S.O.S. Short on MLCCs? Choose Panasonic Polymer Series!

PART REDUCTION		SPACE REDUCTION		COST REDUCTION		PANASONIC POLYMER SERIES
	+		+		=	

Drop-in replacement for MLCC if:

- Voltage 2 – 35V
- Capacitance required ≥47µF
- B and D case sizes
- Non AECQ-200 compliant

Two easy steps to identify your right fit ...

1. Voltage No derating required:

MLCC with derating	Conductive Polymer Capacitor Voltage
6.3V or 10V	~3V to 5V
10V or 16V	~6,3V to 10V
16V or 25V	~12V to 20V
25V or 50V	~20V to 35V

2. Smoothing Circuits dependent up on:

Choose	Size	Capacitance	Low ESR	Ripple Current	Temperature	Automotive
SP-Cap	✓	✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓	–
POSCAP	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ *
OS-CON	✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓	✓ *
HYBRIDS	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓ ✓
MLCC	✓ ✓	✓	✓ ✓ ✓	✓ ✓ ✓	–	✓ ✓

* Only infotainment or non-safety critical circuits
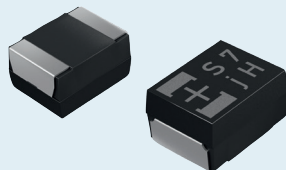
![Panasonic INDUSTRY]

S.O.S. Short on MLCCs?
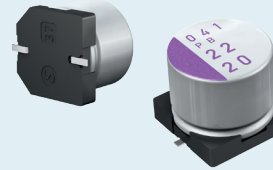# Choose Panasonic Polymer Series!

SP-Cap

- Voltage: 2 to 6.3 VDC
- Cap: 2.2 µF to 820 µF
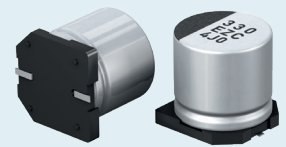- Ripple up to 10.2Arms
- Lowest ESL/ESR: 1nH/3mΩ

POSCAP

- Voltage: 2 to 35 VDC
- Cap: 3.9 µF to 1500 µF
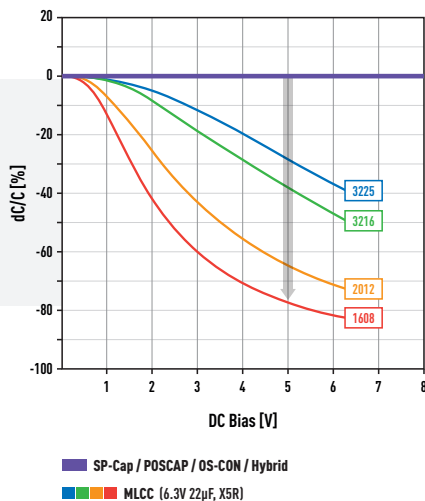- Size: 3.5x2.8 to 7.3x4.3mm
- ESR: as low as 5mΩ

OS-CON

- Voltage: 2 to 100 VDC
- Cap: 3.3 µF to 2700 µF
- Ripple up to 7.2Arms
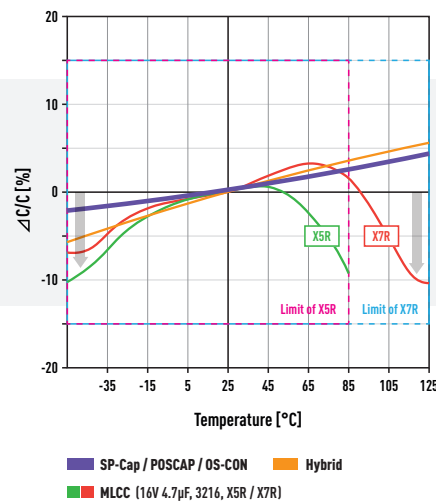- ESR: as low as 5mΩ

Hybrid

- Voltage: 25 to 80 VDC
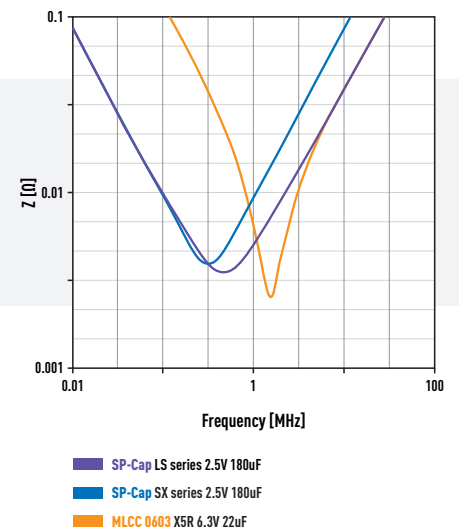- Temp: Up to 150°C
- Ripple up to 4.0Arms
- AECQ-200 Compliant

DC BIAS BEHAVIOUR OF POLYMER VS. MLCC

(Graph: dC/C [%] vs DC Bias [V]; curves labeled 3225, 3216, 2012, 1608)

Legend:
- SP-Cap / POSCAP / OS-CON / Hybrid
- MLCC (6.3V 22µF, X5R)

TEMPERATURE BEHAVIOUR OF POLYMER VS. MLCC

(Graph: ΔC/C [%] vs Temperature [°C]; curves labeled X5R, X7R, Limit of X5R, Limit of X7R)

Legend:
- SP-Cap / POSCAP / OS-CON   Hybrid
- MLCC (16V 4.7µF, 3216, X5R / X7R)

IMPEDANCE BEHAVIOUR OF POLYMER VS. MLCC

(Graph: Z [Ω] vs Frequency [MHz])

Legend:
- SP-Cap LS series 2.5V 180uF
- SP-Cap SX series 2.5V 180uF
- MLCC 0603 X5R 6.3V 22uF

Panasonic offers :

- Four variations in Polymer dielectric capacitors
- Including chip and can-type (SMD & THT).
- No derating and DC bias unlike MLCCs
- Physically more robust, longer lifetimes and safe-failure modes (no-burning)

With higher ripple current, stable ESR and capacitance across broad temperature and frequency spectrum, Polymer capacitors also offer value against Electrolytics for efficient designs.

For more information please visit: industry.panasonic.eu

rev. 2020/05