

# GMS Series

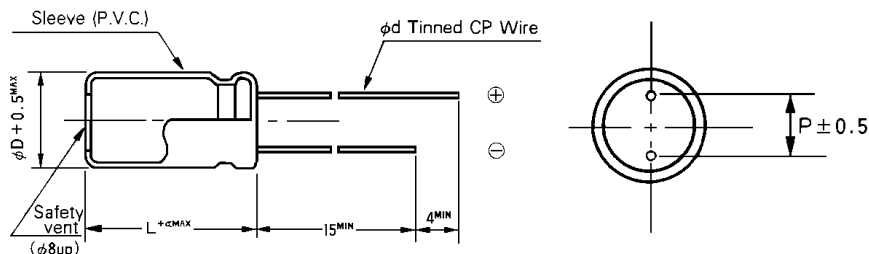


## Features

- \* Wide temperature range.
- \* 2000 Hours lifetime at 105°C (D>=10mm)
- \* Solvent proof

Item	Performance Characteristics					
Operating Temperature Range	-55 to +105°C		-40 to +105°C		-25 to 105°C	
Working Voltage Range	6.3 to 100 Volts D.C.		160 to 400 Volts D.C.		450 Volts D.C.	
Nominal Capacitance Range	0.1 to 22000 uF					
Capacitance Tolerance	+/- 20 % ( 120 Hz, 20°C)					
Leakage Current (+20°C)	6.3V to 100 V			160V to 450 V		
	I=0.03CV or 4uA whichever is greater after 1 min. application of rated voltage.			CV<=1000: I=0.1CV +40 uA or less after 1 min. application of rated voltage.		
Dissipation Factor % (120 Hz, +20°C)	Less than the value below					
	WVDC	6.3	10	16	25	35
	tan d (Max)	0.24	0.2	0.16	0.14	0.12
	WVDC	50	63	100	160-350	400-450
Temperature Characteristics	Impedence Ratio at 120 Hz					
	WVDC	6.3	10	16	25	35
	Z(-25°C) / Z(+20°C)	4	3	2	2	2
	Z(-40°C) / Z(+20°C)	8	6	4	3	3
	WVDC	50-100	160-200	250	315-400	450
	Z(-25°C) / Z(+20°C)	2	2	3	3	5
Load Life	<u>Test conditions</u>					
	Duration time:	2000 Hrs				
	Ambient temperature:	+105°C				
	Applied voltage:	Rated working voltage				
	Ripple Current:	Maximum rated ripple current.				
	<u>After testing--Measure at 20°C</u>					
Capacitance change:	<= +/- 20% of initial measured value					
Dissipation factor:	<= 200% of initial specified value					
Leakage current:	<= The initial specified value					
Shelf Life	<u>Test Conditions</u>					
	Duration time:	500 Hrs				
	Ambient temperature:	+105°C				
	Applied voltage:	None				
	<u>After testing--Measure at 20°C</u>					
Same limits as for load life.			Pretreatment before testing: According to JIS C-5102 4-3			
Marking	White print on black sleeve					
Applicable Standards	Characteristic W of JIS C-5141					

## Physical Dimensions and Mounting Details



Ø D	5	6.3	8	10	12.5	16	18	22
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
Ø d	0.5	0.5	0.5	0.6	0.6	0.8	0.8	0.8
a <= 100 WV	1.0	1.0	1.0	1.5	1.5	1.5	1.5	2.0
a >= 160 WV		1.5	1.5	2.0	2.0	2.0	2.0	2.5

# GMS Series



Ir (mA) specified at 105°C and 120 Hz

**GMS Standard Products Table 6.3 to 35 Volt**

uF	6.3V		10 V		16 V		25 V		35 V	
	Dia x L	Ir(mA)	Dia x L	Ir(mA)	Dia x L	Ir(mA)	Dia x L	Ir(mA)	Dia x L	Ir(mA)
4.7							5 x 11	20	5 x 11	25
10					5 x 11	35	5 x 11	40	5 x 11	45
22	5 x 11	30	5 x 11	50	5 x 11	60	5 x 11	65	5 x 11	70
33	5 x 11	50	5 x 11	65	5 x 11	75	5 x 11	80	5 x 11	85
47	5 x 11	70	5 x 11	80	5 x 11	90	5 x 11	95	6.3 x 11	110
100	5 x 11	105	5 x 11	115	6.3 x 11	140	6.3 x 11	150	8 x 11.5	190
100(S)									6.3 x 11	180
220	6.3 x 11	170	6.3 x 11	190	8 x 11.5	240	8 x 11.5	260	10 x 12.5	330
330	6.3 x 11	200	8 x 11.5	270	8 x 11.5	300	10 x 12.5	380	10 x 16	450
470	8 x 11.5	290	8 x 11.5	320	10 x 12.5	420	10 x 16	490	10 x 20	580
1000	10 x 12.5	510	10 x 16	610	10 x 20	730	12.5 x 20	900	12.5 x 25	1030
1000(S)							10 x 20	770		
2200	12.5 x 20	980	12.5 x 20	1060	12.5 x 25	1250	16 x 25	1300	16 x 31.5	1420
3300	12.5 x 20	1150	12.5 x 25	1320	16 x 25	1420	16 x 31.5	1530	18 x 35.5	1620
4700	16 x 25	1390	16 x 25	1490	16 x 31.5	1650	18 x 35.5	1730	18 x 40	2090
6800	16 x 25	1570	16 x 31.5	1700	18 x 35.5	1830	22 x 36	2160	22 x 41	2380
10000	16 x 31.5	1790	18 x 35.5	1880	18 x 40	2290	22 x 41	2480		
15000	18 x 35.5	1960	18 x 40	2340	22 x 41	2560				
22000	22 x 36	2380	22 x 41	2600						

