

USG SERIES

85°C Standard

•Load Life : 85°C 3000 hours.

RoHS
compliance



◆SPECIFICATIONS

Items	Characteristics																																							
Category Temperature Range	-40~+85℃					-25~+85℃																																		
Rated Voltage Range	10~250Vdc					400~450Vdc																																		
Capacitance Tolerance	±20% (20℃, 120Hz)																																							
Leakage Current(MAX)	I=3 √CV (After 5 minutes application of rated voltage) I=Leakage Current(μA) C=Capacitance(μF) V=Rated Voltage(Vdc)																																							
Dissipation Factor(MAX) (tanδ)	<table><tr><td>Rated Voltage (Vdc)</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100~ 450</td></tr><tr><td>tanδ</td><td>0.55</td><td>0.50</td><td>0.45</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.20</td></tr></table>									Rated Voltage (Vdc)	10	16	25	35	50	63	80	100~ 450	tanδ	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	(20℃, 120Hz)												
Rated Voltage (Vdc)	10	16	25	35	50	63	80	100~ 450																																
tanδ	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20																																
Endurance	After applying rated voltage with rated ripple current for 3000 hours at 85℃, the capacitors shall meet the following requirements. <table><tr><td>Capacitance Change</td><td colspan="9">Within ±20% of the initial value.</td></tr><tr><td>Dissipation Factor</td><td colspan="9">Not more than 200% of the specified value.</td></tr><tr><td>Leakage Current</td><td colspan="9">Not more than the specified value.</td></tr></table>										Capacitance Change	Within ±20% of the initial value.									Dissipation Factor	Not more than 200% of the specified value.									Leakage Current	Not more than the specified value.								
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Low Temperature Stability Impedance Ratio(MAX)	<table><tr><td>Rated Voltage (Vdc)</td><td>10~100</td><td>160~250</td><td>400</td><td>420~450</td></tr><tr><td>Z(-25℃)/Z(20℃)</td><td>3</td><td>4</td><td>8</td><td>12</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>12</td><td>12</td><td>—</td><td>—</td></tr></table>									Rated Voltage (Vdc)	10~100	160~250	400	420~450	Z(-25℃)/Z(20℃)	3	4	8	12	Z(-40℃)/Z(20℃)	12	12	—	—	(120Hz)															
Rated Voltage (Vdc)	10~100	160~250	400	420~450																																				
Z(-25℃)/Z(20℃)	3	4	8	12																																				
Z(-40℃)/Z(20℃)	12	12	—	—																																				

◆MULTIPLIER FOR RIPPLE CURRENT

Frequency (Hz)	60 (50)	120 (100)	300	500	1k	10k≤
Coefficient						
10~100Vdc	0.90	1.00	1.03	1.05	1.10	1.15
160~250Vdc	0.80	1.00	1.15	1.20	1.30	1.50
400~450Vdc	0.80	1.00	1.15	1.20	1.25	1.40

◆OPTION

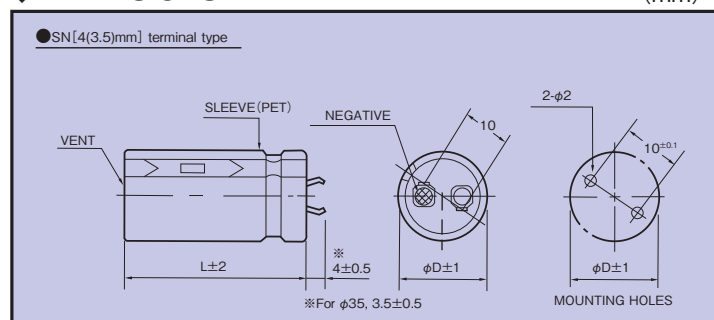
	Code
PET Sleeve without plate	EFC

◆PART NUMBER

□□□ Rated Voltage USG Series □□□□□ Capacitance M Capacitance Tolerance □□□ Option SN Terminal Code D×L Case Size

◆DIMENSIONS

(mm)



