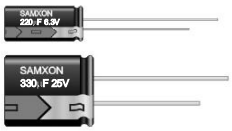
SAMXON®

+105°C, High Ripple Current(高紋波), Lowest Impedance(更低阻抗品)

FEATURES

1. Load life of 2000~5000 hours at 105°C.
2. Enabled high ripple current by a reduction of impedance at high frequency range.
3. Lowest impedance for personal computer and storage equipment.



SPECIFICATIONS

Item	Performance Characteristics
Operating Temperature Range	-40 to +105°C
Rated Working Voltage Range	6.3 to 25V
Nominal Capacitance Range	100 to 3900 μF
Capacitance Tolerance	±20% (120Hz, +20°C)
Leakage Current	I ≤ 0.01CV or 3(μA) after 2 minutes whichever is greater measured with rated working voltage at +20°C

tan δ (120Hz, +20°C)

Working Voltage (V)	6.3	10	16	25
tan δ (max.)	0.22	0.19	0.16	0.14

When nominal capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value increase with of every 1000μF

Low Temperature Characteristics

Impedance ratio max. at 120Hz

Working Voltage (V)	6.3	10	16	25
Z-25°C / Z+20°C	2	2	2	2

High Temperature Loading

Test conditions

Duration :	φD	6.3	8	10	12.5
	Load life	2000h	3000h	4000h	5000h

Ambient temp. : +105°C

Applied voltage : Rated DC working voltage with max. ripple current

Post test requirements at +20°C

Leakage current : ≤ Initial specified value

Cap. change : within ±25% of initial measured value

tan δ : ≤ 200% of initial specified value

Shelf Life

Test conditions

Duration : 1000 hours

Ambient temp. : +105°C

Applied voltage : (None)

Post test requirements at +20°C

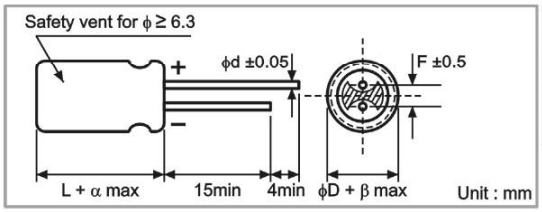
Leakage current : ≤ Initial specified value

Cap. change : within ±25% of initial measured value

tan δ : ≤ 200% of initial specified value

Others	JIS C - 5101 (IEC 60384)

CASE SIZE TABLE



φD	6.3	8(L < 20)	8(L≥20)	10	12.5
F	2.5	3.5		5.0	5.0
φd	0.5		0.6	0.6	
α	(L < 20) 1.5			(L ≥ 20) 2.0	
β	(D < 20) 0.5			(D ≥ 20) 1.0	

RIPPLE CURRENT MULTIPLIER

Frequency Coefficient

Cap(μF) \ Freq.(Hz)	120	1k	10k	100k
100 ~ 180	0.40	0.75	0.90	1.00
220 ~ 560	0.50	0.85	0.94	1.00
680 ~ 1800	0.60	0.87	0.95	1.00
2200 ~ 3900	0.75	0.90	0.95	1.00

PART NUMBER SYSTEM(EXAMPLE:25V220μF)

1 2 3	4 5 6	7	8 9	10	11 12	13 14
E	GK	227	M	1E	F	12	RR

- 13 14 RR — Type(Radial bulk)
- 11 12 12 — Case Length(12mm)
- 10 F — Diameter(8mm)
- 8 9 1E — Voltage(25V)
- 7 M — Tolerance(±20%)
- 4 5 6 227 — Capacitance(220μF)
- 2 3 GK — Series
- 1 E — E-CAP

SAMXON®

+105°C, High Ripple Current(高紋波), Lowest Impedance(更低阻抗品)