**GMS Standard Products Table 50 to 200 Volt**

uF	50V		63 V		100 V		160 V		200 V	
	Dia x L	Ir(mA)	Dia x L	Ir(mA)	Dia x L	Ir(mA)	Dia x L	Ir(mA)	Dia x L	Ir(mA)
0.1	5 x 11	1			5 x 11	2				
0.22	5 x 11	2			5 x 11	4				
0.33	5 x 11	3			5 x 11	7				
0.47	5 x 11	5			5 x 11	10	6.3 x 11	10	6.3 x 11	10
1	5 x 11	10			5 x 11	15	6.3 x 11	14	6.3 x 11	14
2.2	5 x 11	18			5 x 11	23	6.3 x 11	21	6.3 x 11	21
3.3	5 x 11	25			5 x 11	30	8 x 11.5	31	8 x 11.5	31
4.7	5 x 11	30	5 x 11	35	5 x 11	40	8 x 11.5	37	10 x 12.5	42
4.7(S)					6.3 x 11	40				
10	5 x 11	50	5 x 11	55	6.3 x 11	65	10 x 12.5	62	10 x 16	69
22	5 x 11	75	6.3 x 11	90	8 x 11.5	110	10 x 20	105	10 x 20	105
33	6.3 x 11	105	6.3 x 11	110	10 x 12.5	160	12.5 x 20	145	12.5 x 25	155
47	6.3 x 11	125	8 x 11.5	150	10 x 16	200	12.5 x 25	190	12.5 x 25	190
100	8 x 11.5	210	10 x 12.5	260	12.5 x 20	370	16 x 25	280	16 x 31.5	285
220	10 x 16	400	10 x 20	460	16 x 25	580	18 x 35.5	430	18 x 40	435
330	10 x 20	530	12.5 x 20	640	16 x 25	710	22 x 36	520	22 x 41	550
470	12.5 x 20	730	12.5 x 25	810	16 x 31.5	860	22 x 46	690		
680					18 x 35.5	935				
1000	16 x 25	1110	16 x 31.5	1190	18 x 40	1440				
2200	18 x 35.5	1530	18 x 40	1830						
3300	22 x 36	1970	22 x 41	2160						
4700	22 x 41	2320								

Ir (mA) specified at 105°C and 120 Hz

**GMS Standard Products Table 250 to 450 Volt**

uF	250V		315 V		350 V		400 V		450 V	
	Dia x L	Ir(mA)	Dia x L	Ir(mA)	Dia x L	Ir(mA)	Dia x L	Ir(mA)	Dia x L	Ir(mA)
0.47	6.3 x 11	10								
1	6.3 x 11	14	6.3 x 11	14	8 x 11.5	17	8 x 11.5	15	10 x 12.5	17
2.2	8 x 11.5	25	8 x 11.5	25	10 x 12.5	29	10 x 12.5	24	10 x 16	29
3.3	10 x 12.5	35	10 x 12.5	35	10 x 16	39	10 x 16	34	10 x 20	38
4.7	10 x 12.5	42	10 x 16	47	10 x 16	47	10 x 20	43	12.5 x 20	49
10	10 x 20	74	10 x 20	74	12.5 x 20	78	12.5 x 20	74	12.5 x 25	78
10(S)							10 x 20	80		
22	12.5 x 25	125	12.5 x 25	125	12.5 x 25	125	16 x 25	115	16 x 31.5	120
33	12.5 x 25	155	16 x 25	165	16 x 31.5	170	16 x 31.5	145	18 x 35.5	145
47	16 x 25	195	16 x 31.5	200	18 x 35.5	205	18 x 35.5	175	22 x 36	180
47(S)							16 x 31.5	250		
100	18 x 35.5	290	18 x 40	295	22 x 36	300	22 x 41	280		
220	22 x 36	440	22 x 46	480						
330	22 x 46	580								

Ripple Current Multipliers

Frequency

uF	WVDC	Freq.	50Hz	120Hz	300Hz	1KHz	>= 10 KHz
		<=47		0.75	1	1.35	1.57
100 ~ 470	6.3 to 100		0.80	1	1.23	1.34	1.50
100 ~ 22000			0.85	1	1.10	1.13	1.15
0.47 ~ 220	160 to 450		0.80	1	1.25	1.40	1.60
330 ~ 470			0.90	1	1.10	1.13	1.15

Temperature

Temp. °C	<=70	85	105
Multiplier	1.78	1.4	1