

## Inverter Smoothing Capacitors for Electric and Hybrid Vehicles

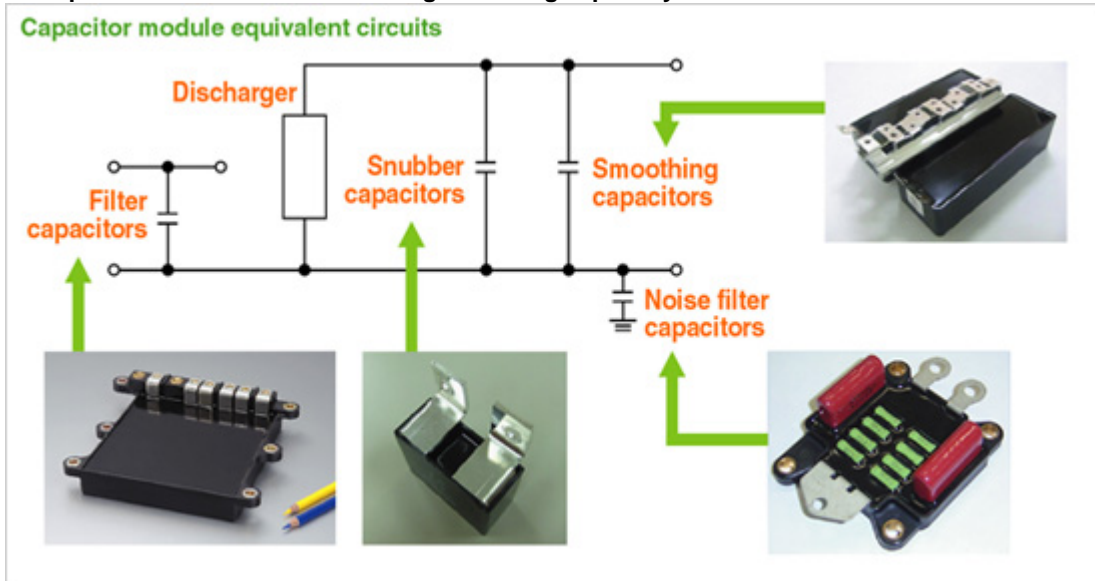
Film capacitors are optimal for high voltages and therefore as inverter smoothing capacitors for electric and hybrid vehicle (EV/HV) motor drives. Aluminum electrolytic capacitors are optimal for low and medium voltages. As a developer and supplier of both film and aluminum electrolytic capacitors, we are able to meet the needs of every type of EV and HV.

Nichicon is independently developing and manufacturing metallized film, which is the fundamental material for inverter smoothing film capacitors for EV/HV motor drives. In particular, for film capacitor modules that are utilized in drive inverter units, we are able to respond with flexibility to provide the desired characteristics. These include having outstanding high frequency performance, high withstand current capability and long life, as well as excellent reliability and safety. As a result, automobile manufacturers in Japan and abroad have been giving our products high marks. We are currently increasing our supply capacity in order to respond to this expanding demand.



HV inverter smoothing film capacitors

### Example of use of inverter with voltage boosting capability



### Aluminum electrolytic capacitors for EV/HV

We are able to provide electrode foils that use dielectric films, which demonstrate stable electrical characteristics even under high ripple current conditions, such as a non-crystalline film in aluminum electrolytic capacitors for motor drive inverter smoothing. We have also established technologies that realize high (20 G) vibration resistance to handle the severe vibrations that occur when mounted in vehicles.

Moreover, we are working to manufacture high voltage dielectric films designed for high voltage applications, and we are even able to provide products with a rated withstand voltage of 630 V. Furthermore, we are advancing the development of capacitors that are able to demonstrate adequate electrical characteristics even in high and low temperature conditions.



Inverter smoothing aluminum electrolytic capacitors