

NSPE-H, -S, -T & -U series HYBRID CONSTRUCTION SMT V-Chip Aluminum Electrolytic Capacitors



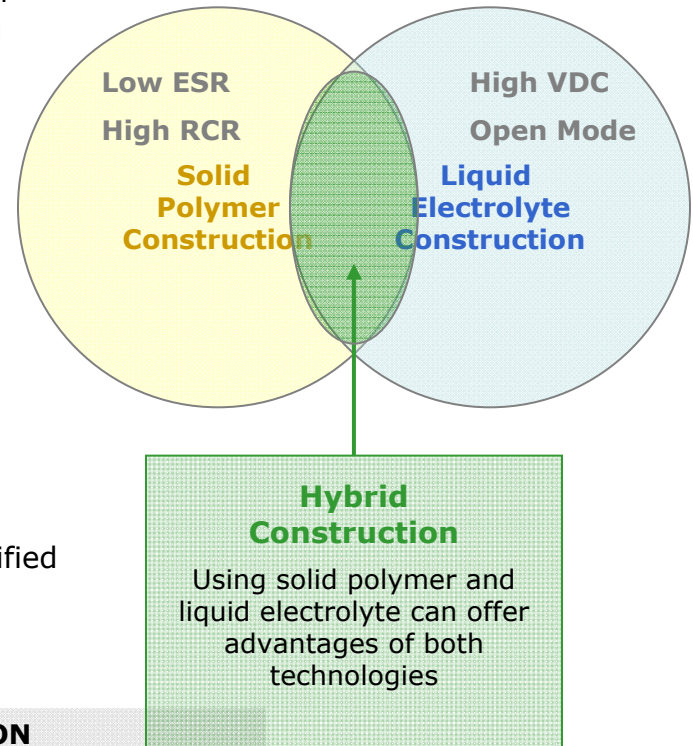
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NSPE-__ Series

HYBRID CONSTRUCTION SMT aluminum electrolytic capacitors
 ... combines the **performance of SOLID POLYMER** electrolyte version aluminum electrolytic capacitors, ultra-low ESR and high current rating
 ... with **the advantages of liquid electrolyte construction** (higher voltage ratings, higher temperature ratings and improved tolerance to abnormal transient conditions).

Four NEW NSPE series using **Hybrid Construction** are now available from NIC Components
 ... covering voltage ratings up to **63VDC**
 ... operating temperatures to **+125C**
 ... and load life ratings to **10,000 hours @ +105C**

"**YF**" suffix versions, for **automotive equipment**, sourced to special production and inspection at **TS-16949** certified production site



PERFORMANCE COMPARISON	
Example: 470uF, 6.3VDC, 10x10.5mm	
SOLID "N" Type (example)	RCR = 4600mA, ESR = 0.016Ω
HYBRID NIC NSPE-S series:	RCR = 3650mA, ESR = 0.016Ω
LIQUID NIC NAZV series:	RCR = 850mA, ESR = 0.160Ω



