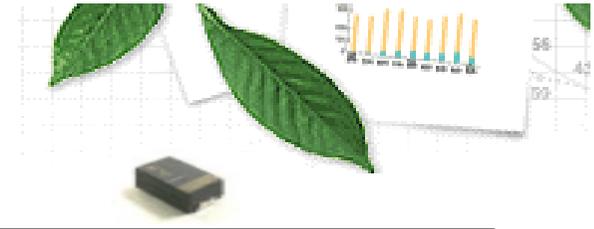


Panasonic®

Electrolytic Capacitor

SP-Cap
Specialty Polymer Capacitor



Specialty Polymer Aluminum Electrolytic Capacitor (SP-AL)

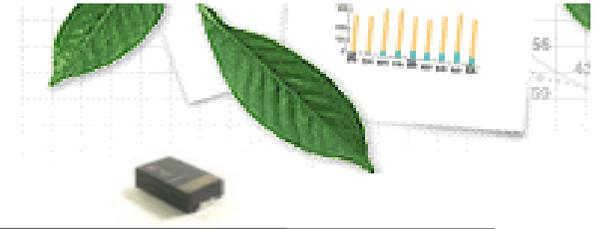
**Comparison with
Multi-Layer Ceramic Capacitor(MLCC)**

***Capacitor Business Unit
LCR Device Company
Matsushita Electronic Components Co., Ltd.***

Panasonic®

Electrolytic Capacitor

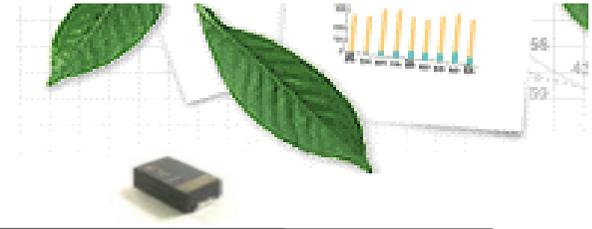
SP-Cap
Specialty Polymer Capacitor



Comparison of **SP-AL** with **Multi-Layer Ceramic Capacitors (MLCC)**

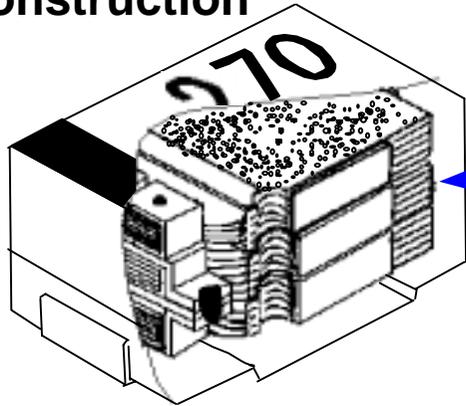
Features

- ◆ **No Capacitance Drop Against DC Bias Voltage**
- ◆ **Stable Temperature Characteristics**
- ◆ **No Delamination, No Piezoelectric Noise**



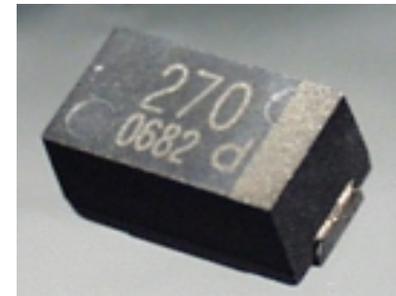
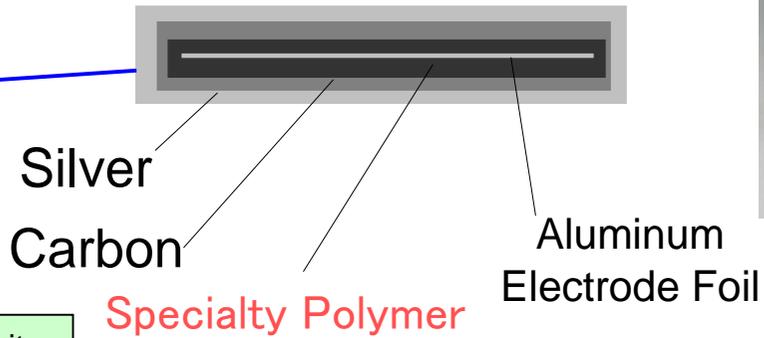
Comparison of the Construction of SP-AL and MLCC