◆ STANDARD SIZE

Cap (μ F)	Vdc ϕ D	10					16				
		ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35	ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35
8200							20x25: 2.56				
10000		20x25: 2.22					20x30: 2.85	22x25: 2.85			
12000		20x30: 2.44	22x25: 2.41				20x35: 3.20	22x30: 3.20			
15000		20x35: 2.90	22x30: 2.88	25x25: 2.88			20x40: 3.70	22x35: 3.70	25x25: 3.70		
18000		20x40: 3.31	22x35: 3.22	25x30: 3.08				22x40: 3.98	25x30: 3.98		
22000			22x40: 3.79	25x30: 3.66	30x25: 3.58			22x45: 4.52	25x35: 4.52	30x25: 4.52	
27000			22x45: 4.04	25x35: 4.04	30x30: 3.99			22x50: 4.98	25x40: 4.98	30x30: 4.98	
33000			22x50: 4.58	25x40: 4.56	30x30: 4.58				25x45: 5.49	30x35: 5.49	35x30: 5.49
39000				25x45: 5.29	30x35: 5.21	35x30: 5.05			25x50: 6.11	30x40: 6.11	35x35: 6.11
47000				25x50: 5.78	30x40: 5.78	35x35: 5.55				30x45: 6.80	35x35: 6.80
56000					30x45: 6.59	35x35: 6.40				30x50: 7.62	35x40: 7.62
68000					30x50: 7.50	35x40: 7.48					35x45: 8.45
82000						35x50: 8.50					35x50: 9.14

Cap (μ F)	Vdc ϕ D	25					35				
		ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35	ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35
3300							20x25: 2.14				
3900							20x30: 2.28				
4700							20x35: 2.46	22x25: 2.46			
5600		20x25: 2.33					20x40: 2.79	22x30: 2.79	25x25: 2.79		
6800		20x30: 2.56	22x25: 2.56					22x35: 2.89	25x30: 2.89		
8200		20x35: 2.91	22x30: 2.91					22x40: 3.47	25x30: 3.47	30x25: 3.47	
10000		20x40: 3.18	22x35: 3.18	25x25: 3.18				22x45: 3.59	25x35: 3.59	30x30: 3.59	
12000			22x40: 3.53	25x30: 3.53				22x50: 4.51	25x40: 4.51	30x30: 4.51	
15000			22x45: 4.08	25x35: 4.08	30x25: 4.08				25x45: 4.80	30x35: 4.80	35x30: 4.80
18000			22x50: 4.68	25x40: 4.68	30x30: 4.68					30x40: 5.70	35x35: 5.70
22000				25x45: 5.19	30x35: 5.19	35x30: 5.19				30x45: 6.38	35x40: 6.38
27000				25x50: 6.02	30x40: 6.02	35x35: 6.02					35x45: 6.90
33000					30x45: 6.75	35x40: 6.75					35x50: 7.49
39000					30x50: 7.56	35x45: 7.56					
47000						35x50: 8.30					

Cap (μ F)	Vdc ϕ D	50					63				
		ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35	ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35
1500							20x25: 1.69				
1800							20x30: 2.04	22x25: 2.04			
2200		20x25: 2.07					20x35: 2.40	22x30: 2.40			
2700		20x30: 2.21	22x25: 2.21				20x40: 2.52	22x35: 2.52	25x25: 2.52		
3300		20x35: 2.41	22x30: 2.41					22x40: 2.69	25x30: 2.69		
3900		20x40: 2.72	22x30: 2.72	25x25: 2.72				22x45: 3.10	25x35: 3.10	30x25: 3.10	
4700			22x35: 3.01	25x30: 3.01				22x50: 3.49	25x40: 3.49	30x30: 3.49	
5600			22x40: 3.43	25x35: 3.43	30x25: 3.43				25x45: 3.81	30x35: 3.81	
6800			22x45: 3.94	25x35: 3.94	30x30: 3.94				25x50: 4.41	30x40: 4.41	35x30: 4.41
8200				25x40: 4.37	30x35: 4.37					30x45: 4.90	35x35: 4.90
10000				25x50: 5.02	30x40: 5.02	35x30: 5.02				30x50: 5.49	35x40: 5.49
12000					30x45: 5.60	35x35: 5.60					35x45: 6.30
15000					30x50: 6.44	35x40: 6.44					
18000						35x45: 6.71					

