

SC series
Standard product

SA series
Large capacitance miniaturized

SL series
5mm in height products

SH series
Long Life product

SG series
Specially designed for audio

SS series
Miniaturized products

SP series
Large Capacitance Low ESR

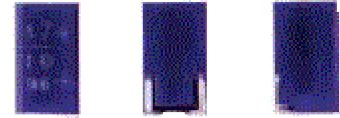
SM series
Horizontal SMD

SN series
Horizontal Miniaturized SMD

NewSV series
New Vertical SMD

SM Series

Horizontal Surface Mounting Devices



SANYO has succeeded in developing the chip-type **OSCON**, as we have developed new materials which have higher heat ability. It can be soldered by reflow soldering and mounted by carrier taping. We made a start in sales from October 1991. Ideal for use in products such as switching power supplies, VCRs, etc. Where a surface mounting design is necessary.

Case color : Purple
Marking : Polarity(Anode),
Rated voltage,
Capacitance, Lot.No.

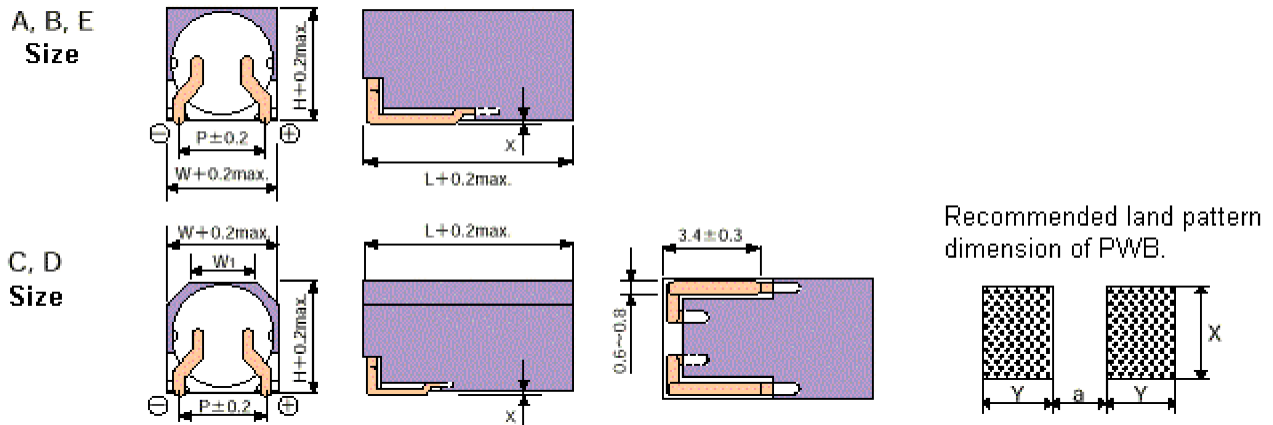
Specifications

Items		Characteristics		
1	Operating temperature range	- 55degrees C ~ +105degrees C		
2	Capacitance tolerance(120Hz)	M(±20%)		
3	Tangent of loss angle(120Hz)	Value in Table 8 or less		
4	Leakage current(uA/2min.)(or less) ※ 1	A,B size 0.03CV or 1(whichever is the greater) C,D,E size 0.05CV		
5	ESR (100k ~ 300kHz)	Value in Table 8 or less		
6	Temperature characteristics Impedance ratio at 100kHz	-55degrees C	Z/Z 20degrees C	1.0 ~ 2.0
		+105degrees C	Z/Z 20degrees C	0.6 ~ 1.0
7	High-temperature load 105degrees C, 2000Hrs. Rated voltage applied	ΔC/C	Within ±20%	
		Tangent of loss angle	1.5 times of Item 3 or less	
		Leakage current	Item 4 or less	
8	Moisture resistance (60degrees C, 90 ~ 95%RH,500Hrs.no voltage)	ΔC/C	Within ±20%	
		Tangent of loss angle	1.5 times of Item 3 or less	
		Leakage current	Item 4 or less	
9	Reverse voltage guarantee	Temporary:less than 20% of the rated voltage, Continuous:less than 10% of the rated voltage.		
10	Solder heat resistance (VPS) ※ 2 (230degrees C*10sec.)	ΔC/C	Within ±10%	
		Tangent of loss angle	2 times of Item 3 or less	
		Leakage current	Item 4 or less	

※ 1	If any doubt arises measure the current after applying voltage(voltage treatment) for 120 minutes at 105degrees C. The rated voltage should be applied for all WV.
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※ 2 The electrostatic capacity of SM series products may be changed by soldering such as VPS and reflow.
 Refer to "[Recommendable reflow condition of SMD type](#)" for soldering specifications.

