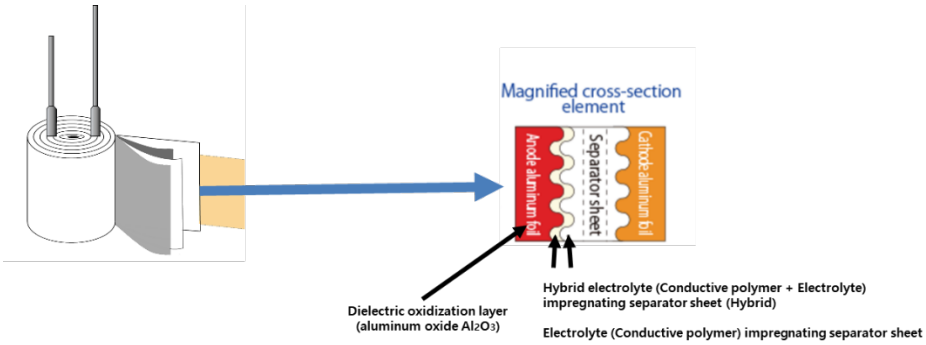
Ideal Conductive Polymer Hybrid series for 5G

In order to follow the development of 5G network service, Samwha Electric has developed ideal series for 5G market. Most suitable for 5G network devices, it has least influence of high and low temperatures. With Korea becoming first country in the world to have more than 10 million 5G users, most mobility base station, which endure large temperature range and reliability in running for 24 hours per day, required improvement.

"YM" series, developed by Samwha Electric in 2021, has temperature range of -55℃ to 125℃ with lifetime up to 4,000 hours. Conductive polymer hybrid capacitor, as shown in the drawing below, consists both conductive polymer and liquid electrolyte to disable the chance of short circuit and risk of fire.

Furthermore, such characteristics and technical capability make "YM" series also ideal for automotive applications such as HVAC and Engine Control Unit.



Since 2019, Samwha Electric has been supplying conductive polymer hybrid and "YM" series, provided in voltage range from 25V to 63V with capacitance of 47 to 680μF, will expand the market further into 5G.

● Key Features ("YM" Series)

Item	Characteristics
Operating temperature range	-55 ~ +125℃
Leakage current max.	I = 0.01CV or 3μA whichever is greater (after 2 minutes)
Capacitance tolerance	±20% at 120Hz, 20℃
Dissipation factor max. (at 120Hz, 20℃)	WV: 25 / 35 / 50 / 63 tanδ: 0.14 / 0.12 / 0.1 / 0.08
Low temperature characteristics (Impedance ratio at 100kHz)	Z (-25℃) / Z (+20℃) ≦ 1.5 Z (-55℃) / Z (+20℃) ≦ 2.0
Load life	After an application of DC bias voltage plus the rated AC ripple current for 4000 hours at 125℃. The measurement shall meet the following limits. The DC voltage plus the peak AC voltage combined must not exceed the rated voltage. Capacitance change: Within ±30% of initial value tanδ: Less than 200% of the specified value ESR: Less than 200% of the specified value Leakage current: Less than specified value
Shelf life(at 125℃)	After 1000 hours no load test, leakage current, capacitance and tanδ are same as load life value. The measurement shall be performed at 20℃ by the KS C IEC 60384 - 4
Resistance to soldering heat	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them at 250℃ for 10 seconds. Leakage current: Less than specified value Capacitance change: Within ±10% of initial value tanδ: Less than specified value