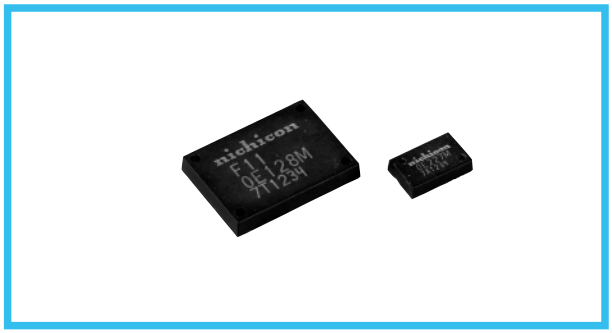
nichicon

F11

For SMD | High Ripple Current | Low Impedance | For High Frequency

- Higher Capacitance.
- Low ESR, Low ESL,High ripple current.
- Resin-molded Chip.
- Designed for surface mounting on high density PC board.
- Load life of 5000 hours at +105°C.
- Compliant to the RoHS directive (2002/95/EC).



■Type numbering system (Example : 2.5V 220µF)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
F	1	1	0	E	2	2	7	M	D	L	A	H	

- Low ESR
- Taping code

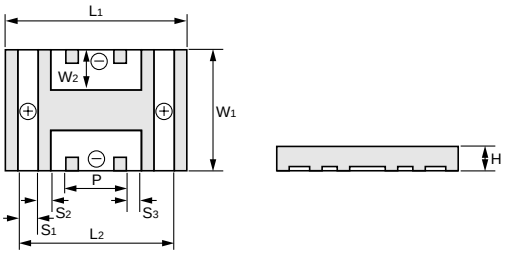
code	Tape width (mm)	Reel Dia (mm)
L	16	ϕ180
K	24	ϕ330

- Case code
- Capacitance tolerance
- Rated capacitance
- Rated voltage
- Series

■Specifications

Item	Performance Characteristics		
Category Temperature Range	–55 to +105°C		
Capacitance Tolerance	±20% (at 120Hz)		
Dissipation Factor	Refer to next table		
ESR	Refer to next table		
Leakage Current	After 5 minute's application of rated voltage, leakage current is not more than 0.1CV		
Damp Heat (Steady State)	At 60°C 90%RH 500hours (No voltage applied)		
	Capacitance Change··Within –20 to +30% of the initial specified value Dissipation Factor·····200% or less than the Initial specified value ESR·····200% or less than the Initial specified value Leakage Current·····Initial specified value or less		
Temperature Cycles	–55°C / +105°C 30minutes each 5cycle		
	Capacitance Change··Within ±20% of the Initial specified value Dissipation Factor·····200% or less than the Initial specified value ESR·····200% or less than the Initial specified value Leakage Current·····Initial specified value or less		
Temperature Change Characteristics		–55°C	+105°C
	Capacitance Change	Within –20 to +0%	Within –0 to +50%
	Dissipation Factor	Initial specified value or less	150% or less than the Initial specified value
	ESR	Initial specified value or less	150% or less than the Initial specified value
	Leakage Current	Initial specified value or less	10 times Initial specified value
Resistance to Soldering Heat	Capacitor meets the following characteristics after solder reflow (Peak: 240°C for 10sec, 2cycle). Temperature should be measured at the terminals.		
	Capacitance Change··Within ±20% of the Initial specified value Dissipation Factor·····Initial specified value or less ESR·····Initial specified value or less Leakage Current·····Initial specified value or less		
Surge	After application of 115% of rating voltage at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 105°C, capacitors meet the characteristics requirements listed below.		
	Capacitance Change····Within ±20% of the initial specified value Dissipation Factor·····200% or less than the Initial specified value ESR·····200% or less than the Initial specified value Leakage Current·····Initial specified value or less		
Endurance	After 5000 hours' application of rated voltage at 105°C, they will meet the specified value for life charecteristics listed below.		
	Capacitance Change····Within ±20% of the initial value Dissipation Factor·····200% or less than the Initial specified value ESR·····200% or less than the Initial specified value Leakage Current·····Initial specified value or less		
Marking	Printed on the package top.		

