	W2±0.1	H±0.1	P1±0.3	P2±0.1	P3±0.2	P4±0.2
LR	7.3	4.3	2.4	1.0 ^{*1}	1.3	1.1	0.7	1.4
LS	7.3	4.3	2.4	1.1	1.3	1.1	0.7	1.4
LT	7.3	4.3	2.4	1.4	1.3	1.1	0.7	1.4

Unit : mm
^{*1}:max.

* External of figure are the reference.

Characteristics list

Series	Rated voltage (V.DC)	Capacitance (μF)	Case size (mm)			Specification		The number of terminals		Part number	Min. Packaging Q'ty ^{*3} (pcs)
			L	W	H	Ripple current ^{*1} (mA r.m.s.)	ESR ^{*2} (mΩ max.)	2	3		
SR	2.0	220	7.3	4.3	1.0 max.	7500	6	○		EEFSR0D221R	3500
			7.3	4.3	1.0 max.	8500	4.5	○		EEFSR0D221R4	3500
	2.5	180	7.3	4.3	1.0 max.	7500	6	○		EEFSR0E181R	3500
			7.3	4.3	1.0 max.	8500	4.5	○		EEFSR0E181R4	3500
	4.0	120	7.3	4.3	1.0 max.	6300	9	○		EEFSR0G121R	3500
	6.3	68	7.3	4.3	1.0 max.	6300	9	○		EEFSR0J680R	3500
LR	2.0	220	7.3	4.3	1.0 max.	7500	6		○	EEFLR0D221R	3500
			7.3	4.3	1.0 max.	8500	4.5		○	EEFLR0D221R4	3500
	2.5	180	7.3	4.3	1.0 max.	7500	6		○	EEFLR0E181R	3500
			7.3	4.3	1.0 max.	8500	4.5		○	EEFLR0E181R4	3500
	4.0	120	7.3	4.3	1.0 max.	6300	9		○	EEFLR0G121R	3500
	6.3	68	7.3	4.3	1.0 max.	6300	9		○	EEFLR0J680R	3500
SS	2.0	220	7.3	4.3	1.1	7500	6	○		EEFSS0D221R	3500
	2.5	180	7.3	4.3	1.1	7500	6	○		EEFSS0E181R	3500
LS	2.0	220	7.3	4.3	1.1	7500	6		○	EEFLS0D221R	3500
	2.5	180	7.3	4.3	1.1	7500	6		○	EEFLS0E181R	3500
ST	2.0	330	7.3	4.3	1.4	7500	6	○		EEFST0D331R	3500
	2.5	270	7.3	4.3	1.4	7500	6	○		EEFST0E271R	3500
LT	2.0	330	7.3	4.3	1.4	7500	6		○	EEFLT0D331R	3500
	2.5	270	7.3	4.3	1.4	7500	6		○	EEFLT0E271R	3500

*1: Ripple current (100 kHz / +45 °C)

*2: ESR (100 kHz / +20 °C)

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

◆ Please refer to each page in this catalog for "Reflow conditions" and "Taping specifications".

Temperature coefficient of ripple current

Temperature		T ≤ 45 °C	45 °C < T ≤ 85 °C	85 °C < T ≤ 105 °C
2.0 V.DC to 6.3 V.DC	Coefficient	1.0	0.7	0.25

◆ Ripple current should be controlled so that surface temperature of capacitor does not exceed the category temperature.

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