↑ Ripple Current (A r.m.s./120Hz, 85°C)
 ↑ Case Size ϕ D×L(mm)

◆ STANDARD SIZE

Cap (μ F)	Vdc ϕ D	80					100				
		ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35	ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35
680							20x25: 1.66				
820							20x30: 1.86	22x25: 1.86			
1000		20x25: 1.56					20x30: 2.02	22x30: 2.02			
1200		20x30: 1.80	22x25: 1.80				20x35: 2.12	22x30: 2.12	25x25: 2.12		
1500		20x30: 2.10	22x30: 2.10				20x40: 2.45	22x35: 2.45	25x30: 2.45		
1800		20x35: 2.30	22x30: 2.30	25x25: 2.30				22x40: 2.77	25x30: 2.77	30x25: 2.77	
2200		20x40: 2.53	22x35: 2.53	25x30: 2.53				22x45: 3.12	25x35: 3.12	30x30: 3.12	
2700			22x40: 2.93	25x35: 2.93	30x25: 2.93				25x40: 3.61	30x30: 3.61	
3300			22x45: 3.25	25x35: 3.25	30x30: 3.25				25x50: 4.06	30x35: 4.06	35x30: 4.06
3900				25x40: 3.62	30x35: 3.62					30x40: 4.60	35x35: 4.60
4700				25x45: 4.28	30x40: 4.28	35x30: 4.28				30x45: 5.13	35x40: 5.13
5600					30x45: 4.55	35x35: 4.55					35x45: 5.75
6800					30x45: 5.83	35x40: 5.83					35x50: 6.01
8200						35x45: 6.40					
10000						35x50: 7.03					

Cap (μ F)	Vdc ϕ D	160					180				
		ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35	ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35
390		20x25: 1.19					20x25: 1.84				
470		20x30: 1.76	22x25: 1.76				20x30: 2.08	22x25: 2.08			
560		20x30: 2.25	22x25: 2.25				20x35: 2.25	22x30: 2.25			
680		20x35: 2.50	22x30: 2.50	25x25: 2.50			20x40: 2.50	22x35: 2.50	25x25: 2.50		
820		20x40: 2.75	22x35: 2.75	25x30: 2.75			20x45: 2.75	22x40: 2.75	25x30: 2.75		
1000			22x40: 3.00	25x30: 3.00	30x25: 3.00			22x45: 3.00	25x35: 3.00	30x25: 3.00	
1200			22x45: 3.25	25x35: 3.25	30x30: 3.25			22x50: 3.31	25x40: 3.31	30x30: 3.31	35x25: 3.31
1500				25x45: 3.73	30x35: 3.73				25x50: 3.83	30x35: 3.83	35x30: 3.83
1800				25x50: 4.20	30x35: 4.20	35x30: 4.20				30x40: 4.32	35x35: 4.32
2200					30x45: 4.78	35x35: 4.78				30x50: 4.92	35x40: 4.92
2700					30x50: 5.45	35x40: 5.45					35x45: 5.52
3300						35x45: 5.75					

Cap (μ F)	Vdc ϕ D	200					220				
		ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35	ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35
270							20x25: 1.42				
330		20x25: 1.44					20x30: 1.58	22x25: 1.58			
390		20x30: 1.68	22x25: 1.68				20x35: 1.75	22x30: 1.75			
470		20x35: 1.93	22x30: 1.93	25x25: 1.93			20x35: 1.99	22x30: 1.99	25x25: 1.99		
560		20x35: 2.43	22x30: 2.43	25x25: 2.43			20x40: 2.28	22x35: 2.28	25x30: 2.28		
680		20x40: 2.68	22x35: 2.68	25x30: 2.68	30x25: 2.68			22x40: 2.46	25x30: 2.46	30x25: 2.46	
820			22x40: 2.93	25x30: 2.93	30x25: 2.93			22x45: 2.81	25x35: 2.81	30x30: 2.81	
1000			22x45: 3.25	25x35: 3.25	30x30: 3.25	35x25: 3.25			25x45: 3.29	30x30: 3.29	
1200				25x45: 3.50	30x35: 3.50	35x30: 3.50			25x50: 3.60	30x35: 3.60	35x30: 3.60
1500				25x50: 3.87	30x40: 3.87	35x30: 3.87				30x45: 3.92	35x35: 3.92
1800					30x45: 4.32	35x35: 4.32				30x50: 4.30	35x40: 4.30
2200					30x50: 4.92	35x40: 4.92					35x50: 4.95
2700						35x50: 5.45					