NEW PRODUCT SERIES

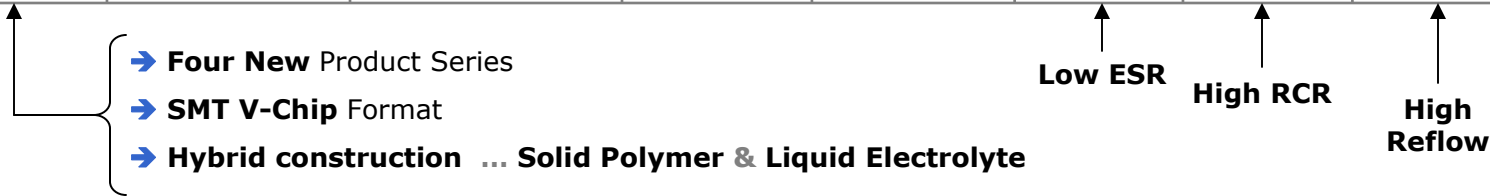


SMT V-Chip Format

NSPE- _ Series Comparison

Four **NEW NSPE** series using **Hybrid Construction**

Series	Temp Rate	Life Rate @ Max Temp	Voltage Rating	Capacitance Range	100KHz ESR	RCR @ Max Temp	Reflow Limit	Auto Equipment
NSPE-S	-55°C/+105°C	3K, 5K Hrs	6.3~16VDC	10 ~ 1000 uF	≥ 0.015 Ω	≤ 3.89 A	+250°C	Option
NSPE-H	-55°C/+105°C	5K, 7K, 10K Hrs	25~63VDC	2.7 ~ 270uF	≥0.022Ω	≤2.53A	+260°C	Standard
NSPE-T	-55°C/+125°C	1.5, 2, 2.5, 3K Hrs	25~63VDC	3.9 ~ 270uF	≥0.022Ω	≤1.52A	+260°C	Standard
NSPE-U	-55°C/+125°C	2K Hrs	6.3~16VDC	22 ~ 560uF	≥0.016Ω	≤2.19A	+250°C	Option



Hybrid electrolyte construction has many advantages

Advantages:

- ✓ **High Voltage; 35V, 50V & 63VDC**
- ✓ **Wide Temperature -55C to +125°C**
- ✓ **Extended life: 10,000 hrs @ +105°C**
- ✓ **Stability** at low temperature
- ✓ **+260°C Reflow** rated

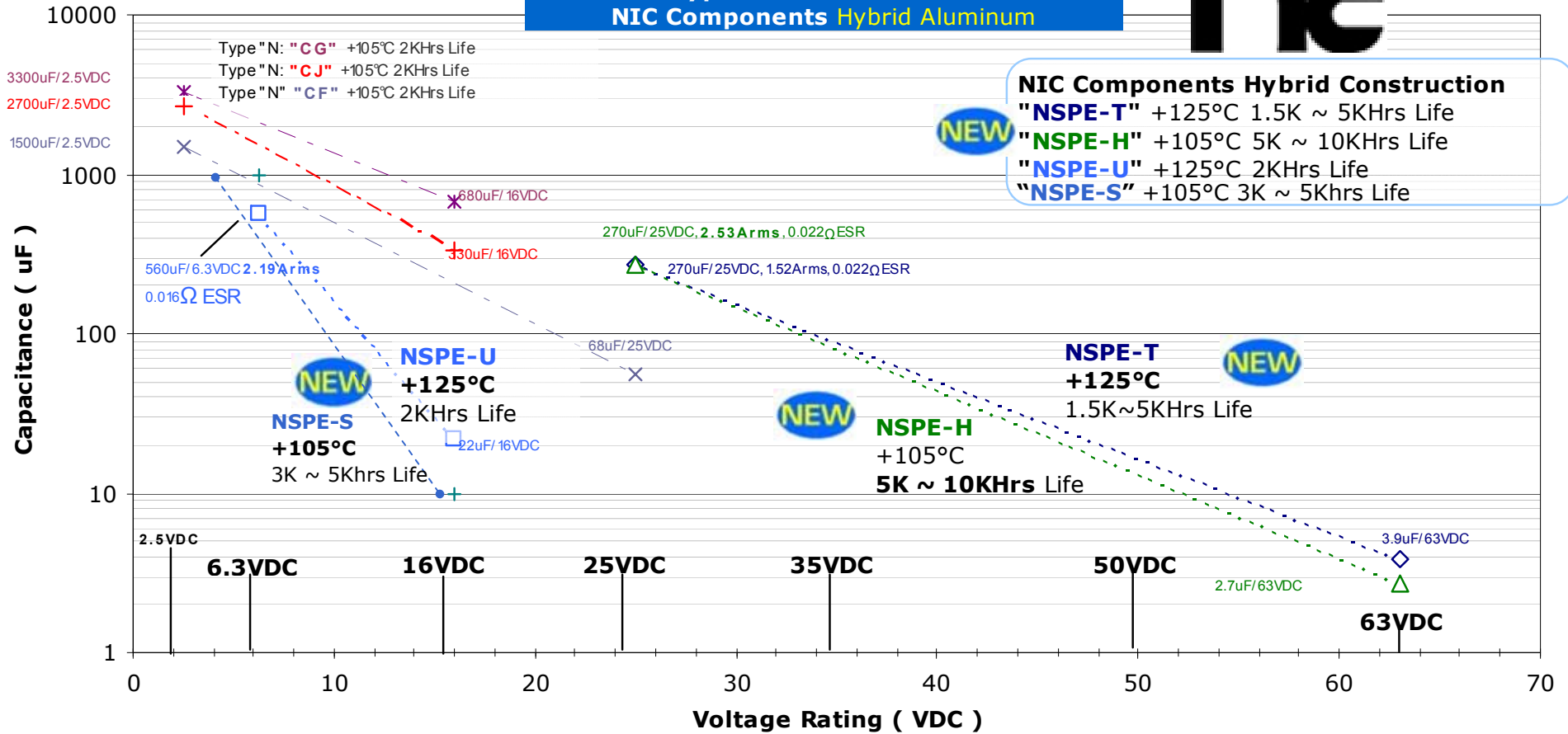
Advantages:

