

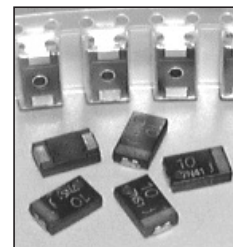
# Surface Mount Specialty Polymer Solid Aluminum Electrolytic Capacitors

NSP Series

## FEATURES

- NEW "X", "Y", "Z" & "U" TYPE HIGH RIPPLE CURRENT/VERY LOW ESR
- LOW PROFILE (1.1MM HEIGHT), RESIN PACKAGE
- REPLACES MULTIPLE TANTALUM CHIPS IN HIGH CURRENT POWER SUPPLIES AND VOLTAGE REGULATORS
- FITS EIA (7343) "D" AND "E" TANTALUM CHIP LAND PATTERNS
- Pb-FREE AND COMPATIBLE WITH REFLOW SOLDERING

**\*\*\*EXPANDED\*\*\*  
NEW ULTRA  
LOW ESR 4.5mΩ**



## CHARACTERISTICS

Rated Working Range	2.0 ~ 16VDC		
Rated Capacitance Range	2.2 ~ 560µF		
Operating Temperature Range	-40 ~ +105°C		
Capacitance Tolerance	± 20% (M)		
Max. Leakage Current (µA) After 2 Minutes (+20°C)	All Case Sizes	See Standard Products and Specifications Tables	
Max. Tan δ, 120Hz, +20°C			
High Temperature Load Life 1,000 Hours @ 105°C at Rated Working Voltage	Capacitance Change	Within ±10% of initial measured value	
	Tan δ	Less than specified max. value	
	Leakage Current	Less than specified max. value	
Damp Heat Test 500 Hours @ +60°C at 90 ~ 95% RH and Rated Working Voltage	Capacitance Change	8V ~ 16V	Within -20%/+40% of initial measured value
		6.3V	Within -20%/+50% of initial measured value
		4V	Within -20%/+60% of initial measured value
		2V, 2.5V	Within -20%/+70% of initial measured value
	Tan δ	Less than 200% of specified max. value	
Leakage Current	Less than specified max. value		

LOW ESR COMPONENT  
SOLID POLYMER ELECTROLYTE  
For Performance Data  
see [www.LowESR.com](http://www.LowESR.com)