↑ Ripple Current (A r.m.s./120Hz, 85°C)
 ↑ Case Size ϕ D×L(mm)

◆ STANDARD SIZE

Cap (μ F)	Vdc ϕ D	250					400				
		ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35	ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35
82							20x25: 0.80				
100							20x30: 0.94	22x25: 0.94			
120							20x30: 1.08	22x25: 1.08			
150							20x35: 1.21	22x30: 1.21	25x25: 1.21		
180							20x40: 1.45	22x35: 1.45	25x25: 1.45		
220		20x25: 1.23						22x40: 1.58	25x30: 1.58	30x25: 1.58	
270		20x30: 1.31	22x25: 1.31					22x45: 1.67	25x35: 1.67	30x25: 1.67	
330		20x30: 1.75	22x25: 1.75					22x50: 1.90	25x40: 1.90	30x30: 1.90	35x25: 1.90
390		20x35: 1.91	22x30: 1.91	25x25: 1.91					25x45: 2.13	30x35: 2.13	35x30: 2.13
470		20x40: 2.11	22x35: 2.11	25x25: 2.11					25x50: 2.39	30x40: 2.39	35x30: 2.39
560			22x40: 2.25	25x30: 2.25	30x25: 2.25					30x45: 2.69	35x35: 2.69
680			22x45: 2.50	25x35: 2.50	30x30: 2.50						35x40: 2.96
820				25x40: 2.77	30x30: 2.77	35x25: 2.77					35x50: 3.25
1000				25x45: 3.32	30x35: 3.32	35x30: 3.32					
1200					30x40: 3.84	35x35: 3.84					
1500					30x50: 4.25	35x40: 4.25					
1800						35x45: 4.55					

Cap (μ F)	Vdc ϕ D	420					450				
		ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35	ϕ 20	ϕ 22	ϕ 25	ϕ 30	ϕ 35
68							20x25: 0.66				
82		20x25: 0.83					20x25: 0.83				
100		20x30: 0.97	22x25: 0.97				20x30: 0.93	22x25: 0.93			
120		20x30: 1.08	22x25: 1.08				20x35: 1.04	22x30: 1.04	25x25: 1.04		
150		20x35: 1.30	22x30: 1.30	25x25: 1.30			20x40: 1.29	22x35: 1.29	25x25: 1.29		
180		20x40: 1.48	22x35: 1.48	25x30: 1.48				22x40: 1.40	25x30: 1.40	30x25: 1.40	
220			22x40: 1.65	25x35: 1.65	30x25: 1.65			22x45: 1.66	25x35: 1.66	30x25: 1.66	
270			22x50: 1.94	25x35: 1.94	30x30: 1.94			22x50: 1.81	25x40: 1.81	30x30: 1.81	35x25: 1.81
330				25x45: 2.17	30x35: 2.17	35x30: 2.17			25x45: 2.10	30x35: 2.10	35x30: 2.10
390				25x50: 2.27	30x35: 2.27	35x30: 2.27				30x40: 2.32	35x35: 2.32
470					30x40: 2.61	35x35: 2.61				30x45: 2.66	35x40: 2.66
560					30x50: 2.82	35x40: 2.82					35x40: 2.82
680						35x45: 3.11					35x50: 3.00

↑ ↑ Ripple Current (A r.m.s./120Hz, 85°C)
Case Size ϕ D×L(mm)