■ Construction

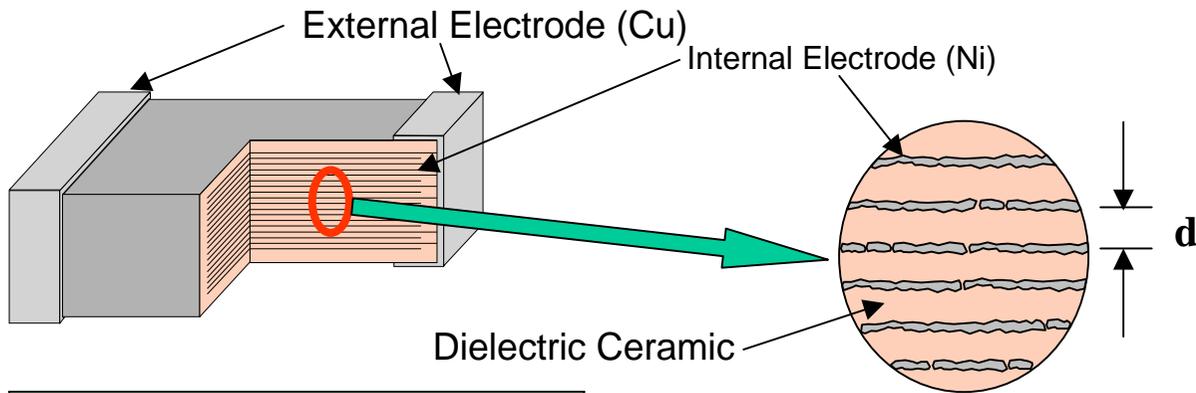


Specialty Polymer Aluminum Electrolytic Capacitor

Cross Section of Inner Element (1 Layer)