- ✓ **High Capacitance; up to 1000uF**
- ✓ **Surge & Transient Resistant**
- ✓ **Open mode** failure & wear-out
- ✓ **Reduces number of components per PCB**



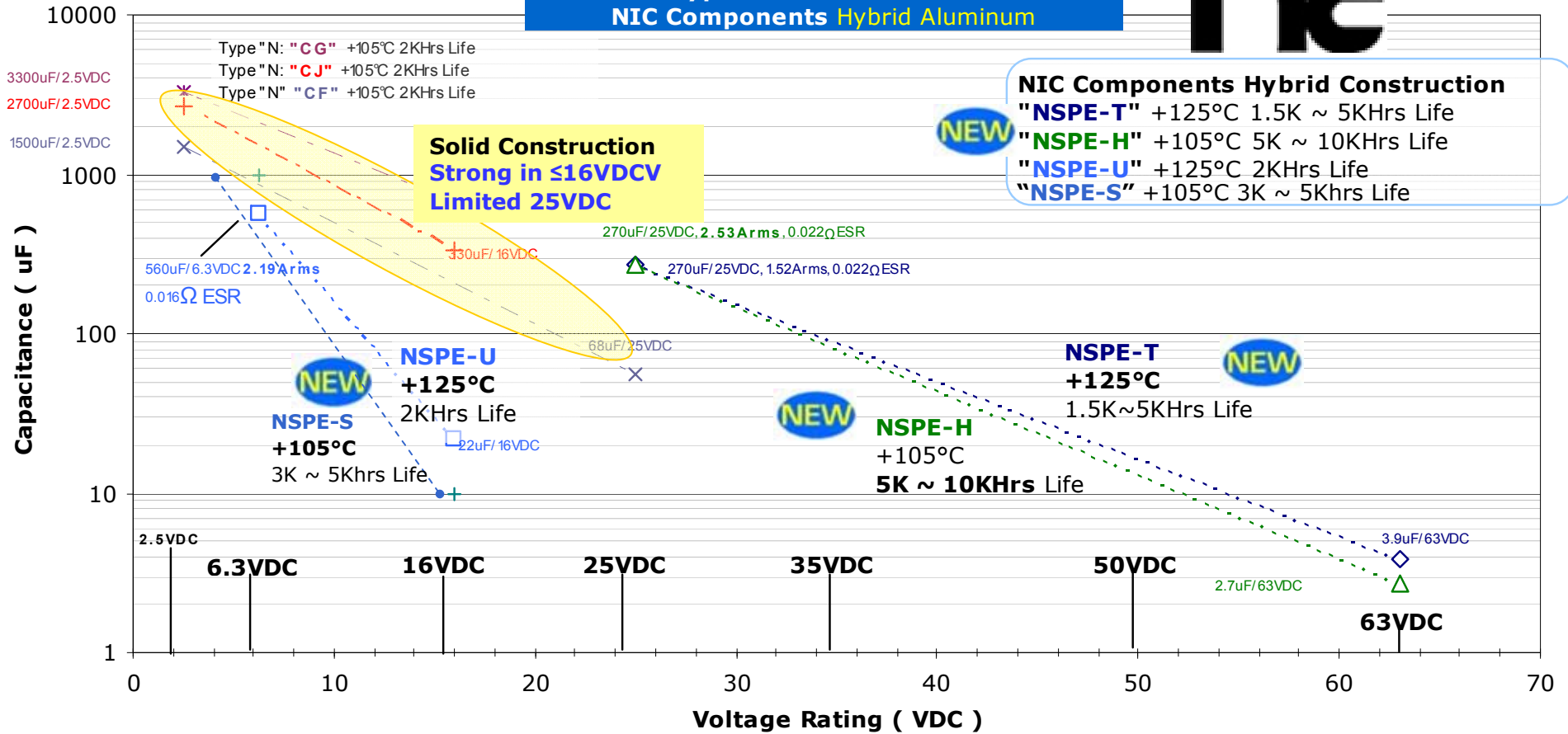
COMPARISON TO SOLID CONSTRUCTION

SMT V-Chip Comparison
 Type "N" Solid Aluminum
 NIC Components Hybrid Aluminum



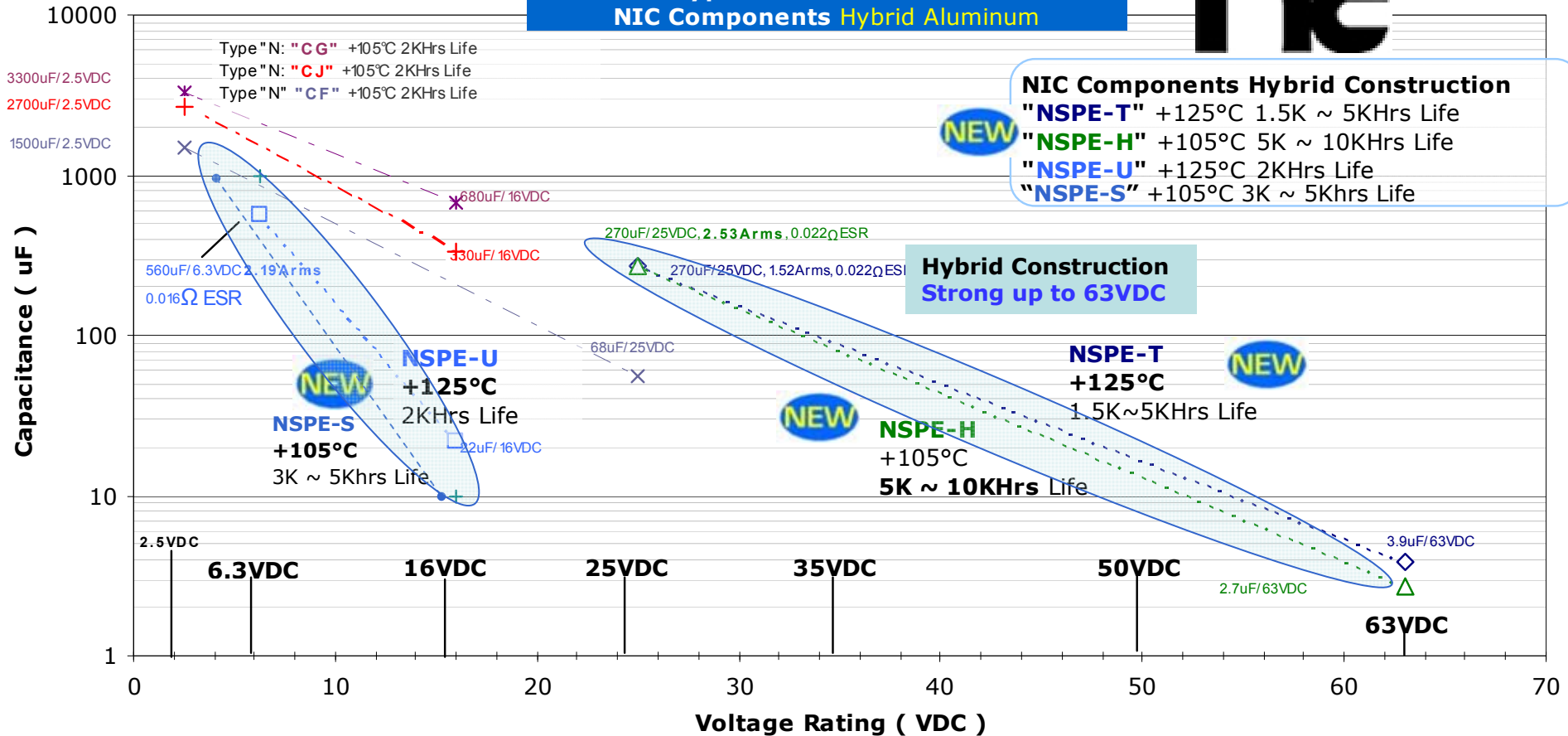
COMPARISON TO SOLID CONSTRUCTION

SMT V-Chip Comparison
 Type "N" Solid Aluminum
 NIC Components Hybrid Aluminum



COMPARISON TO SOLID CONSTRUCTION

SMT V-Chip Comparison
 Type "N" Solid Aluminum
 NIC Components Hybrid Aluminum



NIC Components Hybrid Construction

