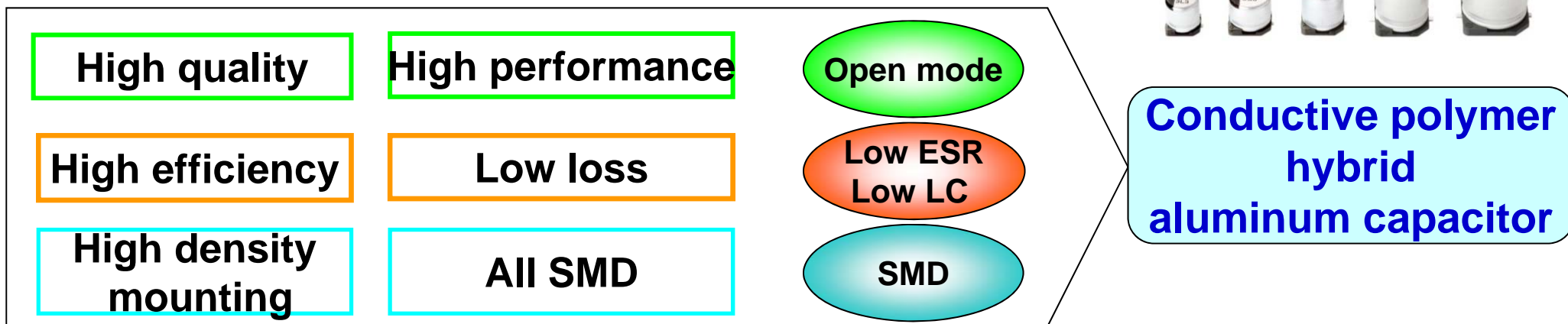


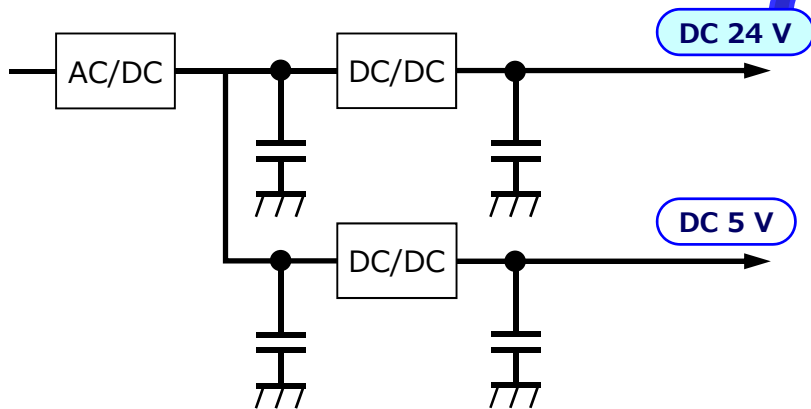
Case Study : 5-1

Contribution to high reliability / miniaturization for DC/DC converter



◆ Panasonic proposal to industrial motor



◆ Proposed case : DC/DC converter



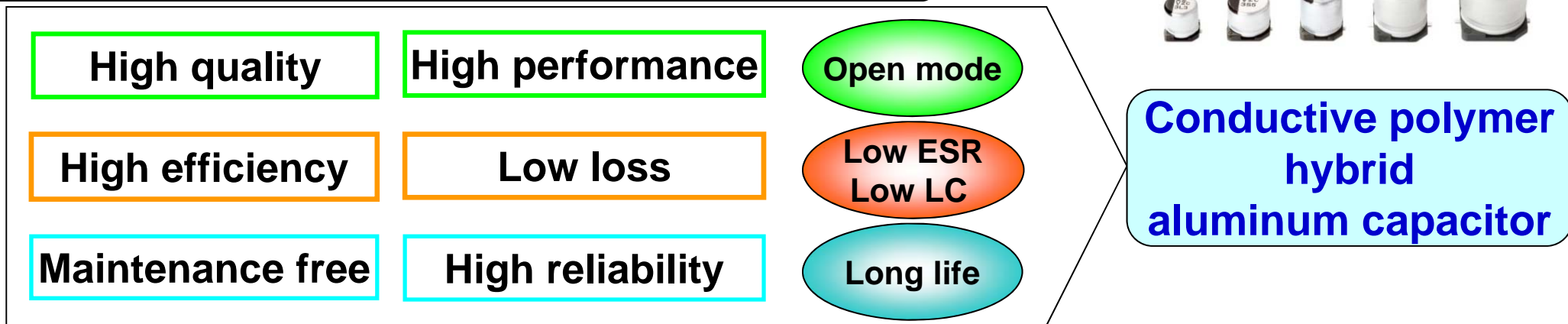
High performance /Miniaturization
(Contribution to set SMD/miniaturization)

	DC/DC OUTPUT 24V Line	
Capacitors	Radial type AL capacitor	Hybrid capacitor ZA series
Item	Φ12.5x15 mm, 35V, 390μF x1 pc.  EEUFC1V391S	Φ6.3x5.8 mm, 35V, 47μF x1 pc.  EEHZA1V470P
Mounting area	100 % (156 mm ²)	28 % (44 mm ²)
Height	100 % (15 mm)	39 % (5.8 mm)
ESR	65 mΩ (100 kHz)	60 mΩ (100 kHz)
Endurance	105 °C, 5000 h	105 °C, 10000 h
Ripple	1205 mA (100 kHz, 105 °C)	1300 mA (100 kHz, 105 °C)

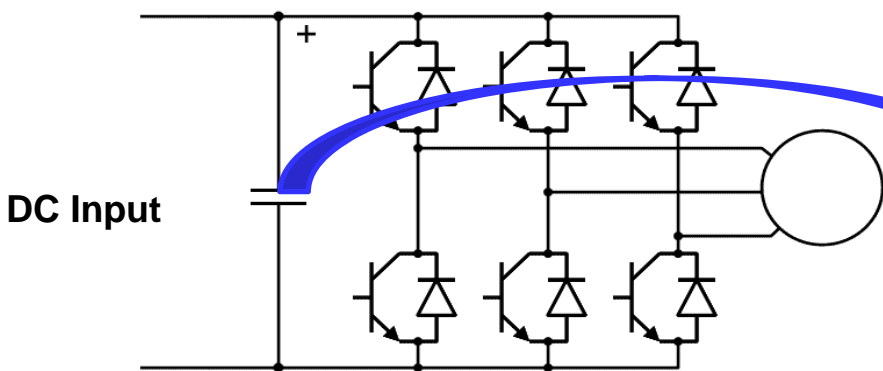
Case Study : 5-2

Contribution to high reliability/miniaturization for DC brushless motor (Drive circuit)

◆ Panasonic proposal to DC brushless motor





◆ Proposed case : DC brushless motor



* 12V power⇒25WV、24V power⇒35WV、48V power⇒63WV

High performance /Miniaturization
(Contribution to set SMD/miniaturization)

	DC Link 48V Line	
Capacitors	Radial type AL capacitor	Hybrid capacitor ZA series
Item	 Φ12.5x25 mm, 63V, 390μF x1 pc. EEUFC1J391	 Φ10x10.2 mm, 63 V, 56μF x1 pc. EEHZA1J560P
Mounting area	100 % (156 mm ²)	68 % (106 mm ²)
Height	100 % (25 mm)	41 % (10.2 mm)
ESR	70 mΩ (100 kHz)	30 mΩ (100 kHz)
Endurance	105 °C, 5000 h	105 °C, 10000 h
Ripple	1720mA (100 kHz, 105 °C)	1800mA (100 kHz, 105 °C)