STANDARD RATINGS

Voltage (Code)		6.3V (0J)			10V (1A)			16V (1C)		
Cap.(μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
120	127							6.3 x 11	0.130	405
150	157									
180	187									
220	227	6.3 x 11	0.130	405	6.3 x 11	0.130	405	8 x 12	0.072	760
330	337	6.3 x 11	0.130	405	8 x 12	0.072	760	8 x 12	0.072	760
470	477	8 x 12	0.072	760	8 x 12	0.072	760	8 x 16	0.056	995
								10 x 12.5	0.053	1030
560	567	8 x 12	0.072	760						
680	687				8 x 16	0.056	995	8 x 20	0.041	1250
					10 x12.5	0.053	1030	10 x 16	0.038	1430
820	827	8 x 16	0.056	995						
1000	108	10 x 12.5	0.053	1030	8 x 20	0.041	1250	10 x 20	0.023	1820
					10 x 16	0.038	1430			
1200	128	8 x 20	0.041	1250	10 x 20	0.023	1820	10 x 25	0.022	2150
		10 x 16	0.038	1430						
1500	158	10 x 20	0.023	1820	10 x 25	0.022	2150	12.5 x 20	0.021	2360
2200	228	10 x 25	0.022	2150	12.5 x 20	0.021	2360	12.5 x 25	0.018	2770
3300	338	12.5 x 20	0.021	2360	**12.5 x 25**	**0.018**	**2770**			
3900	398	12.5 x 25	0.018	2770						

Maximum Allowable Ripple Current (mA rms) at 105°C **100kHz**
Maximum Impedance (Ω) at 20°C **100kHz**

Case Size ϕD x L(mm)

Voltage (Code)		25V (1E)								
Cap.(μF)	Code	Case Size	Impedance	Ripple Current						
100	107	6.3 x 11	0.130	405						
220	227	8 x 12	0.072	760						
330	337	8 x 16	0.056	995						
		10 x 12.5	0.053	1030						
470	477	8 x 20	0.041	1250						
		10 x 16	0.038	1430						
680	687	10 x 20	0.023	1820						
820	827	10 x 25	0.022	2150						
1000	108	12.5 x 20	0.021	2360						
1500	158	12.5 x 25	0.018	2770						

Maximum Allowable Ripple Current (mA rms) at 105°C **100kHz**
Maximum Impedance (Ω) at 20°C **100kHz**

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
E G S	1 0 5	M	1 H	D 1 1	T C	S A	P
SERIES	CAPACITANCE	TOL.	VOLTAGE	CASE SIZE	TYPE	PRODUCT LINE	SLEEVE MATERIAL

Series
ESM
ETM
EKF
ESS
ETS
EKS
EBS
EGR
EGS
EKM
EKG
EZM
EZS
EGZ
EGF
EGK
EGE
EGD
EGC
EGA
ERS
ERF
ERL
ERR
ERT
ERD
EBD
ELM
ELF
ELS
ELZ
ELK
ELL
ELT
ELN
EFM
EFS
EFA
EFN
ENM
ENS
ENQ
ENP
ENH
EBP
EBH
EPF
EPS
ELP
EAP
EHP
EKP
EEP
EFP
ESP
EWR
EWT
EWX
EWF
EWH
VSS
VNS
VKS
VKM
VNH
VZS
VRF

Cap(MFD)	Code
0.1	104
0.22	224
0.47	474
1	105
2.2	225
3.3	335
4.7	475
10	106
22	226
33	336
47	476
100	107
125	1B7
220	227
330	337
470	477
2200	228
22000	229
33000	339
47000	479
100000	10T
150000	15T
220000	22T
330000	33T
1000000	10M
1500000	15M
2200000	22M

Tolerance (%)	Code
±5	J
±10	K
+10 -20	C
±15	L
±30	N
±20	M
+100 0	P
+30 -10	Q
+20 0	R
+50 -10	T
+75 -10	U
+20 -10	V
+100 -10	W
+40 -20	X
+50 -20	S
+80 -20	Z

Voltage (W.V.)	Code
4	0G
6.3	0J
10	1A
16	1C
20	1D
25	1E
35	1V
40	1G
42	1M
50	1H
57	1L
63	1J
71	1S
75	1T
80	1K
85	1R
100	2A
125	2B
150	2Z
160	2C
180	2P
200	2D
220	2N
250	2E
315	2F
330	2U
350	2V
360	2X
375	2Q
385	2Y
400	2G
420	2M
450	2W
500	2H
550	25
600	26
630	2J

