

Surface Mount Type **SP-Cap**

Series: **CS, CT, CX** (High Voltage Products)



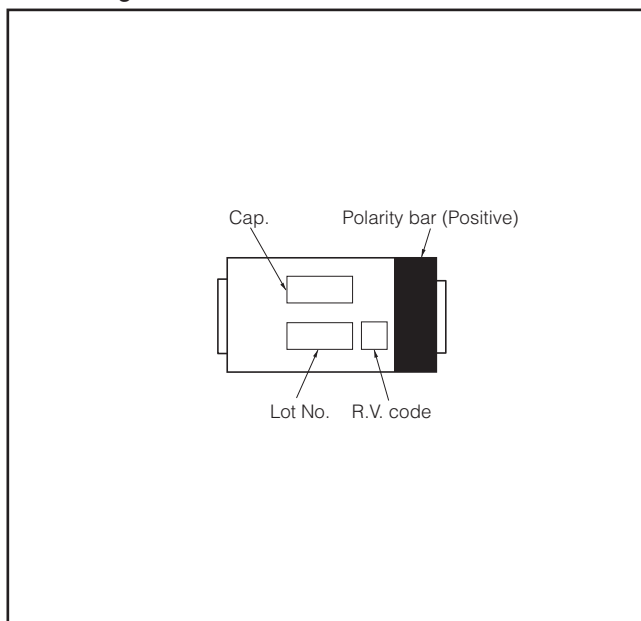
■ Features

- High voltage. (10 V to 35 V)
- Low profile (1.1 mm, 1.4 mm, 1.9 mm height)
- High ripple current (3.2 Ar.m.s.)
- RoHS directive compliant

■ Specifications

Series & Size Code	CS	CT	CX
Category Temp. Range	-55 °C to +105 °C		
Rated Voltage Range	10 V.DC to 35 V.DC		
Nominal Cap.Range	10 μF to 47 μF	15 μF to 68 μF	15 μF to 100 μF
Capacitance Tolerance	±20 % (120 Hz / +20 °C)		
DC Leakage Current	$I \leq 0.3 CV (\mu A)$ 2minutes		
tan δ	≤ 0.06 (120 Hz/+20 °C)		
Surge Voltage	Rated Voltage × 1.25 [10 V.DC to 16 V.DC], × 1.15 [20 V.DC to 35 V.DC](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	
Moisture resistance	After storing for 500 hours at 60 °C, 90 %		
	Capacitance change of initial measured value	10 V.DC to 35 V.DC	
		+60, -20 %	
	tan δ	≤ 200 % of initial specified value	
DC leakage current	≤ 300 % of 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±0.1	P±0.3
CS	7.3	4.3	2.4	1.1	1.3
CT	7.3	4.3	2.4	1.4	1.3
CX	7.3	4.3	2.4	1.9	1.3

* Externals of figure are the reference.

Standard Products

Reflow *3 <Standard>

Series & Size Code	Rated Voltage (V.DC)	Capacitance (±20 %) (μF)	Case Size			Specification		Part number	Min. Packaging Qty (pcs) *4
			L (mm)	W (mm)	H (mm)	Ripple current (Ar.m.s.) *1	ESR (mΩ max.) *2		
CS	10	47	7.3	4.3	1.1	3.2	40	EEFCS1A470R	3500
	16	15	7.3	4.3	1.1	3.2	40	EEFCS1C150R	3500
		22	7.3	4.3	1.1	3.2	40	EEFCS1C220R	3500
		33	7.3	4.3	1.1	3.2	40	EEFCS1C330R	3500
	20	10	7.3	4.3	1.1	3.2	40	EEFCS1D100R	3500
		15	7.3	4.3	1.1	3.2	40	EEFCS1D150R	3500
		22	7.3	4.3	1.1	3.2	40	EEFCS1D220R	3500
	25	10	7.3	4.3	1.1	3.2	40	EEFCS1E100R	3500
		15	7.3	4.3	1.1	3.2	40	EEFCS1E150R	3500
	35	10	7.3	4.3	1.1	3.2	40	EEFCS1V100R	3500
CT	10	68	7.3	4.3	1.4	3.2	40	EEFCT1A680R	3500
	16	47	7.3	4.3	1.4	3.2	40	EEFCT1C470R	3500
	20	33	7.3	4.3	1.4	3.2	40	EEFCT1D330R	3500
		47	7.3	4.3	1.4	3.2	40	EEFCT1D470R	3500
	25	22	7.3	4.3	1.4	3.2	40	EEFCT1E220R	3500
	35	15	7.3	4.3	1.4	3.2	40	EEFCT1V150R	3500
CX	10	47	7.3	4.3	1.9	3.2	40	EEFCX1A470R	3500
		68	7.3	4.3	1.9	3.2	40	EEFCX1A680R	3500
		100	7.3	4.3	1.9	3.2	40	EEFCX1A101R	3500
	16	15	7.3	4.3	1.9	3.2	40	EEFCX1C150R	3500
		22	7.3	4.3	1.9	3.2	40	EEFCX1C220R	3500
		33	7.3	4.3	1.9	3.2	40	EEFCX1C330R	3500
		47	7.3	4.3	1.9	3.2	40	EEFCX1C470R	3500
		68	7.3	4.3	1.9	3.2	40	EEFCX1C680R	3500
	20	22	7.3	4.3	1.9	3.2	40	EEFCX1D220R	3500
		33	7.3	4.3	1.9	3.2	40	EEFCX1D330R	3500
		47	7.3	4.3	1.9	3.2	40	EEFCX1D470R	3500
		56	7.3	4.3	1.9	3.2	40	EEFCX1D560R	3500
	25	15	7.3	4.3	1.9	3.2	40	EEFCX1E150R	3500
		22	7.3	4.3	1.9	3.2	40	EEFCX1E220R	3500
		33	7.3	4.3	1.9	3.2	40	EEFCX1E330R	3500
	35	15	7.3	4.3	1.9	3.2	40	EEFCX1V150R	3500
		22	7.3	4.3	1.9	3.2	40	EEFCX1V220R	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	0.8	0.5