- "NSPE-T" +125°C 1.5K ~ 5KHrs Life
- "NSPE-H" +105°C 5K ~ 10KHrs Life
- "NSPE-U" +125°C 2KHrs Life
- "NSPE-S" +105°C 3K ~ 5Khrs Life

Hybrid Construction
 Strong up to 63VDC

Hybrid Construction
 +135°C in development

Hybrid Construction
 80V & 100VDC in development



Global Reach: The Americas | Europe | SE Asia

www.niccomp.com | www.LowESR.com | www.SMTmagnetics.com | www.RFPassives.com

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POTENTIAL ENDPRODUCTS

- ▶ Appliances
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- ▶ Automotive
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- ▶ Entertainment
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- ▶ Personal Computing
- ▶ Power Supplies
- ▶ Robotics
- ▶ Systems Integration
- ▶ Telecommunications
- ▶ Test and Measurement
- ▶ Video
- ▶ Wireless & Cellular

CIRCUIT APPLICATIONS

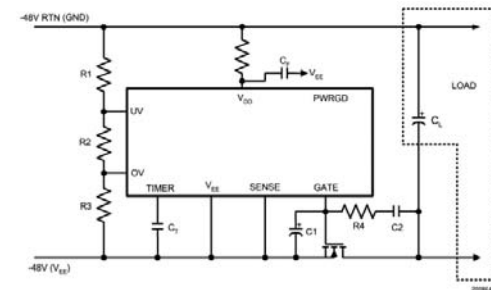
- AC-DC
- DC-DC
- BOOST
- SEPIC
- 24VDC power
- 36VDC power
- 42VDC power
- 48VDC power
- Backplane Power
- Phantom Power
- Hot-swap Controller
- POL
- SMPS
- Linear Power
- Power Management

CO-SELL WITH

- Step-Up (Boost) Regulators
- Switching Regulator ICs
- Controller ICs
- SEPIC Regulators
- Flyback Regulators
- MOSFETs
- Linear Regulators
- Power Inductors
- Current Sensing Resistors



