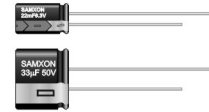


7(9)mmL(高), High C/V(高CV化)

FEATURES

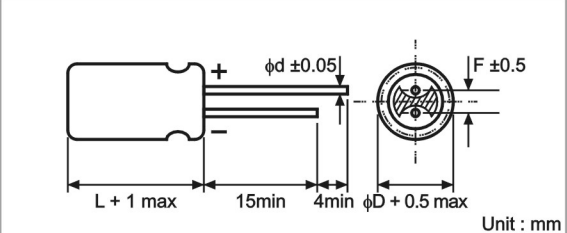
1. The SS series is employing etched foils for higher gain effect.
2. Designed for use in VTRs, car radios, car stereos, micro-cassette tape recorders, pocket calculators and watches.



SPECIFICATIONS

Item	Performance Characteristics							
Operating Temperature Range	-40 to +85°C							
Rated Working Voltage Range	6.3 to 50V							
Nominal Capacitance Range	0.1 to 470μF							
Capacitance Tolerance	±20% (120Hz, +20°C)							
Leakage Current	I ≤ 0.01CV or 3(μA) whichever is greater measured after 2 minutes application of rated working voltage at +20°C							
Dissipation Factor tan δ (120Hz, +20°C)	Working Voltage (V)	6.3	10	16	25	35	50	
	tan δ (max.)	0.24	0.20	0.16	0.14	0.12	0.10	
Low Temperature Characteristics	Impedance ratio max. at 120Hz							
	Working Voltage (V)	6.3	10	16	25	35	50	
	Z-25°C / Z+20°C	4	3	2	2	2	2	
	Z-40°C / Z+20°C	8	6	4	4	3	3	
High Temperature Loading	Test conditions				Post test requirements at +20°C			
	Duration : 1000 hours				Leakage current : ≤ Initial specified value			
	Ambient temp. : +85°C				Cap. change : within ±20% of initial measured value			
	Applied voltage : Rated DC working voltage with rated ripple current				tan δ : ≤ 200% of initial specified value			
Shelf Life	Test conditions				Post test requirements at +20°C			
	Duration : 1000 hours				Same limits for high temperature loading.			
	Ambient temp. : +85°C							
	Applied voltage : (None)							
Others	JIS C - 5101 (IEC 60384)							

CASE SIZE TABLE

	φD	4	5	6.3	8				
	F	1.5	2.0	2.5	3.5				
	φd			0.45	0.50				

RIPPLE CURRENT MULTIPLIER

Temperature Coefficient					Frequency Coefficient					
Temperature(°C)	~ 55	60	70	85	Cap(µF)	Freq.(Hz)	50	120	300	1K ~ 10K ~
Factor	1.65	1.50	1.30	1.00		≤ 47	0.75	1.00	1.35	1.57 2.00
						47 ~ 470	0.80	1.00	1.23	1.34 1.50

7(9)mmL(高), High C/V(高CV化)

DIMENSIONS

Voltage (Code)		6.3V (0J)		10V (1A)		16V (1C)		25V (1E)	
Cap.(μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
0.1	104								
0.22	224								
0.33	334								
0.47	474								
1	105								
2.2	225								
3.3	335								
4.7	475								
10	106					4 x 7	28	4 x 7	28
22	226	4 x 7	34	4 x 7	35	4 x 7	39	5 x 7	48
33	336	4 x 7	40	4 x 7	43	(4) 5 x 7	(45) 59	5 x 7	58
47	476	4 x 7	48	(4) 5 x 7	(45) 59	5 x 7	65	6.3 x 7	71
100	107	5 x 7	78	(5) 6.3 x 7	(74) 87	6.3 x 7	98	8 x 7 (9)	115 (130)
220	227	6.3 x 7	120	(6.3) 8 x 7	(138) 145	8 x 9	186		
330	337	8 x 7 (9)	180 (204)	8 x 7	201				
470	477	8 x 7 (9)	215 (243)						

Maximum Allowable Ripple Current (mA rms) at 85°C 120Hz

Case Size φD x L(mm)

