Devices thru Material Innovation

NEC/TOKIN

Vol.08

NEW PRODUCT INFORMATION

New High Speed Decoupling Device

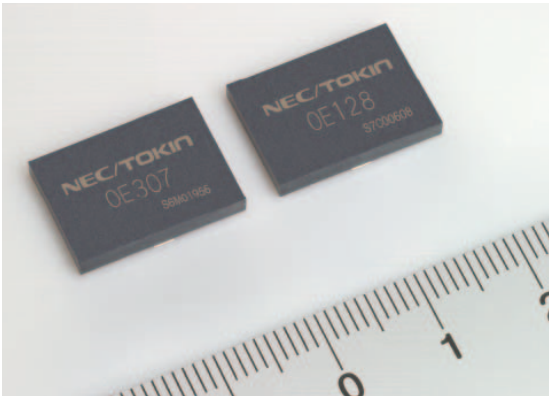
Proadlizer® PF/A Series

APPLICATION

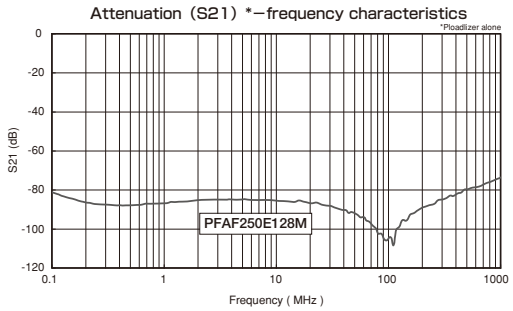
- High speed and high power CPU and Gbps backplane decoupling
- EMI solution for 10 MHz range or above
- High switching frequency DC/DC converter output capacitor

FEATURES

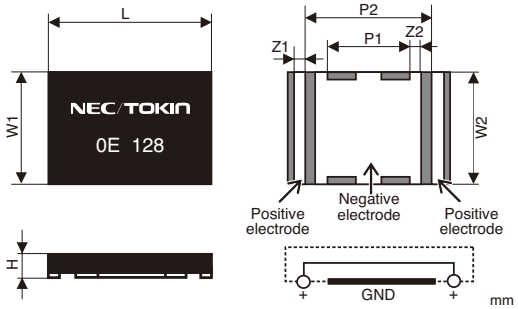
- Excellent noise absorption performance at GHz frequency
- Extreme low ESL and high current capability
- High Capacitance and very low ESR based on our Conductive Polymer technology
- Distributed capacitance architecture and transmission-line structure



PERFORMANCE (reference)



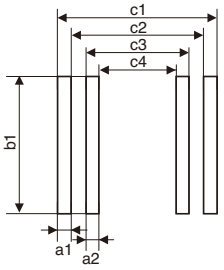
DIMENSIONS [mm]



mm

Case Code	L	W1	W2	H	P1	P2	Z1	Z2
F25	16.7±0.2	12.1±0.2	11.9±0.2	2.5Max	8.0±0.2	13.0±0.2	1.0±0.2	1.2±0.2
F20	16.7±0.2	12.1±0.2	11.9±0.2	2.0Max	8.0±0.2	13.0±0.2	1.0±0.2	1.2±0.2
121220	12.0±0.2	12.0±0.2	11.9±0.2	2.0Max	5.1±0.2	8.7±0.2	0.9±0.2	0.8±0.2

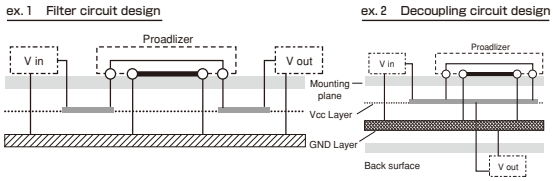
LAYOUT LAND PATTERN (Tentative)



mm

Case Code	a1	a2	b1	c1	c2	c3	c4
F25, F20	1.6	1.8	14.2	16.4	13.2	10.2	6.6
1212	1.6	1.8	14.2	11.9	8.7	6.7	3.1

NOTE (reference)



ex.1 An effecting filtering performance can be achieved by separating input and output in the VCC layer.

ex.2 An effective decoupling performance can be achieved by not separating Vcc layer. This method also makes surface mounting of loads(CPU etc.) efficient.