Dimensions



Size Code	L(mm)	W(mm)	H(mm)	P(mm)	X(mm)	W1(mm)
A	7.3	4.6	4.6	3.6	0.2max	„ \ddot{Y}
B	7.3	5.6	5.6	4.4	0.2max	„ \ddot{Y}
C	9.0	7.0	7.0	5.5	0.3max	5.6
D	12.0	7.0	7.0	5.5	0.3max	5.6
E	13.0	8.8	8.8	7.0	0.3max	„ \ddot{Y}

Size List

uF	WV(SV)	6.3WV (7.2SV)	10WV (11.5SV)	16WV (18.4SV)	20WV (23.0SV)
	1.0uF	-	-	-	A
2.2uF	-	-	-	A	B
3.3uF	-	-	-	A	B
4.7uF	-	-	A	B	C
6.8uF	A	-	-	B	C
10uF	-	-	B	-	C
15uF	B	-	-	C	D
22uF	-	-	C	-	D
33uF	C	-	-	-	D
47uF	C	-	D	-	E
68uF	-	-	D	-	E
100uF	-	-	E	-	-
150uF	E	-	-	-	-

Size	X(mm)	Y(mm)	a(mm)
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A	4.7±0.1	2.0±0.1	1.6±0.1
B	4.7±0.1	2.2±0.1	2.2±0.1
C	4.7±0.1	2.5±0.1	3.0±0.1
D	4.7±0.1	2.5±0.1	3.0±0.1
E	4.7±0.1	2.8±0.1	4.2±0.1



Temperature coefficient for ripple current					
Ambient Temp.	~+45degrees C	+65degrees C	+85degrees C	+95degrees C	+105degrees C
Coefficient	1.0	0.85	0.7	0.4	0.25

Size Code	Part Number ※ 1	Rated voltage (V)	Nominal Capacitance (uF)	ESR		Maximum allowable ripple current (mArms)※ 2	tangent of loss angle (max.)	Leakage current (uA) (max.)※ 3
				100kHz ~ 300kHz	(mohm)(max.)			
A	20SM1M	20	1.0	600		430	0.06	1.00
	16SM2R2M	16	2.2	500		450	0.07	1.06
	16SM3R3M	16	3.3	450		500	0.08	1.58
	10SM4R7M	10	4.7	400		540	0.09	1.41
	6SM6R8M	6.3	6.8	400		560	0.09	1.29
B	20SM2R2M	20	2.2	300		695	0.06	1.32
	20SM3R3M	20	3.3	300		700	0.06	1.98
	16SM4R7M	16	4.7	300		720	0.07	2.26
	16SM6R8M	16	6.8	250		745	0.07	3.26
	10SM10M	10	10	250		780	0.09	3.00
	6SM15M	6.3	15	250		815	0.09	2.84
C	20SM4R7M	20	4.7	150		790	0.07	4.70
	20SM6R8M	20	6.8	150		800	0.07	6.80
	20SM10M	20	10	150		890	0.07	10.0
	16SM15M	16	15	150		900	0.07	12.0
	10SM22M	10	22	150		1000	0.07	11.0
	6SM33M	6.3	33	150		1240	0.07	10.3
	6SM47M	6.3	47	150		1320	0.08	14.8
D	20SM15M	20	15	125		1140	0.07	15.0
	20SM22M	20	22	125		1450	0.07	22.0
	20SM33M	20	33	125		1580	0.07	33.0
	10SM47M	10	47	100		1630	0.08	23.5
	10SM68M	10	68	100		1650	0.08	34.0
E	20SM47M	20	47	80		1710	0.07	47.0
	20SM68M	20	68	80		2020	0.07	68.0

10SM100M	10	100	80	2110	0.08	50.0
6SM150M	6.3	150	80	2150	0.09	47.2

※ 1	Capacitance tolerance:M; ± 20%
※ 2	100kHz, +45degrees C
※ 3	After 2 minutes

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