Voltage (Code)		35V (1V)		50V (1H)					
Cap.(μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current				
0.1	104			4 x 7	1.0				
0.22	224			4 x 7	2.3				
0.33	334			4 x 7	3.5				
0.47	474			4 x 7	5.0				
1	105			4 x 7	10				
2.2	225			4 x 7	19				
3.3	335			4 x 7	24				
4.7	475	4 x 7	24	4 x 7	28				
10	106	4 x 7	31	5 x 7	38				
22	226	5 x 7	52	6.3 x 7	58				
33	336	6.3 x 7	65	8 x 7 (9)	75 (85)				
47	476	8 x 7 (9)	85 (96)	8 x 9	101				
100	107	8 x 9	141						

Maximum Allowable Ripple Current (mA rms) at 85°C 120Hz

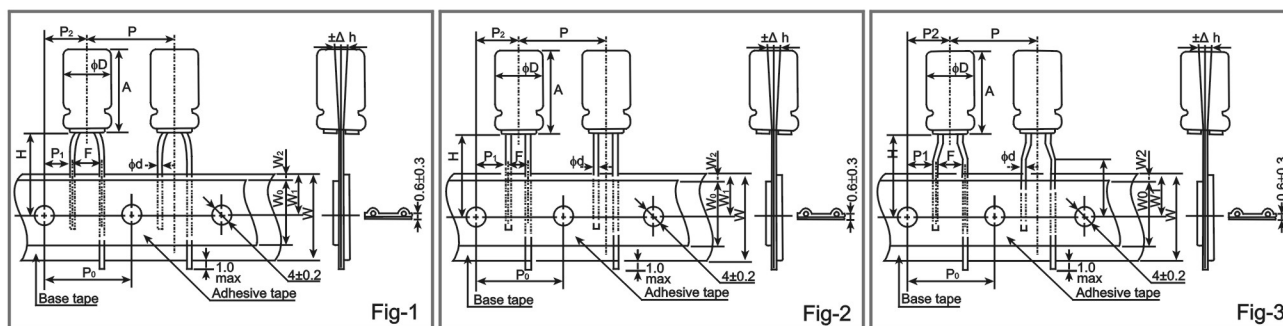
Case Size φD x L(mm)

Part Number System(產品編碼)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
EGS			105			M	1H		D11			TC		SA		P	
SERIES			CAPACITANCE			TOL.	VOLTAGE		CASE SIZE			TYPE		PRODUCT LINE		SLEEVE MATERIAL	

