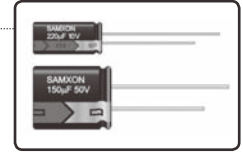


FEATURES

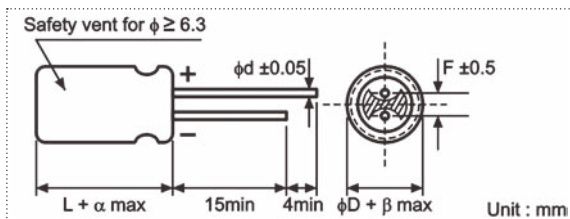
- Low impedance for high frequency.
- Load life of 4,000~10,000 hours at 105°C.



SPECIFICATIONS

Item	Performance Characteristics																	
Operating Temperature Range	-40 to +105°C																	
Rated Working Voltage Range	6.3 to 100V																	
Nominal Capacitance Range	15 to 3900µF																	
Capacitance Tolerance	±20% at 120Hz, +20°C																	
Leakage Current	$I \leq 0.01CV$ or 3 (µA) whichever is greater measured after 2 minutes application of rated working voltage at +20°C																	
tan δ (120Hz, +20°C)	Working Voltage (V)	6.3	10	16	25	35	50	63	100									
	tan δ (max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08									
For capacitance value >1000µF, add 0.02 per another 1000µF																		
Low Temperature Characteristics	Impedance ratio max. at 120Hz																	
	Rated Voltage (V)	6.3	10	16	25	35	50	63	100									
	Z-25°C / Z+20°C	4	3	2	2	2	2	2	2									
Z-40°C / Z+20°C										8	6	4	3	3	3	3	3	3
High Temperature Loading	Test time	ΦD	5-63	8-10	125	Post test requirements at +20°C												
		63-10WV	4,000h	6,000h	8,000h	Leakage current : ≤Initial specified value												
16-100WV										5,000h	7,000h	10,000h	Cap. change : within ±25% of the initial measured value					
Test temperature : +105°C										tan δ : ≤200% of the initial specified value								
Test conditions : Rated DC working voltage with rated ripple current																		
Shelf Life	At +105°C no voltage applied after 1,000 hours and then being stabilized at +20°C the capacitors shall meet the following limits																	
Leakage current : ≤Initial specified value																		
Cap. change : within ±25% of the initial measured value																		
tan δ : ≤200% of the initial specified value																		
Industrial Standard	JIS C - 5101-4 (IEC 60384-4)																	

CASE SIZE TABLE



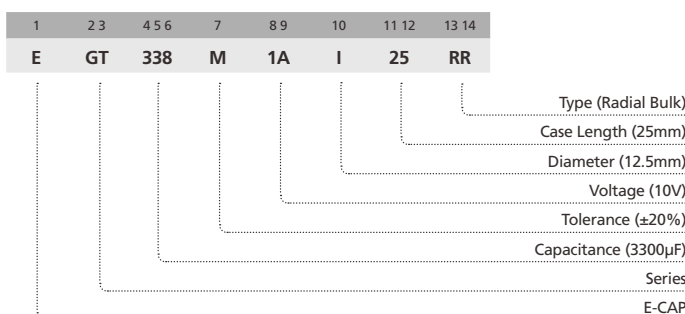
ΦD	6.3	8 (L <20)	8 (L ≥20)	10	12.5
F	2.5	3.5	3.5	5.0	5.0
Φd	0.5	0.5	0.6	0.6	0.6
α	(L <20) 1.5		(L ≥20) 2.0		
β	(D <20) 0.5		(D ≥20) 1.0		

RIPPLE CURRENT MULTIPLIER

Frequency Coefficient

Coefficient	50	120	300	1k	100k
Cap (µF)					
15~33	0.45	0.55	0.70	0.90	1.00
39~330	0.60	0.70	0.85	0.95	1.00
390~1000	0.65	0.75	0.90	0.98	1.00
1200~3900	0.75	0.80	0.95	1.00	1.00

PART NUMBER SYSTEM (EXAMPLE : 10V 3300µF)



+105°C, High Ripple Current (高紋波), Longer Life Assurance (較長壽命), Low Impedance (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	0.220	340
220	227				6.3 x 11	0.220	340	6.3 x 11	0.220	340
330	337	6.3 x 11	0.220	340				8 x 12	0.130	640
470	477				6.3 x 11	0.220	340	8 x 12	0.130	640
					8 x 12	0.130	640	8 x 16	0.087	840
680	687	8 x 12	0.130	640	8 x 16	0.087	840	8 x 16	0.087	840
					10 x 12.5	0.080	865	8 x 20	0.069	1050
820	827	10 x 12.5	0.080	865				10 x 16	0.060	1210
1000	108	8 x 16	0.087	840	8 x 20	0.069	1050	8 x 20	0.069	1050
		10 x 12.5	0.080	865	10 x 16	0.060	1210	10 x 16	0.060	1210
1200	128	10 x 20	0.069	1050	10 x 20	0.046	1400	10 x 20	0.046	1400
		10 x 16	0.060	1210				10 x 20	0.046	1400
1500	158	10 x 20	0.046	1400	10 x 25	0.042	1650	10 x 25	0.042	1650
								10 x 30	0.031	1910
2200	228	10 x 25	0.042	1650	12.5 x 20	0.035	1900	12.5 x 20	0.035	1900
2700	278	10 x 30	0.031	1910						
3300	338	12.5 x 20	0.035	1900	12.5 x 25	0.030	2124			
3900	398	12.5 x 25	0.030	2124						

Maximum Allowable Ripple Current (mArms) at 105°C 100kHz

Case Size ΦD x L (mm)

