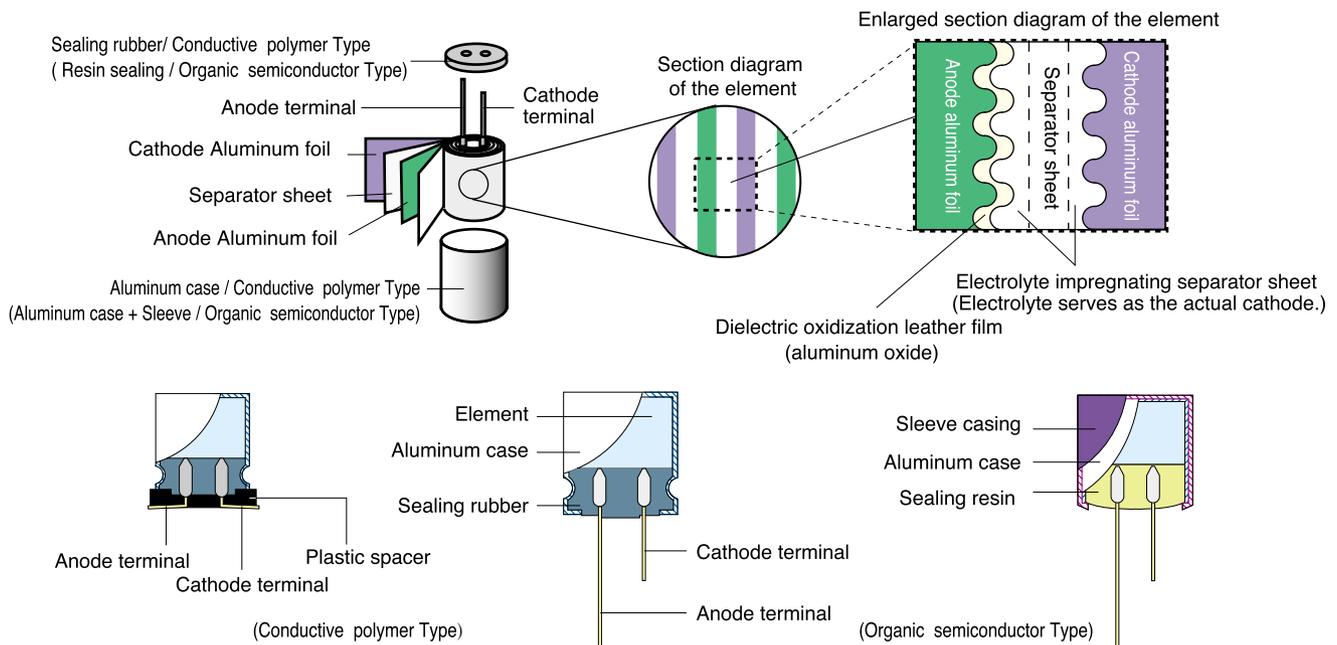


1. Basic structure of OS-CON

OS-CON has a basic construction similar to an aluminum electrolytic capacitor.
A distinctive difference lies in **electrolyte**.

Aluminum electrolytic capacitor	Separator sheet (electrolyte) impregnated with electrolytic solution .	Liquid electrolyte
OS-CON (Organic semiconductor Type)	Separator sheet (electrolyte) impregnated with organic semiconductor .	Solid electrolyte
OS-CON (Conductive polymer Type)	Separator sheet (electrolyte) impregnated with conductive polymer .	Solid electrolyte