Series	Cap(MFD)	Code	Tolerance (%)	Code	Voltage (W.V.)	Code	Case Size	Feature	Code	Product Line			
ESM	0.1	104	±5	J	4	0G	Eg. 5mmx11mm D 11	Radial bulk	RR	Basically, all our products are complied with RoHS directive, If the customer ask for better differentiation of our RoHS products for their internal use, the 15th digital can be changed to "R" upon request.			
ETM							6.3				0J	Diameter Code	Case Length
EKF												Diameter(φ)	Code
ESS	0.22	224	±10	K	10	1A		3 B	Ammo Taping				
ETS							4 C						
EKS							5 D						
EBS	0.47	474	+10 -20	C	16	1C	6.3 E	2.5mm Pitch			TU		
EGR							8 F						
EGS							10 G						
EKM	1	105	±15	L	20	1D	12.5 I	3.5mm Pitch	TV				
EKG							16 K						
EZM							18 L						
EZS	2.2	225	±30	N	40	1G	20 M	5mm Pitch	TC				
EGZ							22 N						
EGF							25 O						
EGK	4.7	475	±20	M	42	1M	30 P	Lead Cut & Form	CE				
EGE							35 Q						
EGD							50 S						
EGC	10	106	+100 0	P	57	1L	63 T	CE-Type	CE				
EGA							76 U						
ERS							90 X						
ERF	22	226	+30 -10	Q	63	1J	Len. (mm) Code	HE-Type	HE				
ERL							5 05						
ERR							5.4 54						
ERT	33	336	+20 0	R	75	1T	7 07	KD-Type	KD				
ERD							10.2 T2						
EBD							11 11						
ELM	47	476	+50 -10	T	80	1K	12.5 1B	FD-Type	FD				
ELF							20 20						
ELS							25 25						
ELZ	100	107	+75 -10	U	100	2A	30 30	EH-Type	EH				
ELK							35 35						
ELL							50 50						
ELT	125	1B7	+20 -10	V	150	2Z	80 80	PCB Terminal	SG				
ELN							100 1L						
EFM							105 1K						
EFS	330	337	+20 -10	W	160	2C	110 1M	Snap-in	SW				
EFA							120 1N						
EFN							130 1P						
ENM	470	477	+40 -20	X	140 1Q	200	2D	145 1D	SX				
ENS										150 1R			
ENQ										160 1S			
ENP	2200	228	+50 -20	S	170 1T	220	2N	180 1U	SZ				
ENH										190 1V			
EBP										200 2L			
EBH	22000	229	+80 -20	Z	315	2F	350	2V	220 2N				
EPF										330 2U			
EPS										350 2W			
ELP	33000	339	+50 -20	Z	330	2U	360	2X	250 2R				
EAP										375 2Q			
EHP										385 2Y			
EKP	47000	479	+80 -20	Z	400	2G	420	2M	270 2T				
EKP										450 2W			
EEP										500 2H			
EEP	100000	10T	+50 -20	S	550	25	600	26	2J				
ESP										630			
EWR										630			
EWT	150000	15T	+50 -20	S	630	2J	630	2J	2J				
EWX										630			
EWY										630			
EWZ	220000	22T	+80 -20	Z	630	2J	630	2J	2J				
VSS										630			
VNS										630			
VKS	330000	33T	+80 -20	Z	630	2J	630	2J	2J				
VKM										630			
VNH										630			
VZS	1000000	10M	+80 -20	Z	630	2J	630	2J	2J				
VZS										630			
VRF										630			
VRF	1500000	15M	+80 -20	Z	630	2J	630	2J	2J				
VRF										630			
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VRF	2200000	22M	+80 -20	Z	630	2J	630	2J	2J				
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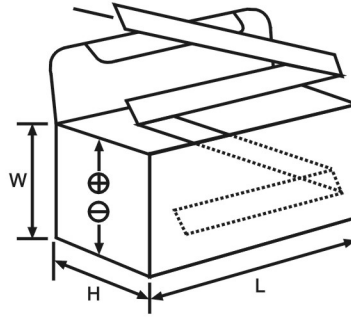
Tapping Specifications(編帶產品規格)



SPECIFICATIONS

Item		Dimemssion (mm)														
Reference figure		Fig 1		Fig 2						Fig 3					TOL.	
Diameter	D	4 ~ 5	5	6.3	8	10	12.5	16, 18		3	4, 5, 6.3	5, 6.3	8			
Height	A	5 ~ 7	9 ~ 15	5 ~ 7	9 ~ 15	11 ~ 20	9 ~ 21	15 ~ 35	15 ~ 40	5	5 ~ 7	9 ~ 15	5 ~ 9	11 ~ 20		
Lead Diameter	d	0.45	0.5	0.45	0.5	0.5	0.6	0.6	0.8	0.4	0.45	0.5	0.45	0.5	±0.05	
Component Spacing	P	12.7		12.7	12.7	12.7	15	30		12.7	12.7		12.7		±1.0	
Pitch of sprocket holes	P ₀	12.7		12.7	12.7	12.7	15	15		12.7	12.7		12.7		±0.2	
Distance between centres of component leads	F	2.5		2.5	3.5	5.0	5.0	7.5		2.5	2.5 5.0		5.0		+0.8 -0.2	
Carrier tape width	W	18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0		18.0		±0.5	
Distance between the center of upper edge of carrier tape and sprocket hole	W ₁	9.0		9.0	9.0	9.0	9.0	9.0		9.0	9.0		9.0		±0.5	
Distance between the abscissa and the bottom of the components body	H	18.5		18.5	18.5	18.5	18.5	18.5		18.5	17.5	18.5	17.5	20.0	+0.75 -0.5	
Distance between the abscissa and the reference plane of the components with crimped leads	H ₀	----		----	----	----	----	----		16.0	16.0		16.0		±0.5	
Hold down tape width	W ₀	7.0		7.0	7.0	7.0	15	15		7.0	7.0		7.0		Min.	
Max. lateral deviation of the component body vertical to the tape plane	Δ h	0		0	0	0	0	0		0	0		0		±1.0	
Distance between the upper edges of the carrier tape and the hold down tape	W ₂	0 ~ 3		0 ~ 3	0 ~ 3	0 ~ 3	0 ~ 3	0 ~ 3		0 ~ 3	0 ~ 3		0 ~ 3		----	
Distance between center of terminal and the sprocket holes	P ₁	5.1		5.1	4.6	3.85	5.0	3.75		5.1	5.1 3.85		3.85		±0.5	
Distance between center of the component and the sprocket holes	P ₂	6.35		6.35	6.35	6.35	7.5	7.5		6.35	6.35		6.35		±1.0	