Maximum Impedance (Ω) at 20°C 100kHz

Voltage (Code)		25V (1E)			35V (1V)			50V (1H)		
Cap. (μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
56	566				6.3 x 11	0.220	340	6.3 x 11	0.300	295
100	107	6.3 x 11	0.220	340	6.3 x 11	0.220	340	8 x 12	0.170	555
120	127							8 x 16	0.120	730
150	157				8 x 12	0.130	640	10 x 12.5	0.120	760
					8 x 16	0.087	840	8 x 16	0.120	730
220	227	8 x 12	0.130	640	10 x 12.5	0.080	865	10 x 12.5	0.120	760
								10 x 16	0.084	1050
330	337	8 x 16	0.087	840	10 x 16	0.060	1210	10 x 16	0.084	1050
		10 x 12.5	0.080	865				10 x 25	0.055	1440
470	477	8 x 16	0.087	840	10 x 20	0.046	1400	10 x 20	0.060	1220
		8 x 20	0.069	1050				10 x 30	0.043	1690
560	567	10 x 16	0.060	1210	10 x 25	0.042	1650	12.5 x 20	0.045	1660
680	687	8 x 20	0.069	1050	10 x 30	0.031	1910	12.5 x 20	0.045	1660
		10 x 20	0.046	1400	12.5 x 20	0.035	1900			
820	827	10 x 25	0.042	1650				12.5 x 25	0.034	1950
		10 x 25	0.042	1650						
1000	108	10 x 30	0.031	1910	12.5 x 25	0.030	2124	12.5 x 25	0.034	1950
		12.5 x 20	0.035	1900						
1500	158	12.5 x 20	0.035	1900						
		12.5 x 25	0.030	2124						

Maximum Allowable Ripple Current (mArms) at 105°C 100kHz

Case Size ΦD x L (mm)

Maximum Impedance (Ω) at 20°C 100kHz

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.

STANDARD RATINGS

Voltage (Code)		63V (1J)			100V (2A)		
Cap. (µF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
15	156				6.3 x 11	0.960	115
27	276				8 x 12	0.504	232
33	336	6.3 x 11	0.960	115			
39	396				8 x 16	0.360	300
47	476				10 x 12.5	0.344	314
56	566	8 x 12	0.504	232	8 x 20	0.264	362
68	686	8 x 12	0.504	232	10 x 16	0.248	357
82	826	8 x 16	0.360	300	10 x 20	0.168	466
		10 x 12.5	0.344	314			
100	107				10 x 20	0.168	466
					10 x 25	0.160	531
120	127	8 x 20	0.264	362	10 x 30	0.120	663
		10 x 16	0.248	357	12.5 x 20	0.128	690
180	187	10 x 20	0.168	466	12.5 x 25	0.096	922
220	227	10 x 25	0.160	531			
270	277	10 x 20	0.168	466			
		10 x 30	0.120	663			
		12.5 x 20	0.128	690			
330	337	12.5 x 20	0.128	690			
		12.5 x 25	0.096	922			
470	477	12.5 x 25	0.096	922			

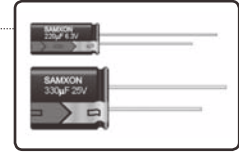
Maximum Allowable Ripple Current (mArms) at 105°C 100kHz

Case Size ϕ D x L (mm)

Maximum Impedance (Ω) at 20°C 100kHz

FEATURES

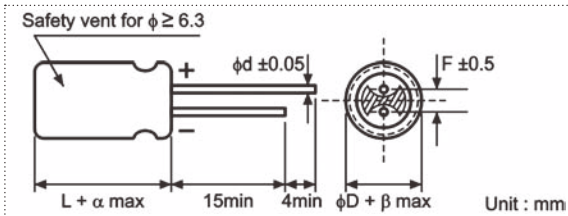
- Load life of 2,000~5,000 hours at 105°C.
- Enabled high ripple current by a reduction of impedance at high frequency range.
- Lowest impedance for personal computer and storage equipment.



SPECIFICATIONS

Item	Performance Characteristics					
Operating Temperature Range	-40 to +105°C					
Rated Working Voltage Range	6.3 to 25V					
Nominal Capacitance Range	100 to 3900µF					
Capacitance Tolerance	±20% at 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					
tan δ (120Hz, +20°C)	Working Voltage (V)	6.3	10	16	25	
	tan δ (max.)	0.22	0.19	0.16	0.14	
For capacitance value >1000µF, add 0.02 per another 1000µF						
Low Temperature Characteristics	Impedance ratio max. at 120Hz					
	Working Voltage (V)	6.3	10	16	25	
Z-25°C / Z+20°C						
High Temperature Loading	Test time	ΦD	6.3	8	10	12.5
	Load life		2,000h	3,000h	4,000h	5,000h
	Test temperature		+105°C			
Test conditions : Rated DC working voltage with rated ripple current						
Post test requirements at +20°C						
Leakage current : ≤ Initial specified value						
Cap. change : within ±25% of the initial measured value						
tan δ : ≤ 200% of the initial specified value						
Shelf Life	At +105°C no voltage applied after 1,000 hours and then being stabilized at +20°C the capacitors shall meet the following limits					
Leakage current : ≤ Initial specified value						
Cap. change : within ±25% of the initial measured value						
tan δ : ≤ 200% of the initial specified value						
Industrial Standard	JIS C - 5101-4 (IEC 60384-4)					

CASE SIZE TABLE



ΦD	6.3	8 (L < 20)	8 (L ≥ 20)	10	12.5
F	2.5	3.5	3.5	5.0	5.0
φd	0.5	0.5	0.6	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

Coefficient	120	1k	10k	100k
Cap (µF)				
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 : 25V 220µF)

1	23	456	7	89	10	11 12	13 14
E	GK	227	M	1E	F	12	RR