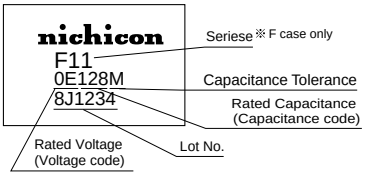
■ Dimensions



(mm)

Case Code	L1	L2	W1	W2	H	S1	S2	S3	P
D	8.5 ± 0.2	7.3 ± 0.2	5.3 ± 0.2	1.7 ± 0.2	2.0MAX.	0.9 ± 0.2	0.6 ± 0.2	0.5 ± 0.2	3.3 ± 0.2
F	16.7 ± 0.2	15.6 ± 0.2	12.1 ± 0.2	3.6 ± 0.2	2.5MAX.	1.5 ± 0.1	1.3 ± 0.1	1.5 ± 0.2	7.0 ± 0.2

■ Marking



■ Standard ratings

Cap.(µF) \ V	Code	2.5	4	6.3
		0E	0G	0J
47	476		D	D
100	107	D	D	(D)
220	227	D	(D)	
330	337	(D)		
600	607	F		F
800	807		F	
1200	128	F		

( ) The series in parentheses are being developed.
Please contact to your local Nichicon sales office when these series are being designed in your application.

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■ Ratings Table

〈Standard〉

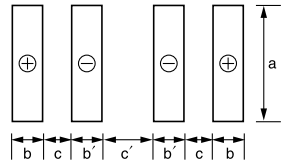
Rated Volt (V)	Rated Capacitance (μF)	Case code	Part Number	Leakage Current (μA)	Disspation Factor (%@120Hz)	ESR (mΩ@100kHz)	Rated Ripple (Arms@100kHz)
2.5	100	D	F110E107MDL	25	5	20.0	3.5
	220	D	F110E227MDL	55	5	20.0	3.5
	600	F	F110E607MFK	150	10	5.0	6.3
	1200	F	F110E128MFK	300	10	5.0	6.3
4	47	D	F110G476MDL	19	5	20.0	3.5
	100	D	F110G107MDL	40	5	20.0	3.5
	800	F	F110G807MFK	320	10	5.0	6.3
6.3	47	D	F110J476MDL	30	5	20.0	3.5
	600	F	F110J607MFK	378	10	5.0	6.3

〈Low ESR〉

Rated Volt (V)	Rated Capacitance (μF)	Case code	Part Number	Leakage Current (μA)	Disspation Factor (%@120Hz)	ESR (mΩ@300kHz)	Rated Ripple (Arms@300kHz)
2.5	220	D	F110E227MDLAH1	55	5	12.0	4.5
	1200	F	F110E128MFKAH3	300	10	1.5	11.5
4	100	D	F110G107MDLAH1	40	5	15.0	4.0
6.3	47	D	F110J476MDLAH1	30	5	15.0	4.0

■ Layout Land Pattern (Example)

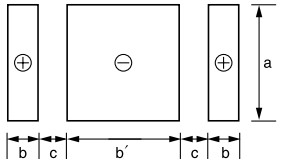
Pattern 1



(mm)

Case	a	b	b´	c	c´
D	5.5	1.4	1.2	0.5	1.9
F	14	1.8	1.8	1.2	6.6

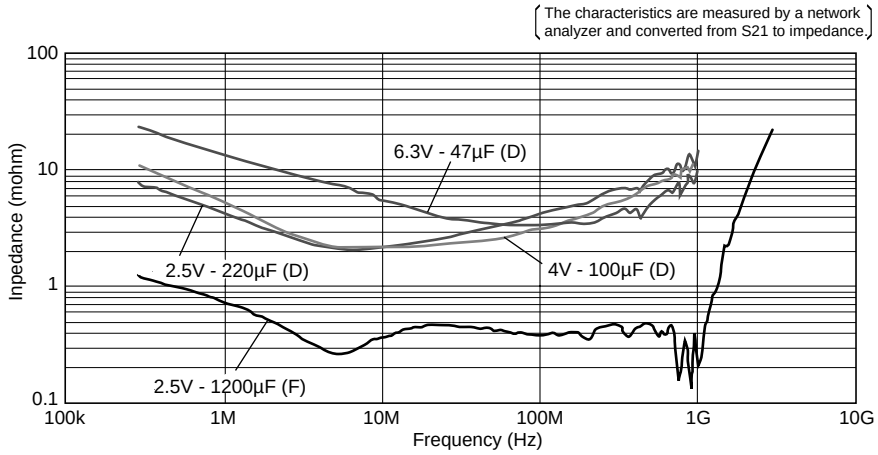
Pattern 2



(mm)

Case	a	b	b´	c´
D	5.5	1.0	4.3	0.6
F	14	1.8	10.2	1.2

■ Frequency characteristic



〈Notice〉 The graph illustrates representative data. Please use this for reference only.