Packing Specifications(包裝規格)



PACKING QUANTITY (TAPPING TYPE)

φD x L (mm)	L (mm)	W (mm)	H (mm)	Inner Box Quantity	Outer Box Quantity
3 x 5	330	229	51	3000	30000
4 x 5~7	330	229	51	2500	25000
5 x 5~11	330	229	51	2000	20000
6.3 x 5~12	330	229	51	1500	15000
8 x 5~12	330	229	51	1000	10000
8 x 14~20	330	229	64	1000	8000
10 x 12.5	330	191	51	500	5000
10 x 16	330	191	56	500	5000
10 x 20~25	330	191	64	500	4000
10 x 30	330	191	69	500	4000
12.5 x 20	325	267	58	500	2000
12.5 x 25	325	270	63	500	2000
12.5 x 35	325	270	74	500	2000
16 x 25	315	221	63	250	1000
16 x 35	315	221	76	250	1500
18 x 20~25	343	275	63	250	1000
18 x 30~35	343	275	73	250	500
18 x 40	343	275	78	250	500

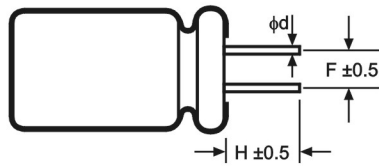
PACKING QUANTITY (BULK TYPE)

Long Lead Wire Product			
φD x L (mm)	Plastic Bag Quantity	Inner Box Quantity	Outer Box Quantity
3 x 5	2000 ^{±3}	24000	96000
4 x 5~7	1000 ^{±3}	16000	64000
5 x 5~7	1000 ^{±3}	14000	56000
5 x 11	1000 ^{±3}	10000	40000
6.3 x 5~7	1000 ^{±3}	10000	40000
6.3 x 11	1000 ^{±3}	8000	32000
8 x 5	1000 ^{±3}	10000	40000
8 x 7~9, 6.3 x 15	500 ^{±3}	6000	24000
8 x 12	500 ^{±3}	5000	20000
10 x 12.5	500 ^{±3}	3000	12000
8 x 20	250 ^{±3}	2500	10000
10 x 15~17	200	2400	9600
10 x 18~26	250	2000	8000
10 x 25	200	1600	6400
10 x 30	150	1200	4800
10 x 35	100	1000	2000
12.5 x 20	200	1200	2400
12.5 x 25	100	1000	2000
12.5 x 30	100	600	1200
16 x 20~30	-----	200	800
16 x 32~40	-----	200	600
18 x 15~30	-----	150	600
18 x 35~50	-----	150	450

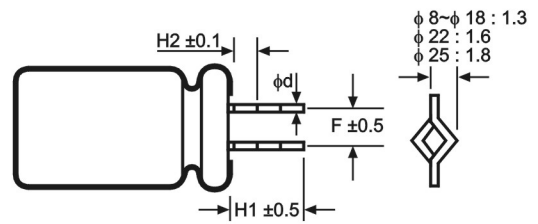
PACKING QUANTITY (SNAP-IN)