## STANDARD PRODUCTS AND SPECIFICATIONS

NIC Part Number (Reflow 240°C)	NIC Part Number (Reflow 260°C)	WV (Vdc)	Cap. (µF)	Max. LC (µA)		Tan δ	Max. Ripple Current +105°C & 100KHz (mA)	Max. ESR +20°C & 100KHz (Ω)	Height H
				240°C	260°C				
NSP680M2D5TRF	N/A	2.0	68	8.1	N/A	0.06	2,000	0.028	1.1±0.1
NSP101M2D2TRF	NSP101M2D2ATRF		100	12.0	20.0	0.06	2,500	0.018	1.8±0.1
NSP101M2D2XTRF	NSP101M2D2XATRF		100	12.0	20.0	0.06	2,700	0.015	1.8±0.1
NSP101M2D2ZTRF	NSP101M2D2ZATRF		100	12.0	20.0	0.06	3,000	0.009	1.8±0.1
NSP121M2D2TRF	NSP121M2D2ATRF		120	14.4	24.0	0.06	2,500	0.018	1.8±0.1
NSP121M2D2XTRF	NSP121M2D2XATRF		120	14.4	24.0	0.06	2,700	0.015	1.8±0.1
NSP121M2D2ZTRF	NSP121M2D2ZATRF		120	14.4	24.0	0.06	3,000	0.009	1.8±0.1
NSP151M2D2TRF	NSP151M2D2ATRF		150	18.0	30.0	0.06	2,500	0.018	1.8±0.1
NSP151M2D2ZTRF	NSP151M2D2ZATRF		150	18.0	30.0	0.06	3,000	0.009	1.8±0.1
NSP181M2D2TRF	NSP181M2D2ATRF		180	21.6	36.0	0.06	2,500	0.018	1.8±0.1
N/A	NSP181M2D2ZATRF		180	-	36.0	0.06	3,000	0.009	1.8±0.1
NSP181M2D6ZTRF	NSP181M2D6ZATRF		180	21.6	36.0	0.06	3,000	0.009	1.9±0.2
NSP181M2D3TRF	NSP181M2D3ATRF		180	21.6	36.0	0.10	3,000	0.015	2.8±0.2
NSP181M2D3XTRF	NSP181M2D3XATRF		180	21.6	36.0	0.10	3,300	0.012	2.8±0.2
NSP221M2D3TRF	NSP221M2D3ATRF		220	26.4	44.0	0.10	3,000	0.015	2.8±0.2
NSP221M2D6ZTRF	NSP221M2D6ZATRF		220	26.4	44.0	0.10	3,000	0.009	1.9±0.2
NSP221M2D3XTRF	NSP221M2D3XATRF		220	26.4	44.0	0.10	3,300	0.012	2.8±0.2
N/A	NSP221M2D6ATRF		220	-	44.0	0.06	2,700	0.015	1.9±0.2
N/A	NSP271M2D6ZATRF		270	-	37.5	0.06	3,000	0.009	1.9±0.2
NSP271M2D6YTRF	NSP271M2D6YATRF		270	32.4	37.5	0.06	3,500	0.006	1.9±0.2
N/A	NSP271M2D6UATRF		270	-	37.5	0.06	3,800	0.0045	1.9±0.2
NSP271M2D3TRF	NSP271M2D3ATRF		270	32.4	54.0	0.10	3,000	0.015	2.8±0.2
NSP271M2D3XTRF	NSP271M2D3XATRF		270	32.4	54.0	0.10	3,300	0.012	2.8±0.2
N/A	NSP271M2D3YATRF		270	-	54.0	0.10	3,400	0.009	2.8±0.2
NSP271M2D3ZTRF	NSP271M2D3ZATRF		270	32.4	54.0	0.10	3,500	0.007	2.8±0.2
NSP271M2D4TRF	NSP271M2D4ATRF		270	32.4	54.0	0.10	3,300	0.012	4.2±0.1
NSP271M2D4XTRF	NSP271M2D4XATRF		270	32.4	54.0	0.10	3,500	0.010	4.2±0.1
N/A	NSP331M2D6ATRF		330	-	66.0	0.06	2,700	0.015	1.9±0.2
N/A	NSP331M2D6ZATRF		330	-	45.0	0.10	3,000	0.009	1.9±0.2

## PRECAUTIONS

Please review the notes on correct use, safety and precautions found on pages T10 & T11 of NIC's Electrolytic Capacitor catalog.  
Also found at [www.niccomp.com/precautions](http://www.niccomp.com/precautions)  
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: [tpmg@niccomp.com](mailto:tpmg@niccomp.com)