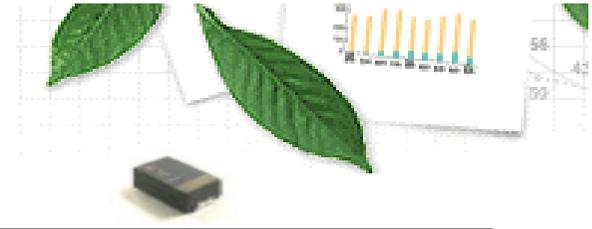


SP-AL

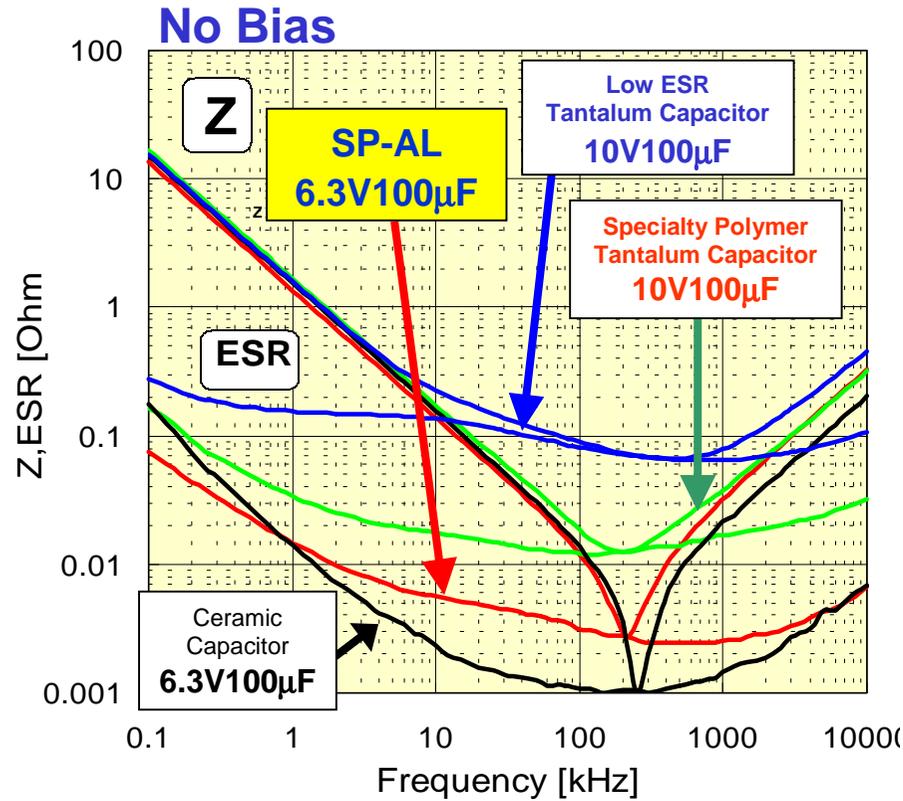


Multi Layered Ceramic Capacitor

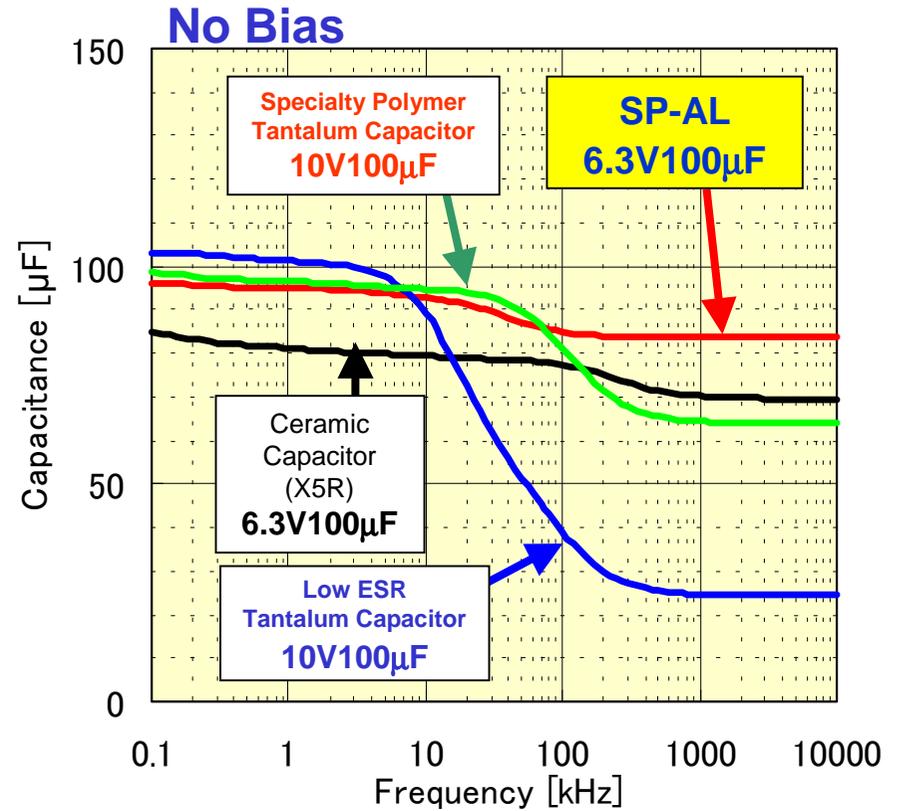




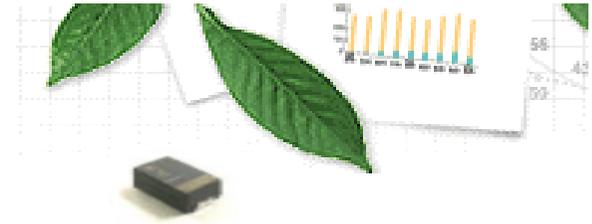
Frequency Characteristics