Basic construction of OS-CON

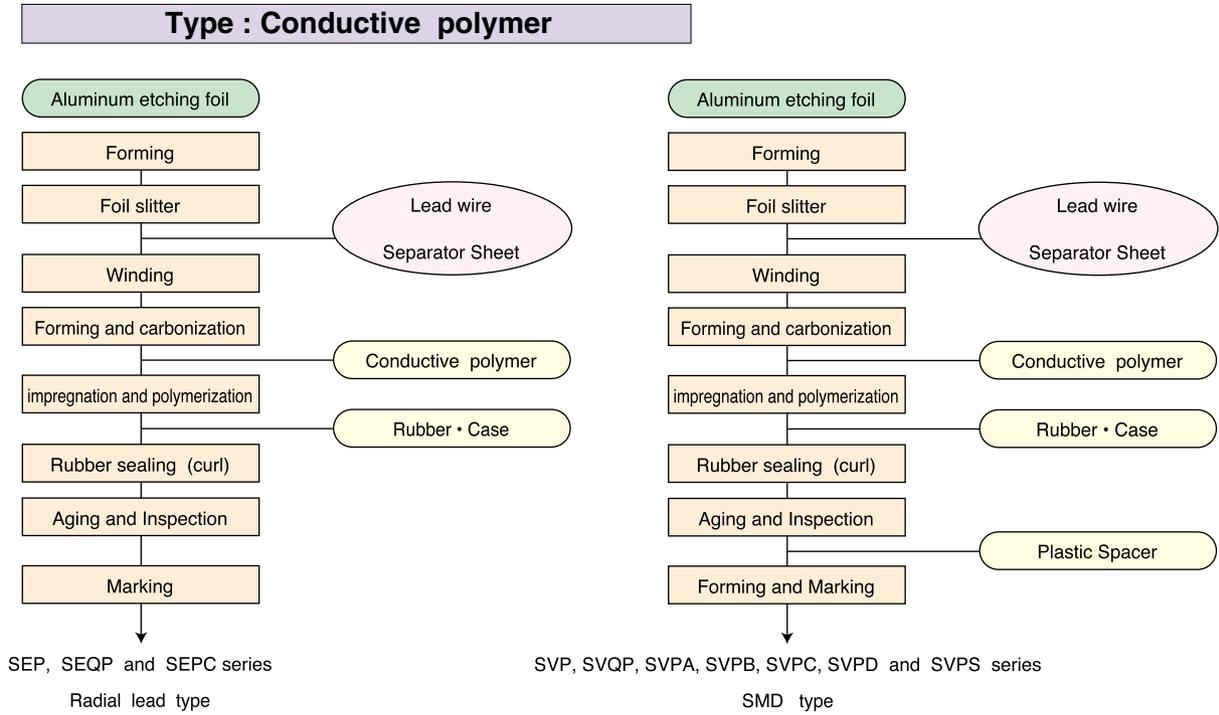


- Increased surface area of the aluminum electrode foil (high-speed processing to form rough surface) results in larger capacitance (greater charge density).
 - Electrolyte is impregnated so that the rough dielectric aluminum oxide film formed at the anode
 - aluminum foil sticks close to the cathode aluminum foil.
- Since electrolyte serves as the cathode, higher conductivity is ideal.

2. Differences of electrolyte and in characteristics between OS-CON and an electrolytic capacitor

	Aluminum electrolytic capacitor	OS-CON	
		Organic semiconductor Type	Conductive polymer Type
Conductivity (See P58,59)	3(mS/cm) • Difficult to lower ESR due to ionic conduction • ESR augments, in particular, in low temperature conditions	300(mS/cm) • High electronic conductivity facilitate to achieve low ESR • ESR is stable in low temperature conditions	3000(mS/cm) • High electronic conductivity, realizing super low ESR • ESR is stable in low temperature conditions
Reliability, lifespan (See P62,63)	• Liquid electrolyte is evaporable at high temperature • Static capacitance is on the decline at high temperature • Limited lifespan resulting from dry-up • Major fluctuations in temperature characteristics	• Solid electrolyte with little evaporation • Less decrease in static capacitance • Long lifespan even at high temperature • Minor fluctuations in temperature characteristics	• Solid electrolyte with little evaporation • Little decrease in static capacitance • Long lifespan even at high temperature • Very minor fluctuations in temperature characteristics
Temperature coefficient (Normally)(See P64)	2 times by 10°C reduction	10 times by 20°C reduction	10 times by 20°C reduction
	105°C/2,000h→85°C/8,000h	105°C/2,000h→85°C/20,000h	105°C/2,000h→85°C/20,000h

3. OS-CON Manufacturing Method



Type :Organic semiconductor (TCNQ complex salt)

