For Engineering Sample



Introductory No.918A/Sep. 2024

Conductive Polymer Aluminum Solid Capacitors

NPCAP[™]-**PXL** Series

- Super low ESR and high heat resistance have been obtained by using conductive polymer as electrolyte.
- Rated voltage range : 2.5 to 16Vdc, Capacitance range : 270 to 820µF
- Suitable for DC-DC converters, voltage regulators and decoupling applications used on computer motherboards etc.
- RoHS2 Compliant
- Halogen Free
- Specifically designed for Immersion cooling (prohibit use under normal atmosphere).

Engineering sample. There is possibility to stop mass production due to market situation changed, and product specifications in this bulletin are subject to change without notice.

This Engineering bulletin is issued for

| Items | Characteristics | | | | | | | | |
|--|---|--|--|--|--|--|--|--|--|
| Category Temperature Range | -25 to +105°C | | | | | | | | |
| Rated Voltage Range | 2.5 to 16Vdc | | | | | | | | |
| Capacitance Tolerance | ±20% (M) (at 20°C , 120Hz) | | | | | | | | |
| Leakage Current *Note | Shall not exceed values | s shown in STANDARD RATINGS. (at 20°C after 2 minutes) | | | | | | | |
| Dissipation Factor $(\tan \delta)$ | 0.12 max. | (at 20°C , 120Hz) | | | | | | | |
| Low Temperature Characteristics (Max. Impedance Ratio) | $Z(-25^{\circ}C) / Z(+20^{\circ}C) \le 1.15$ (at 100kHz | | | | | | | | |
| Endurance (In Immersion | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 5,000 hours at 105°C | | | | | | | | |
| Cooling liquid) | Appearance | No significant damage | | | | | | | |
| | Capacitance change | \leq +20% of the initial value | | | | | | | |
| | DF (tan δ) | $\leq 150\%$ of the initial specified value | | | | | | | |
| | FSR | \leq 150% of the initial specified value | | | | | | | |
| | Leakage current | \leq The initial specified value | | | | | | | |
| Surge Voltage | The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltage specified at 105°C for 30 seconds through a protective resistor(R=1kΩ) and discharge for 5 minutes 30 seconds. | | | | | | | | |
| | Rated voltage (V_{dc}) Surge voltage (V_{dc}) | 2.5 6.3 16 2.9 7.2 18 | | | | | | | |
| | Appearance | No significant damage | | | | | | | |
| | Capacitance change | $\leq \pm 20\%$ of the initial value | | | | | | | |
| | DF (tan δ) | $\leq 150\%$ of the initial specified value | | | | | | | |
| | FSR | $\leq 150\%$ of the initial specified value | | | | | | | |
| | Leakage current | \leq The initial specified value | | | | | | | |
| Soldering Heat | The following specificat | ions shall be satisfied when the solder temperature is reduced back to 20°C after soldering has been performed | | | | | | | |
| - | under the recommende | nder the recommended soldering conditions. | | | | | | | |
| | Appearance | No significant damage | | | | | | | |
| | Capacitance value | Within the specified tolerance range | | | | | | | |
| | D.F. (tanδ) | ≦The initial specified value | | | | | | | |
| | ESR | ≦The initial specified value | | | | | | | |
| | Leakage current | ≦The initial specified value (Voltage treatment) | | | | | | | |

*Note : If any doubt arises, measure the leakage current after the following voltage treatment. Voltage treatment : DC rated voltage is applied to the capacitors for 120 minutes at 105°C .

♦ DIMENSIONS [mm]









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CHEMI-CON

PART NUMBERING SYSTEM



(Note1) : PXL series, 16V270μF (Rated ripple current 5,080mArms) have supplement code "J". Terminal and terminal plating are the same as all other in PXL series.

STANDARD RATINGS

| WV (V _{dc}) | Cap (µF) | Size code | Leakage current (µA max./ after 2min.) | ESR (mΩ max./20°C , 100k to 300kHz) | Rated ripple current (mArms/ 105°C , 100kHz) | Part No. |
|--------------------------|-------------|--------------|---|--|---|--------------------|
| 2.5 | 820 | F80 | 1,020 | 7 | 5,000 | APXL2R5ARA821MF80G |
| 6.3 | 560 | F80 | 1,760 | 8 | 5,000 | APXL6R3ARA561MF80G |
| 16 | 270 | F80 | 864 | 10 | 5,080 | APXL160ARA271MF80J |
| 10 | 270 | F80 | 864 | 13 | 4,460 | APXL160ARA271MF80G |

About specified immersion cooling fluids

Evaluated and confirmed by the following fluids. Please contact us for details.

| Fluorine | 3M FC-40 | | |
|-------------|--------------------------------|--|--|
| HydroCarbon | Shell S3X | | |
| | Exxon Mobile SpectraSyn Max3.5 | | |

RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

| Frequency (Hz) | 120 | 1k | 10k | 50k | 100k to 500k |
|----------------|------|------|------|------|--------------|
| SMD type | 0.05 | 0.30 | 0.55 | 0.70 | 1.00 |

Storage

Products are sealed in a special laminated aluminum bag 168hour (1week) is maximumm storage term after the bag is opened

Solvent resistant

Please contact us, If you need to do solvent cleaning