NSPE series
Hybrid Construction



CROSS-REFERENCE & PROMOTION & ROAD MAP



Use **NPSE-x** Series to **Cross and Replace** these **Solid Polymer** Type **V-Chip** Alum E-caps:

Competition Series

- Nichicon **CF, CJ, CG**
- United Chemicon **PXS, PXF, PXE, PXA, PXH**
- Sanyo **OS-CON (SVP, SVQ)**

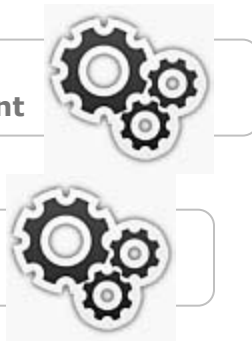


SMT **V-Chip** Format

Technology Road Map

Hybrid Construction
80V & 100VDC in development

Hybrid Construction
+135°C in development



New Product Guideline: Features, Applications, Cross-Reference, Sales Tips

NIC PRODUCT PROFILE

NSPE Series

Hybrid Aluminum Electrolytic Capacitors

EXPANDED!
A New Series Available...

Descriptions:
NSPE series HYBRID CONSTRUCTION aluminum electrolytic capacitors combine the ultra-low ESR and high current rating performance of SOLID FOLDED electrolyte version aluminum electrolytic capacitors, with the advantages of liquid electrolyte construction (lower salt cost, higher voltage ratings and improved tolerance to abnormal transient conditions).

Four NSPE series are now available covering voltage ratings up to 63VDC, operating temperatures to +125C, and load life ratings to 10,000 hours @ +105C. "YF" suffix versions, for automotive equipment, sourced to special production and inspection at TS-16949 certified production sites are standard on NSPE-H & NSPE-T and option on NSPE-S & NSPE-U.

Key Parameters - Substitutes & Selling Tips

- Is solid electrolye truly needed?
- Hybrid technology @ the end, so you don't get pulled into solid electrolye technology (and price) if not necessary
- Select NSPE series based upon:
 - ... Capacitance value
 - ... Voltage requirements
 - ... Operating Temperature Range
- Cross & Replace based upon:
 - ... Required lifetime
 - ... ESR and Ripple Current rating
 - ... Operating Temperature Range

Standard Specifications:

Series	Temp Rate	"Life Rate @ Max Temp"	Volt Rate	Cap Range	ESR @ 100Hz	"CR" @ Max Temp"	Failure Mode	Auto Equipment
NSPE-S	-40°C to 105°C	3K, 5K hrs	6.3=100%	10 - 1000µF	24-200mΩ	63-300A	<25°C	Option
NSPE-T	-40°C to 105°C	5K, 10, 20, 50 hrs	10=100%	2.2 - 220µF	20-1000	42-250A	<25°C	Standard
NSPE-H	-40°C to 105°C	1.5, 2, 2.5, 3K hrs	10=100%	3.3 - 220µF	20-1000	42-250A	<25°C	Standard
NSPE-U	-40°C to 105°C	2K hrs	6.3=100%	22 - 800µF	20-1000	42-150A	<25°C	Option

Cross and Replace these:

Competition Series
 Nichicon CF, CJ, CG
 United Chemicon PXS, PXF, PXE, PXA, PXH
 Sanyo OS-CON (SVP, SVQ)

Get full list of series Datasheets, Technical Information, and Specification Selection Guides for aluminum capacitors @ www.niccomp.com/aluminum

Aluminum Electrolytic Capacitors
For automotive equipment: [link](#)

Contact NIC TPNQ for support in replacing solid aluminum electrolytic capacitors from all major makers

Nc
NIC Components Corp.
www.niccomp.com | www.LowESR.com | www.RFPassives.com | www.SMTmagnetics.com

PRODUCT PROFILE: 1 Page Sales – Promotion Sheet



Link: www.niccomp.net/NSPE_PP0809.pdf

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