

產品特點 Features

High ripple current and high reliability.
Low equivalent series resistance ESR.
Load life with ripple current : 5,000 hours.
高紋波高可靠性高頻低阻的105℃長壽命5000H品。



規格書 SPECIFICATIONS

項目 Item	特性參數 Characteristics								
使用溫度範圍 Operating Temperature Range	-40 to +105℃					-25 to +105℃			
額定電壓範圍 Rated Working Voltage Range	10 to 100V					200 to 450V			
容量範圍 Nominal Capacitance Range	100 to 33000 μ F								
容量允許偏差 Capacitance Tolerance	± 20% at 120Hz, +20℃								
漏電流 Leakage Current	I ≤3 √CV (μ A) after 5 minutes application of rated working voltage at +20℃								
損耗角正切值(20℃,120Hz) tan δ (120Hz, +20℃)	Working Voltage (V)	10	16	25	35	50	63~100	200~400	450
	tan δ (max.)	0.60	0.45	0.30	0.25	0.20	0.15	0.15	0.20
低溫特性 Low Temperature Characteristics	Impedance ratio max. at 120Hz								
	Working Voltage (V)	10	16	25	35	50	63~100		
	Z-25℃ / Z+20℃	6	6	6	6	4	3		
	Z-40℃ / Z+20℃	15	15	15	15	15	15		
	Working Voltage (V)	200	250	400	450				
	Z-25℃ / Z+20℃	8	8	8	8				
高溫負荷特性 High Temperature Loading	在105℃的前提下施加額定電壓與額定紋波5000H,然後取出恢復常溫後測試 Test time :5,000 hours Test temperature:+105℃ Test conditions:Rated DC working voltage with rated ripple current Post test requirements at +20℃								
	Leakage current	≤ Initial specified value							
	Cap. change	within ± 20% of the initial measured value							
	tan δ	≤200% of the initial specified value							
高溫貯存特性 Shelf Life	在105℃不加電壓放存1000H後取出，待產品恢復常溫後測試 At +105℃ no voltage applied after 1,000 hours and then being stabilized at +20℃ the capacitors shall meet the following limits								
	Leakage current	≤ Initial specified value							
	Cap. change	within ± 15% of the initial measured value							
	tan δ	≤150% of the initial specified value							
參考國際標準 Industrial Standard	JIS C – 5101-4 (IEC 60384-4)								

紋波電流修正系數 RIPPLE CURRENT MULTIPLIER

Frequency Coefficient

Coefficient Freq. (Hz) Rated Voltage	60	120	1k	10k~50k
10~100V	0.90	1.00	1.15	1.25
160~250V	0.80	1.00	1.25	1.47
315~450V	0.80	1.00	1.30	1.47

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一覽表 Standard

Voltage (Code)		10V			16V			25V		
Cap. (μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
4700	478							22 x 30	57	1.6
								25 x 25	57	1.6
6800	688	22 x 25	78	1.4	22 x 30	49	1.8	25 x 30	43	1.9
10000	109	22 x 30	56	1.8	25 x 30	36	2.2	25 x 40	32	2.5
15000	159	22 x 40	39	2.3	25 x 40	26	2.8	30 x 40	23	3.2
22000	229	30 x 35	28	3.0	30 x 40	18	3.5			
33000	339	30 x 45	20	3.9						

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
在105°C 120Hz條件的最大紋波值

Maximum Impedance (mΩ) at 20°C 20kHz
在20°C 20kHz條件的最大Z值

Case Size Φ D x L (mm)
尺寸 Φ D x L (mm)

Voltage (Code)		35V			50V			63V		
Cap. (μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
1000	108							22 x 25	159	1.0
1500	158							22 x 35	106	1.4
2200	228	22 x 25	90	1.1	22 x 35	90	1.4	25 x 35	72	1.7
								30 x 30	85	1.8
3300	338	22 x 30	60	1.5	25 x 35	60	1.8	30 x 40	56	2.3
		25 x 25	60	1.5						
4700	478	22 x 40	48	1.9	30 x 35	45	2.2	35 x 35	45	2.7
6800	688	25 x 40	37	2.3	30 x 50	35	2.9	35 x 50	31	3.6
10000	109	30 x 40	28	2.9	35 x 45	26	3.6			
15000	159	35 x 40	20	3.8						
18000	189	35 x 45	18	4.3						

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
在105°C 120Hz條件的最大紋波值

Maximum Impedance (mΩ) at 20°C 20kHz
在20°C 20kHz條件的最大Z值

Case Size Φ D x L (mm)
尺寸 Φ D x L (mm)

Voltage (Code)		80V			100V			200V		
Cap. (μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
220	227							22 x 30	700	0.96
330	337							22 x 40	470	1.3
470	477							25 x 40	330	1.7
								30 x 30	330	1.7
560	567				25 x 25	190	1.0			
680	687				22 x 35	156	1.2	30 x 40	230	2.2
1000	108	25 x 25	133	1.3	25 x 35	106	1.4	35 x 45	160	3.1
					30 x 30	106	1.5			
1200	128	30 x 25	110	1.5						
1500	158	25 x 35	89	1.8	30 x 40	70	1.9	35 x 50	110	3.9
2200	228	30 x 35	60	2.0	30 x 50	60	2.3			
3300	338	35 x 35	48	2.8	35 x 50	40	3.0			
4700	478	35 x 45	34	3.4						

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
在105°C 120Hz條件的最大紋波值

Maximum Impedance (mΩ) at 20°C 20kHz
在20°C 20kHz條件的最大Z值

Case Size Φ D x L (mm)
尺寸 Φ D x L (mm)

Voltage (Code)		250V			400V			450V		
Cap. (μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
100	107				25 x 30	1090	0.7	22 x 45	1600	0.75
								30 x 30	1600	0.76
150	157				25 x 40	730	0.95	25 x 45	1070	1.0
					30 x 30	730	0.94	30 x 35	1070	0.99
220	227	25 x 30	700	1.0	30 x 40	500	1.3	30 x 45	730	1.3
					35 x 30	500	1.3	35 x 35	730	1.3
330	337	25 x 40	470	1.4	30 x 50	330	1.7	35 x 50	490	1.8
		30 x 30	470	1.4	35 x 40	330	1.7			
390	397				35 x 45	280	1.9	35 x 50	410	2.0
470	477	30 x 35	330	1.8	35 x 50	240	2.2			
680	687	30 x 45	230	2.3						
1000	108	35 x 45	160	3.1						

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
在105°C 120Hz條件的最大紋波值

Maximum Impedance (mΩ) at 20°C 20kHz
在20°C 20kHz條件的最大Z值

Case Size Φ D x L (mm)
尺寸 Φ D x L (mm)

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