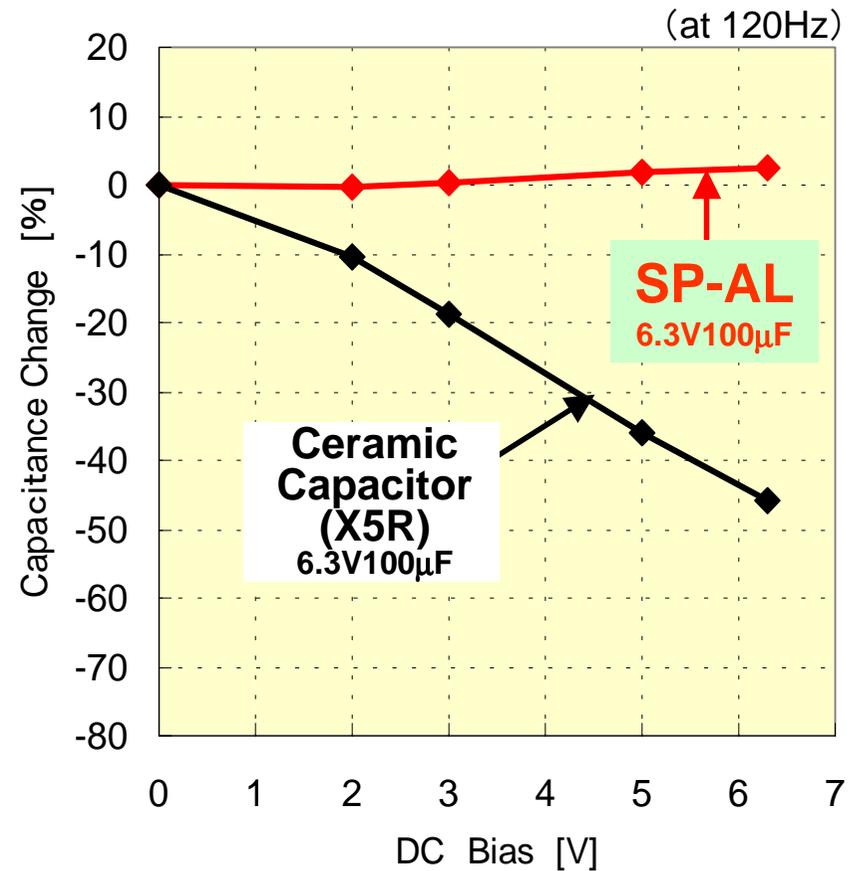
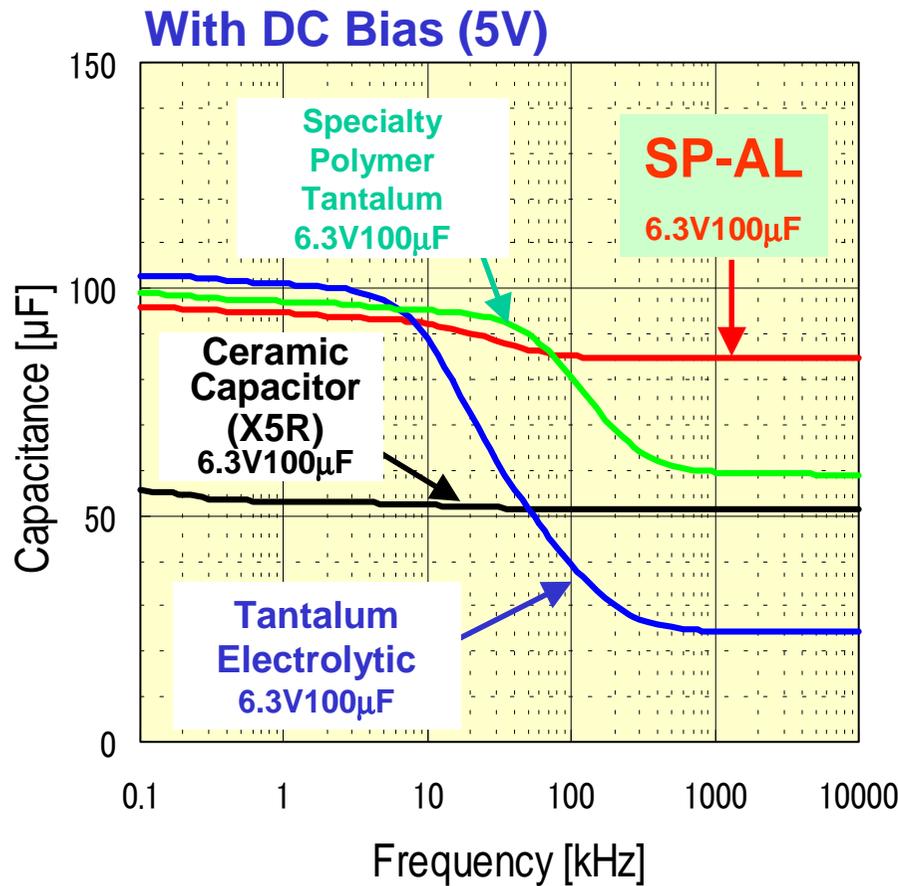
SP-AL has Very Low ESR Characteristic



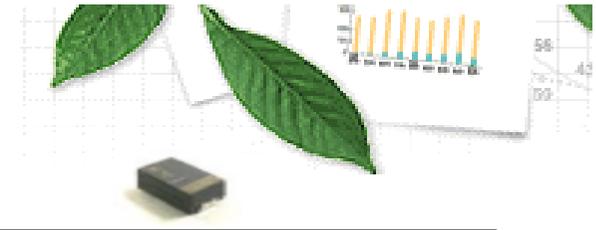
High Frequency Capacitance of SP-AL is Stable



