nichicon

CHEMISTRY THAT MATTERS™

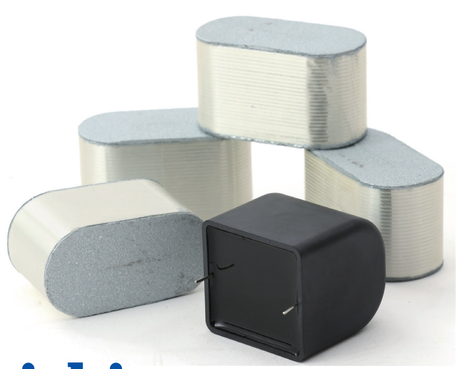
sabic

電気自動車向け高耐熱キャパシター

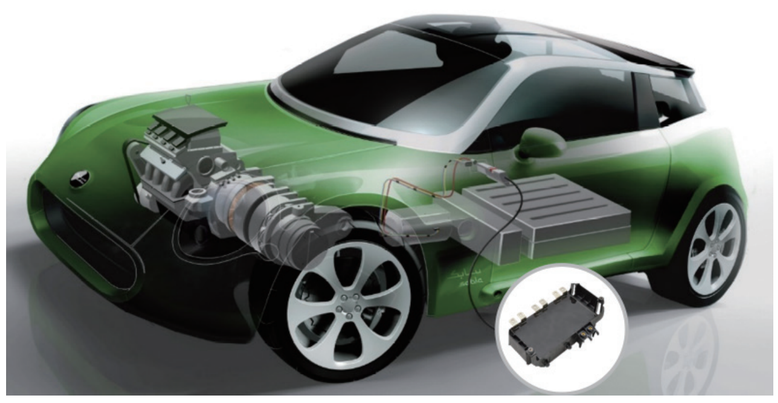
HIGH HEAT CAPACITORS FOR APPLICATIONS IN EV

2021 R&D 100 WINNER

sabic HTV150A Film rolls (5 & 3µm x 5000m)



nichicon Capacitor elements



自動車業界の課題 Industry Challenge:

電気自動車高効率と長航続距離の実現はインバータ向け150℃までの高温かつ高電圧で動作できるフィルムキャパシターを必要とする。

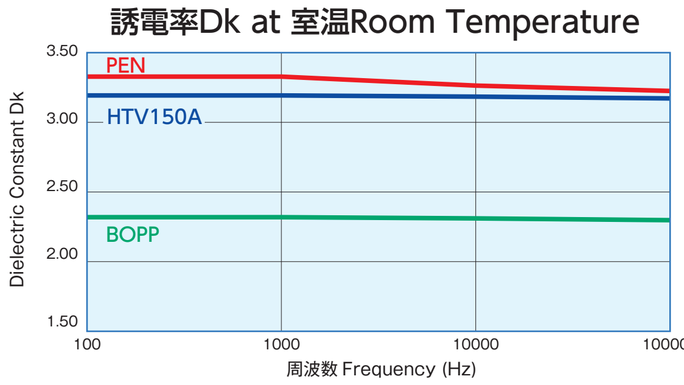
Higher efficiency and increased range in electric vehicles require efficient AC-DC inverter modules with capacitors that operate under high voltages and at high temperatures reaching up to 150°C.

SABICの解決策 Solution:

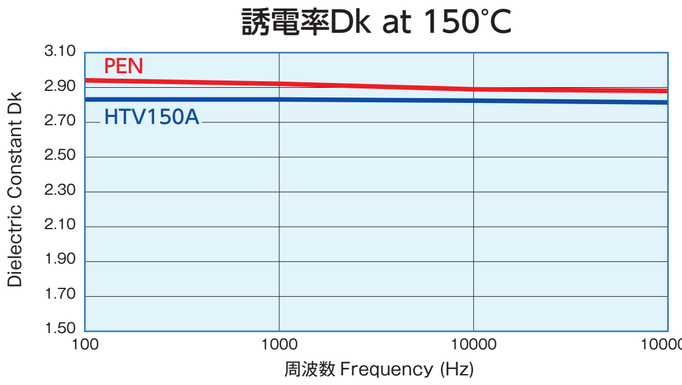
- SABIC's ELCRES™ HTV150A 高耐熱と高電圧フィルム
  high temperature high voltage film.
- HTV150A 5 & 3µmフィルムで作られたニチコン様の高耐熱キャパシター
  Nichicon's high heat capacitors made with HTV150A 5 & 3µm films.