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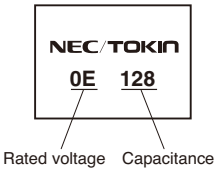
PART NUMBER SYSTEM

PFA F25 0E 128 M ** **

- PF/A Series
- Case code
- Rated voltage (0D: 2.0V, 0E: 2.5V)
- Capacitance (128=1200μF) First two digits represent significant figures. Third digit specifies number of zeros to follow.
- Capacitance tolerance (M: ±20%)
- Characteristic code (2 digits)
- Tape & Reel Carrier (TE or C: φ330mm)

MARKING



RATINGS (Initial specification)

Rated voltage (V)	Capacitance (μF)	Disipation Factor (%)	DC Leakage Current (μA)	ESR (mΩ) at 100kHz	Case code	Part Number	
2.0	1000	10	300	1.0	121220	PFA1212200D108MCDC	
2.5	900	10	250	1.5	F25	PFAF250E907MCBTE	
2.5	1200	10	300	2.0	F25	PFAF250E128MTE	
2.5	1200	10	300	1.5	F25	PFAF250E128MNSTE	
2.5	1500	10	375	2.0	F25	PFAF250E158MTE	
2.0	1000	10	200	1.0	F20	PFAF200D108MCDTE	★
2.0	1800	10	360	1.0	F20	PFAF200D188MNRTE	★
2.0	2400	10	480	1.0	F25	PFAF250D248MNRTE	★

★ : Under development

PERFORMANCE

NO	Test Item	Performance	Test Condition
1	Operating Temperature	−55°C to +105°C	
2	Rated Voltage	2.0V, 2.5V	
3	Capacitance	900μF~2400μF	at 120Hz
4	Capacitance Tolerance	M: ±20%	
5	DC Leakage Current	Refer Rating table	Applied Rating Voltage, 5min
6	Dissipation Factor (DF)	Refer Rating table	at 120Hz
7	ESR*	Refer Rating table	at 100kHz
8	Surge Voltage	Capacitance Change: Within ±20% of initial specification. LC: Lower than initial specification. DF: Lower than 2 times initial specification. ESR: Lower than 2 times initial specification.	Applied 115% of Rating Voltage at 105°C 1000cycles
9	Temperature Stability		Capacitance: same as No.3 LC: same as No.5 DF: same as No.6 ESR: same as No.7
10	Temperature Cycling	Capacitance Change: Within ±20% of initial specification. LC: Lower than initial specification. DF: Lower than 2 times initial specification. ESR: Lower than 2 times initial specification.	−55°C to 105°C 5cycles
11	Resistance to Soldering Heat	Capacitance Change: Within ±20% of initial specification. LC: Lower than initial specification. DF: Lower than initial specification. ESR: Lower than initial specification.	Reflow soldering 240°C, 10sec. Peak
12	Damp Heat	Capacitance: Within +30% to −20% of initial specification. LC: Lower than initial specification. DF: Lower than 2 times initial specification. ESR: Lower than 2 times initial specification.	40°C, 90 to 95%RH Duration is 500Hr
13	Endurance	Capacitance Change: Within ±20% of initial specification. LC: Lower than initial specification. DF: Lower than 2 times initial specification. ESR: Lower than 2 times initial specification.	105°C, Applied Rating Voltage Duration is 1000Hr

Temperature Stability

	at −55°C	at +105°C
Capacitance Change	Within 0% to −20%	Within +50% to 0%
LC	Lower than initial specification.	Lower than 10 times initial specification.
tan δ	Lower than initial specification.	Lower than 1.5 times initial specification.
ESR	Lower than initial specification.	Lower than 1.5 times initial specification.

*ESR: Preliminary specification

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- Descriptions in this catalog regarding product characteristics and quality are based solely on discrete components. When using these components, be sure to check the specifications with the component in question mounted on the products.
- The manufacturer's warranty will not cover any disadvantage or damage caused by improper use of the products that deviates from the characteristics, specifications, or conditions for use described in this catalog.
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