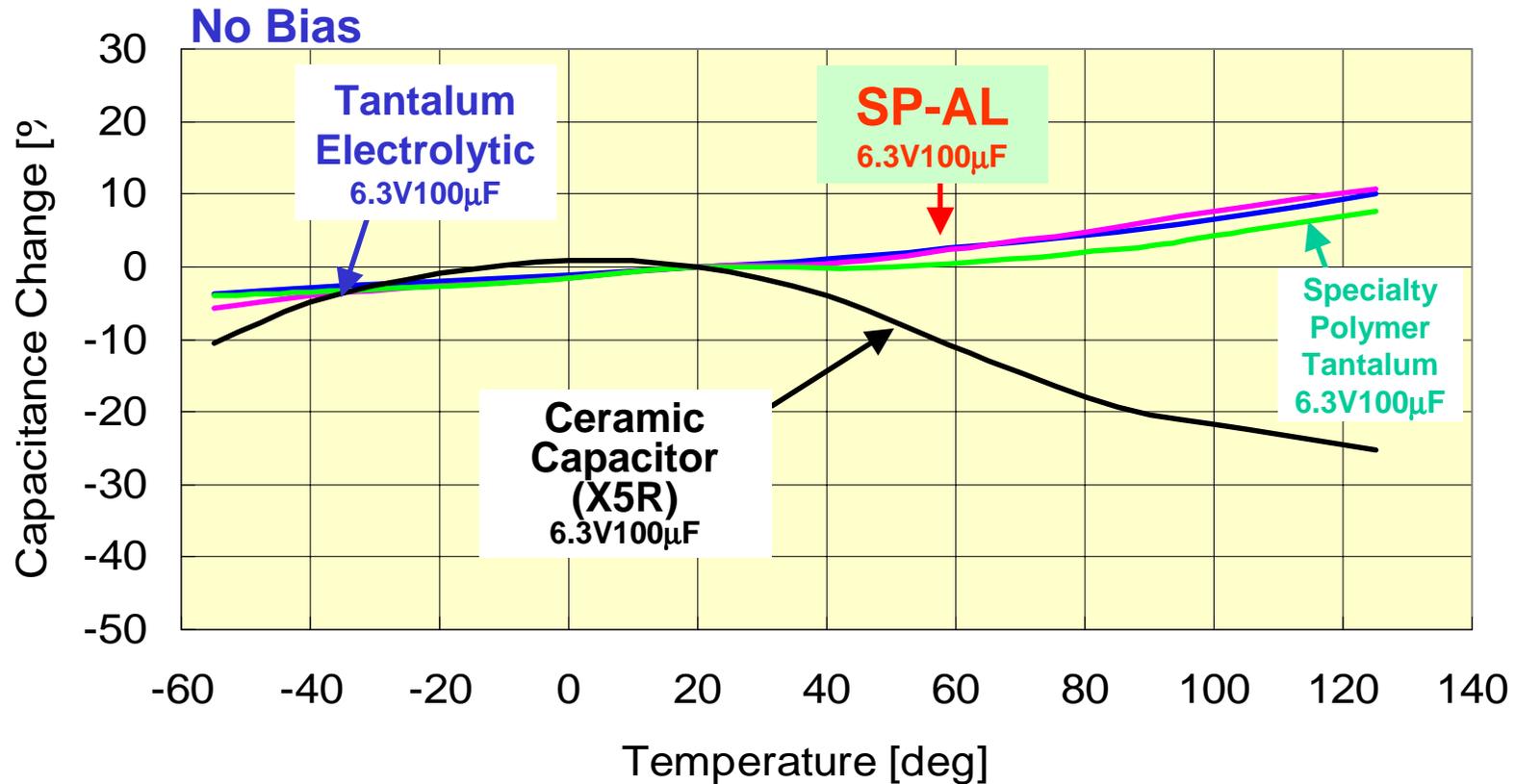
Stable Capacitance (DC Bias Characteristics)



SP-AL's DC Bias Characteristics are More Stable than MLCC



Stable Capacitance (Temperature Characteristics)



SP-AL's Capacitance Temperature Characteristics are More Stable than MLCC