Case Size Eg .5mmx11mm D (Diameter Code) 11 (Case Length)	
Diameter(ϕ)	Code
3	B
4	C
5	D
6.3	E
8	F
10	G
12.5	I
16	K
18	L
20	M
22	N
25	O
30	P
35	Q
50	S
63	T
76	U
90	X
Len. (mm)	Code
5	05
5.4	54
7	07
10.2	T2
11	11
12.5	1B
20	20
25	25
30	30
35	35
50	50
80	80
100	1L
105	1K
110	1M
120	1N
130	1P
140	1Q
145	1D
150	1R
160	1S
170	1T
180	1U
190	1V
200	2L
210	2M
220	2N
250	2R
270	2T

Feature	Code
Radial bulk	RR
Ammo Taping	
2.5mm Pitch	TU
3.5mm Pitch	TV
5mm Pitch	TC
Lead Cut & Form	
CE-Type	CE
HE-Type	HE
KD-Type	KD
FD-Type	FD
EH-Type	EH
PCB Terminal	
Snap-in	SW SX SZ
Lug	SG
Screw	OO OD

Product Line
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.

Sleeve Material	Code
PET	P
PVC	If the sleeve material is PVC, there will be blank in seventeenth digit.

Tapping Specifications(編帶產品規格)

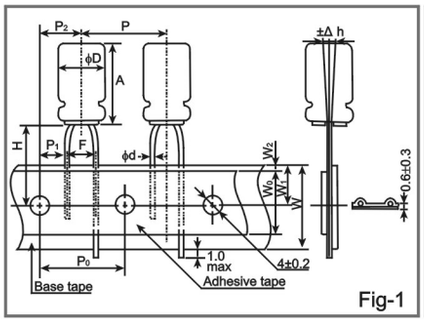


Fig-1

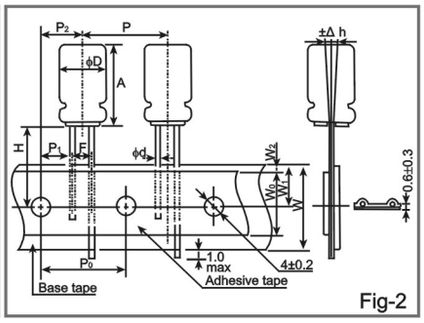


Fig-2

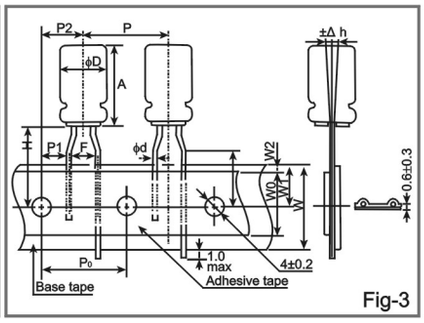
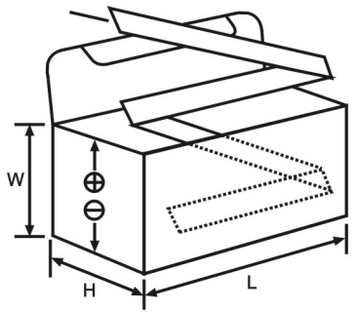


Fig-3

SPECIFICATIONS

Item		Dimemsion (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

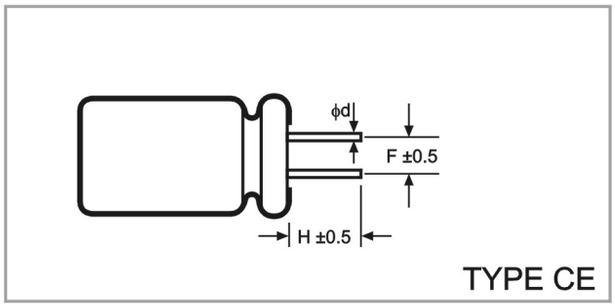
ϕD x L (mm)	Plastic Bag Quantity	Inner Box Quantity	Outer Box Quantity
3 x 5	2000 +3 -0	24000	96000
4 x 5~7	1000 +3 -0	16000	64000
5 x5~7	1000 +3 -0	14000	56000
5 x 11	1000 +3 -0	10000	40000
6.3 x 5~7	1000 +3 -0	10000	40000
6.3 x 11	1000 +3 -0	8000	32000
8 x 5	1000 +3 -0	10000	40000
8 x 7~9, 6.3 x 15	500 +1 -0	6000	24000
8 x 12	500 +1 -0	5000	20000
10 x 12.5	500 +1 -0	3000	12000
8 x 20	250 +1 -0	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)