Snap-in Terminal Product					
φD x L (mm)	Inner Box Quantity	Outer Box Quantity	φD x L (mm)	Inner Box Quantity	Outer Box Quantity
22 x 20~40	100	400	30 x 20~40	100	400
22 x 45~60	100	300	30 x 45~60	100	300
25 x 20~40	100	400	35 x 20~40	100	400
25 x 45~60	100	300	35 x 45~60	100	300

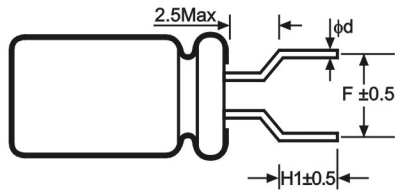
Lead Forming Specification(成型產品規格)



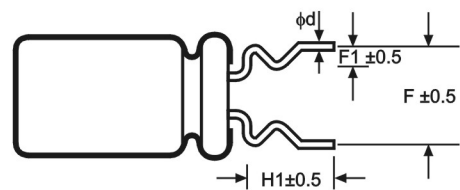
TYPE CE



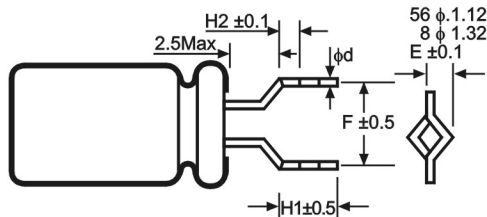
TYPE KD



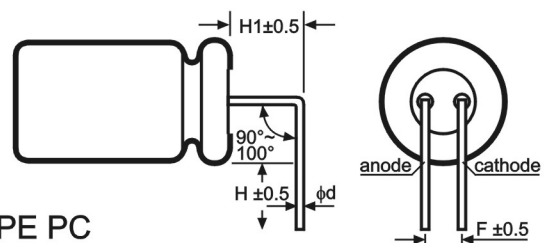
TYPE HE



TYPE EC



TYPE FD



TYPE PC

SHAPE CODE	ϕD	4	5	6.3	8(L > 5mm)	10	13	16	18
CE	F	1.5	2.0	2.5	3.5	5.0	5.0	7.5	7.5
	H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	$\phi d \pm 0.05$	0.45	0.5	0.5	0.5	0.6	0.6	0.8	0.8
HE	F	5.0	5.0	5.0	5.0	---	---	---	---
	H1	5.0	5.0	5.0	5.0	---	---	---	---
	$\phi d \pm 0.05$	0.45	0.5	0.5	0.5	---	---	---	---
FD	F	5.0	5.0	5.0	5.0	---	---	---	---
	H1	4.5	4.5	4.5	4.5	---	---	---	---
	H2	2.0	2.0	2.0	2.0	---	---	---	---
	$\phi d \pm 0.05$	0.45	0.5	0.5	0.5	---	---	---	---
	E	1.12	1.12	1.12	1.30	---	---	---	---
KD	F	---	---	---	---	5.0	5.0	7.5	7.5
	H1	---	---	---	---	4.5	4.5	4.5	4.5
	H2	---	---	---	---	2.0	2.0	2.0	2.0
	$\phi d \pm 0.05$	---	---	---	---	0.6	0.6	0.8	0.8
	E	---	---	---	---	1.32	1.32	1.32	1.32
EC	F	5.0	5.0	5.0	5.0	---	---	---	---
	F1	1.2	1.2	1.2	1.2	---	---	---	---
	H1	4.0	4.0	4.0	4.0	---	---	---	---
	H2	1.8	1.8	1.8	1.8	---	---	---	---
	$\phi d \pm 0.05$	0.45	0.5	0.5	0.5	---	---	---	---
PC	F	---	2.0	2.5	3.5	5.0	5.0	7.5	7.5
	H	---	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	H1	---	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	$\phi d \pm 0.05$	---	0.5	0.5	0.5	0.6	0.6	0.8	0.8