HTV150A 特性 Dielectric Characteristics

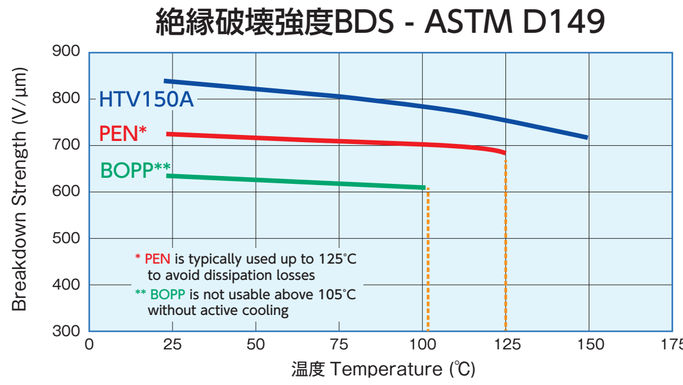
誘電率Dk at 室温Room Temperature



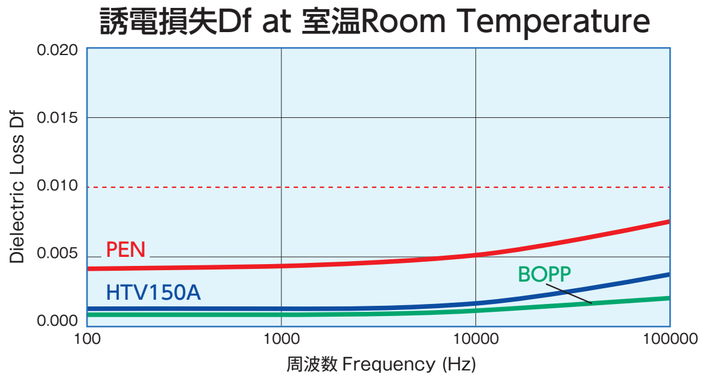
誘電率Dk at 150°C



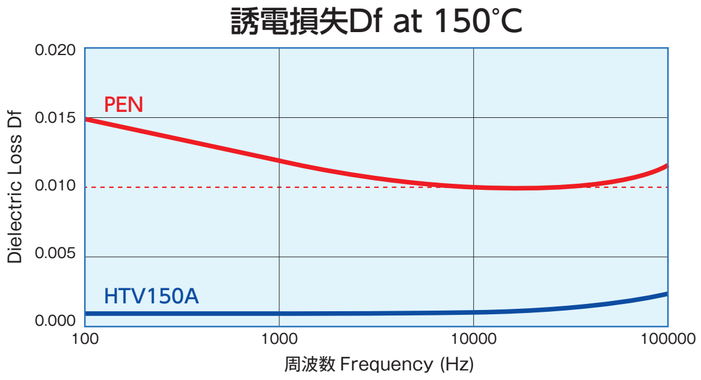
絶縁破壊強度BDS - ASTM D149



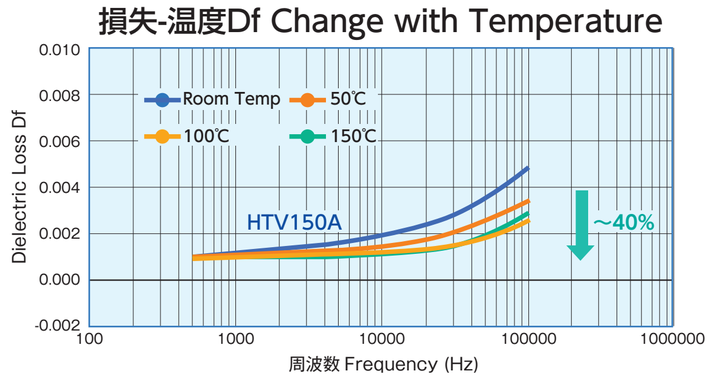
誘電損失Df at 室温Room Temperature



誘電損失Df at 150°C

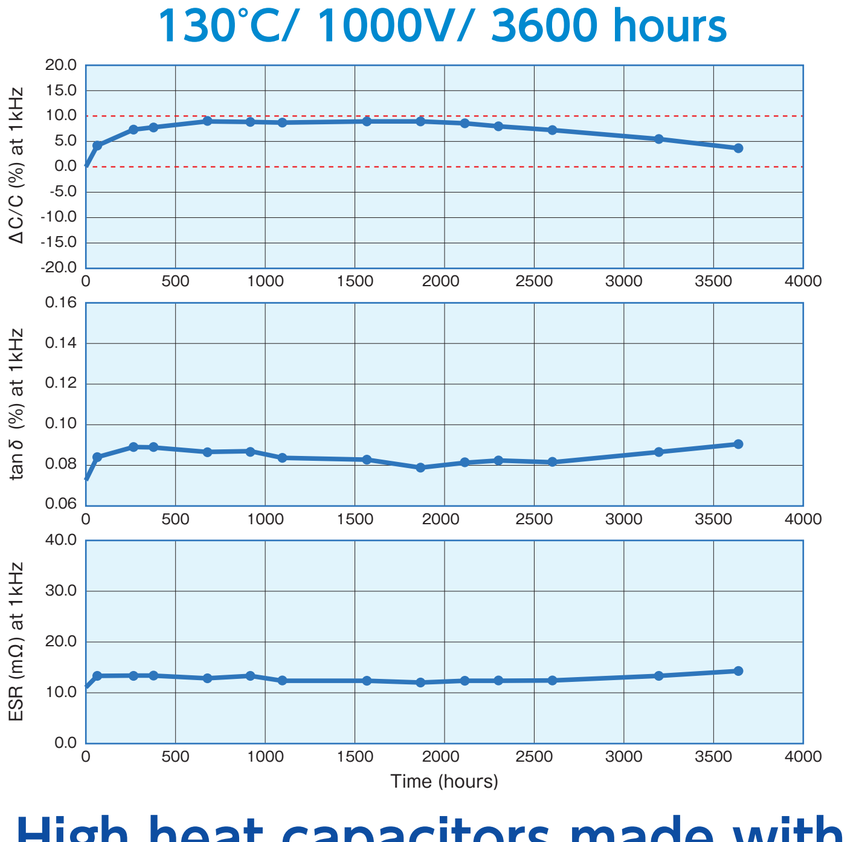


損失-温度Df Change with Temperature



