

## NEW PRODUCT INFORMATION

# New High Speed Decoupling Device

## Proadlizer® PF/A Series

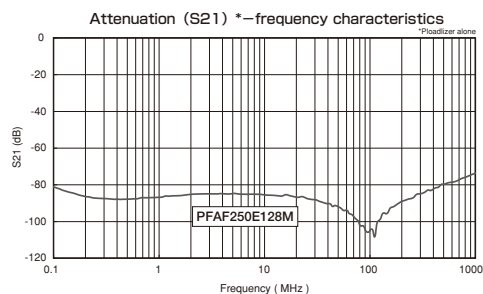
## APPLICATION

- 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

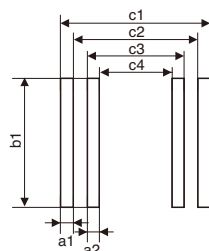
## FEATURES

- 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

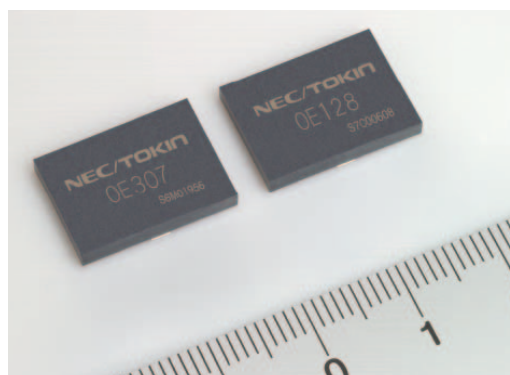
## PERFORMANCE (reference)



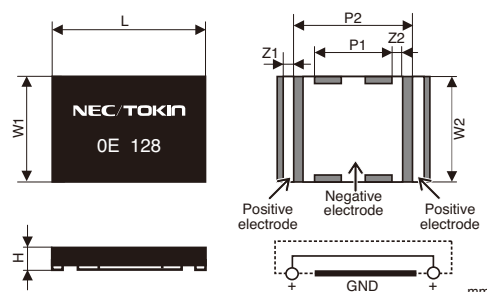
## LAYOUT LAND PATTERN (Tentative)



| 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 |



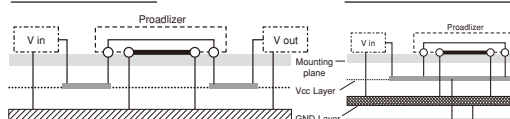
### DIMENSIONS [mm]



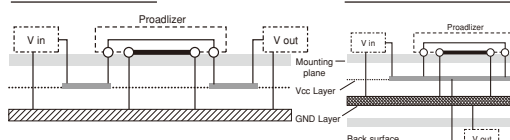
| Case Code | L        | W1       | W2       | H      | P1      | P2       | Z1      | Z2      |
|-----------|----------|----------|----------|--------|---------|----------|---------|---------|
| F25       | 16.7±0.2 | 12.1±0.2 | 11.9±0.2 | 2.5Max | 8.0±0.2 | 13.0±0.2 | 1.0±0.2 | 1.2±0.2 |
| F20       | 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 |

### NOTE (reference)

ex.1 Filter circuit design



ex.2 Decoupling circuit design



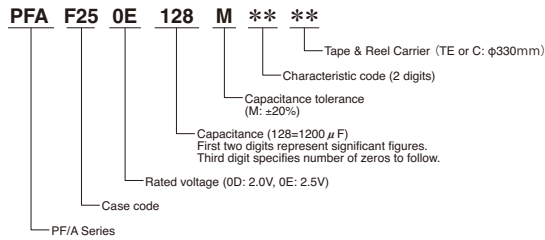
ex.1 An effecting filtering performance can be achieved by separating input and output in the VCC layer.

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.

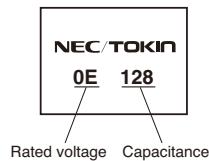


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## PART NUMBER SYSTEM



## 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    | PFA1212200D10BMCDC |
| 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       | PFAF200D10BMCOTE * |
| 2.0               | 1800             | 10                    | 360                     | 1.0                | F20       | PFAF200D18BMNRTE * |
| 2.0               | 2400             | 10                    | 480                     | 1.0                | F25       | PFAF250D248MNRTE * |

\* : Under development

## PERFORMANCE

| NO | Test Item                    | Performance                                                                                                                                                                                            | Test Condition                                                                         |                                             |
|----|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------|
| 1  | Operating Temperature        | -55℃ to +105℃                                                                                                                                                                                          |                                                                                        |                                             |
| 2  | Rated Voltage                | 2.0V, 2.5V                                                                                                                                                                                             |                                                                                        |                                             |
| 3  | Capacitance                  | 900μF~2400μF                                                                                                                                                                                           |                                                                                        |                                             |
| 4  | Capacitance Tolerance        | M: ±20%                                                                                                                                                                                                | at 120Hz                                                                               |                                             |
| 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.<br>LC: Lower than initial specification.<br>DF: Lower than 2 times initial specification.<br>ESR: Lower than 2 times initial specification.  | Applied 115% of Rating Voltage at 105℃ 1000cycles                                      |                                             |
| 9  | Temperature Stability        |                                                                                                                                                                                                        | Capacitance: same as No.3<br>LC: same as No.5<br>DF: same as No.6<br>ESR: same as No.7 |                                             |
|    |                              | at -55℃                                                                                                                                                                                                |                                                                                        | at +105℃                                    |
|    | 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. |
| 10 | Temperature Cycling          | Capacitance Change: Within ±20% of initial specification.<br>LC: Lower than initial specification.<br>DF: Lower than 2 times initial specification.<br>ESR: Lower than 2 times initial specification.  | -55℃ to 105℃ 5cycles                                                                   |                                             |
| 11 | Resistance to Soldering Heat | Capacitance Change: Within ±20% of initial specification.<br>LC: Lower than initial specification.<br>DF: Lower than initial specification.<br>ESR: Lower than initial specification.                  | Reflow soldering 240℃, 10sec. Peak                                                     |                                             |
| 12 | Damp Heat                    | Capacitance: Within +30% to -20% of initial specification.<br>LC: Lower than initial specification.<br>DF: Lower than 2 times initial specification.<br>ESR: Lower than 2 times initial specification. | 40℃, 90 to 95%RH<br>Duration is 500Hr                                                  |                                             |
| 13 | Endurance                    | Capacitance Change: Within ±20% of initial specification.<br>LC: Lower than initial specification.<br>DF: Lower than 2 times initial specification.<br>ESR: Lower than 2 times initial specification.  | 105℃, Applied Rating Voltage<br>Duration is 1000Hr                                     |                                             |

\*ESR: Preliminary specification

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