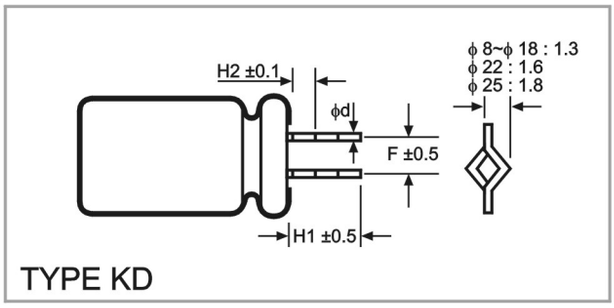
Snap-in Terminal Product

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

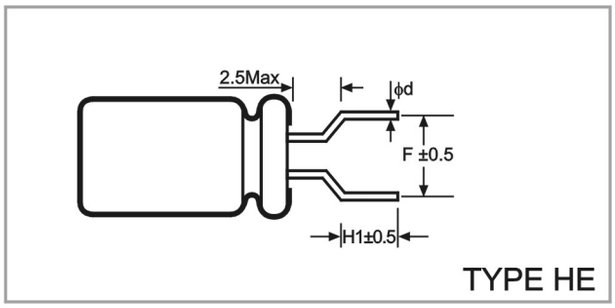
Lead Forming Specification(成型產品規格)



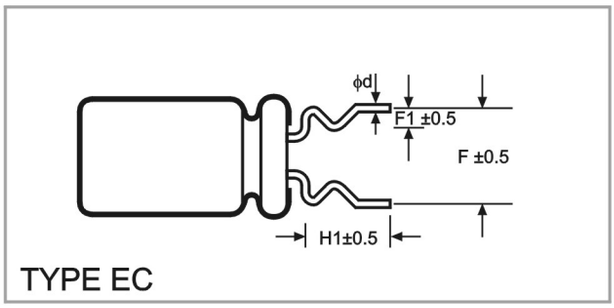
TYPE CE



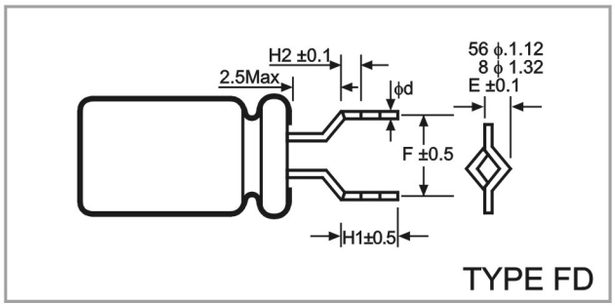
TYPE KD



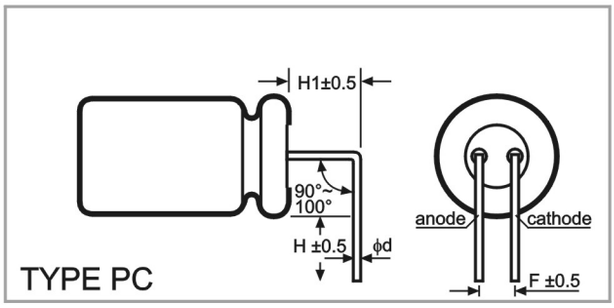
TYPE HE



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
	ϕd ±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	-----	-----	-----	-----
	ϕd ±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	-----	-----	-----	-----
	ϕd ±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
	ϕd ±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	-----	-----	-----	-----
	ϕd ±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
	ϕd ±0.05	-----	0.5	0.5	0.5	0.6	0.6	0.8	0.8