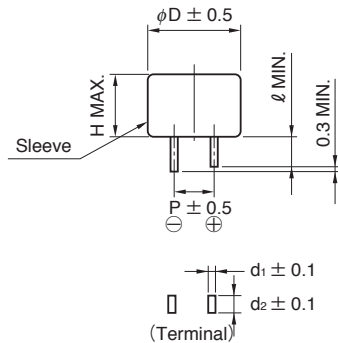
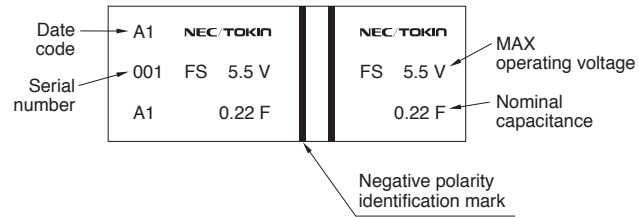


6.7 FS Series

Dimensions



Markings on sleeve



Specifications

Part Number	MAX operating voltage (Vdc)	Nominal capacitance		MAX ESR (at 1 kHz) (Ω)	MAX current at 30 min. (mA)	Dimension (unit:mm)						Weight (g)
		Charge system (F)	Discharge system (F)			ϕD	H	P	ℓ	d_1	d_2	
FS0H223ZF	5.5	0.022	0.033	60.0	0.033	11.5	8.5	5.08	2.7	0.4	1.2	1.6
FS0H473ZF	5.5	0.047	0.072	40.0	0.071	13.0	8.5	5.08	2.2	0.4	1.2	2.6
FS0H104ZF	5.5	0.10	0.15	25.0	0.15	16.5	8.5	5.08	2.7	0.4	1.2	4.1
FS0H224ZF	5.5	0.22	0.33	25.0	0.33	16.5	13.0	5.08	2.7	0.4	1.2	5.3
FS0H474ZF	5.5	0.47	0.75	13.0	0.71	21.5	13.0	7.62	3.0	0.6	1.2	10
FS0H105ZF	5.5	1.0	1.3	7.0	1.5	28.5	14.0	10.16	6.1	0.6	1.4	18
FS1A474ZF	11.0	0.47	0.60	7.0	1.41	28.5	25.5	10.16	6.1	0.6	1.4	32
FS1A105ZF	11.0	1.0	1.3	7.0	3.0	28.5	31.5	10.16	6.1	0.6	1.4	35
FS1B105ZF	12.0	1.0	1.3	7.5	3.6	28.5	38.0	10.16	6.1	0.6	1.4	40
FS1B505ZF	12.0	5.0	6.5	4.0	18.0	44.8	60.0	20.00	9.5	1.0	1.4	160



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Specifications

Series name		FS type		Test conditions (conforming to JIS C 5160-1)	
Item					
Category temperature range		-25℃ to +70℃			
MAX operating voltage		5.5Vdc, 11Vdc, 12Vdc			
Capacitance		5.5V : 0.022F to 1.0F 11V : 0.47, 1.0 12V : 1.0F, 5.0F		Refer to "Measurement Conditions"	
Capacitance allowance		+80 %, -20 %		Refer to "Measurement Conditions"	
ESR		5.5V : 0.0022F to 1.0F 11V : 0.47F, 1.0F 12V : 1.0F, 5.0F		Measured at 1kHz, 10mA ; See also "Measurement Conditions"	
Current (30-minutes value)		Refer to standard ratings		Refer to "Measurement Conditions"	
Surge	Capacitance	More than 90% of initial ratings		Surge voltage : 6.3V (5.5V type) : 12.6V (11V type) : 13.6V (12V type) Charge : 30 sec. Discharge : 9min 30sec. Number of cycles : 1000 Series resistance : 0.022F 560Ω : 0.047F 300Ω : 0.10F 150Ω : 0.22F 56Ω : 0.47F 30Ω : 1.0F 15Ω : 5.0F 10Ω Discharge resistance : 0Ω Temperature : 70±2℃	
	ESR	Not to exceed 120% of initial ratings			
	Current (30 minutes value)	Not to exceed 120% of initial ratings			
	Appearance	No obvious abnormality			
Characteristics in different temperature	Capacitance	Phase 2	50% or higher than initial value	Conforms to 4.17 Phase1 : +25±2℃ Phase2 : -25±2℃ Phase4 : +25±2℃ Phase5 : +70±2℃ Phase6 : +25±2℃	
	ESR		300% or less than initial value		
	Capacitance	Phase 3			
	ESR				
	Capacitance	Phase 5	150% or less than initial value		
	ESR		Satisfy initial ratings		
	Current (30 minutes value)		1.5CV (mA) or below		
	Capacitance	Phase 6	Within ±20% of initial value		
	ESR		Satisfy initial ratings		
Current (30 minutes value)		Satisfy initial ratings			
Lead strength (tensile)		No terminal damage		Conforms to 4.9	
Vibration resistance	Capacitance	Satisfy initial ratings		Conforms to 4.13 Frequency : 10 to 55 Hz Testing time : 6 hours	
	ESR				
	Current (30 minutes value)				
	Appearance	No obvious abnormality			
Solderability		Over 3/4 of the terminal should be covered by the new solder		Conforms to 4.11 Solder temp : 245±5℃ Dipping time : 5±0.5 sec. 1.6mm from the bottom should be dipped.	
Solder heat resistance	Capacitance	Satisfy initial ratings		Conforms to 4.10 Solder temp : 260±10℃ Dipping time : 10±1 sec. 1.6mm from the bottom should be dipped.	
	ESR				
	Current (30 minutes value)				
	Appearance	No obvious abnormality			
Temperature cycle	Capacitance	Satisfy initial ratings		Conforms to 4.12 Temperature condition : -25℃→Room temperature→+70℃→Room temperature Number of cycles : 5 Cycles	
	ESR				
	Current (30 minutes value)				
	Appearance	No obvious abnormality			
High temp. and high humidity resistance	Capacitance	Over 90% of the initial value (5.5V type) Within ±20% of initial value (11V type, 12Vtype)		Conforms to 4.14 Temperature : 40±2℃ Relative humidity : 90 to 95 %RH Testing time : 240±8 hours	
	ESR	Not to exceed 120% of initial ratings			
	Current (30 minutes value)	Not to exceed 120% of initial ratings			
	Appearance	No obvious abnormality			
High temperature load	Capacitance	Over 85% of the initial value (5.5V type) Within ±20% of initial value (11V type, 12Vtype)		Conforms to 4.15 Temperature : 70±2℃ Voltage applied : MAX operating voltage Series protection resistance : 0Ω Testing time : 1000 ^h Hours	
	ESR	Below 200% of initial ratings			
	Current (30 minutes value)	Below 200% of initial ratings			
	Appearance	No obvious abnormality			



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