キャパシターライフ試験をクリア Capacitor Reliability Performance (Life Test)

130°C/ 1000V/ 3600 hours



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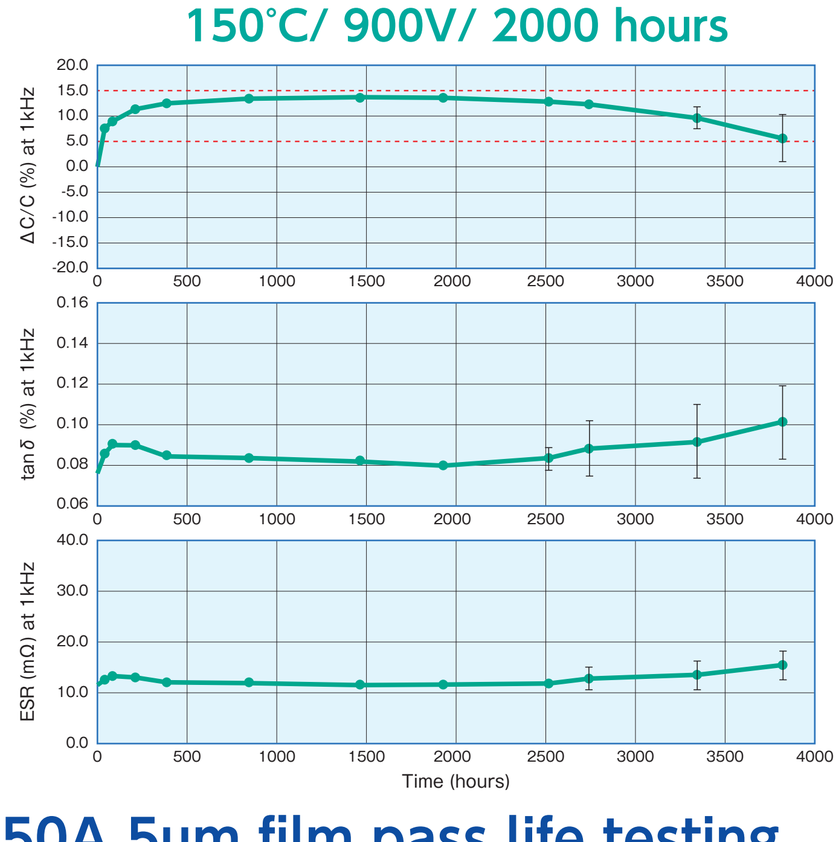
ΔC < 5%

安定Stable Tan δ
(Less than 2X initial value)

安定Stable ESR

150°C/ 900V/ 2000 hours



High heat capacitors made with ELCRES™ HTV150A 5µm film pass life testing

Shin-Etsu
信越ポリマー株式会社