# Surface Mount Specialty Polymer Solid Aluminum Electrolytic Capacitors

NSP Series

NIC Part Number (Reflow 240°C)	NIC Part Number (Reflow 260°C)	WV (Vdc)	Cap. (µF)	Max. LC (µA)		Tan δ	Max. Ripple Current +105°C & 100KHz (mA)	Max. ESR +20°C & 100KHz (Ω)	Height H	
				240°C	260°C					
NSP331M2D6YTRF	NSP331M2D6YATRF	2.0	330	39.6	45.0	0.06	3,500	0.006	1.9±0.2	
N/A	NSP331M2D6UATRF		330	-	45.0	0.06	3,500	0.0045	1.9±0.2	
NSP331M2D3TRF	NSP331M2D3ATRF		330	39.6	66.0	0.10	3,000	0.015	2.8±0.2	
NSP331M2D3XTRF	NSP331M2D3XATRF		330	39.6	66.0	0.10	3,300	0.012	2.8±0.2	
N/A	NSP331M2D3YATRF		330	-	66.0	0.10	3,400	0.009	2.8±0.2	
NSP331M2D3ZTRF	NSP331M2D3ZATRF		330	39.6	66.0	0.10	3,500	0.007	2.8±0.2	
NSP331M2D4TRF	NSP331M2D4ATRF		330	39.6	66.0	0.10	3,300	0.012	4.2±0.1	
NSP331M2D4XTRF	NSP331M2D4XATRF		330	39.6	66.0	0.10	3,500	0.010	4.2±0.1	
N/A	NSP391M2D6ATRF		390	-	78.0	0.06	2,700	0.015	1.9±0.2	
N/A	NSP391M2D6ZATRF		390	-	78.0	0.06	3,000	0.009	1.9±0.2	
NSP391M2D6YTRF	NSP391M2D6YATRF		390	46.8	78.0	0.06	3,500	0.006	1.9±0.2	
N/A	NSP391M2D6UATRF		390	-	78.0	0.06	3,800	0.0045	1.9±0.2	
NSP391M2D3TRF	NSP391M2D3ATRF		390	46.8	78.0	0.10	3,000	0.015	2.8±0.2	
N/A	NSP391M2D3YATRF		390	-	78.0	0.10	3,400	0.009	2.8±0.2	
NSP391M2D3ZTRF	NSP391M2D3ZATRF		390	46.8	78.0	0.10	3,500	0.007	2.8±0.2	
NSP391M2D4TRF	NSP391M2D4ATRF		390	46.8	78.0	0.10	3,300	0.012	4.2±0.1	
NSP391M2D4XTRF	NSP391M2D4XATRF		390	46.8	78.0	0.10	3,500	0.010	4.2±0.1	
N/A	NSP391M2D4YATRF		390	-	78.0	0.10	3,700	0.007	4.2±0.1	
NSP391M2D4ZTRF	NSP391M2D4ZATRF		390	46.8	78.0	0.10	4,000	0.005	4.2±0.1	
N/A	NSP471M2D6ATRF		470	-	94.0	0.06	2,700	0.015	1.9±0.2	
N/A	NSP471M2D6ZATRF		470	-	94.0	0.06	3,000	0.009	1.9±0.2	
NSP471M2D6YTRF	NSP471M2D6YATRF		470	56.4	94.0	0.06	3,500	0.006	1.9±0.2	
N/A	NSP471M2D6UATRF		470	-	94.0	0.06	3,800	0.0045	1.9±0.2	
NSP471M2D4TRF	NSP471M2D4ATRF		470	56.4	94.0	0.10	3,300	0.012	4.2±0.1	
N/A	NSP471M2D3YATRF		470	-	94.0	0.10	3,400	0.009	2.8±0.1	
NSP471M2D4XTRF	NSP471M2D4XATRF		470	56.4	94.0	0.10	3,500	0.010	4.2±0.1	
N/A	NSP471M2D4YATRF		470	-	94.0	0.10	3,700	0.007	4.2±0.1	
NSP471M2D4ZTRF	NSP471M2D4ZATRF		470	56.4	94.0	0.10	4,000	0.005	4.2±0.1	
NSP561M2D4TRF	NSP561M2D4ATRF		560	67.2	112.0	0.10	3,300	0.012	4.2±0.1	
N/A	NSP561M2D4YATRF		560	-	112.0	0.10	3,700	0.007	4.2±0.1	
NSP561M2D4ZTRF	NSP561M2D4ZATRF		560	67.2	112.0	0.10	4,000	0.005	4.2±0.1	
NSP560M2.5D5TRF	N/A		2.5	56	8.4	-	0.06	2,000	0.028	1.1±0.1
NSP820M2.5D2TRF	NSP820M2.5D2ATRF			82	12.3	20.5	0.06	2,500	0.018	1.8±0.1
NSP820M2.5D2XTRF	NSP820M2.5D2XATRF			82	12.3	20.5	0.06	2,700	0.015	1.8±0.1
NSP101M2.5D2TRF	NSP101M2.5D2ATRF			100	15.0	25.0	0.06	2,500	0.018	1.8±0.1
NSP101M2.5D2XTRF	NSP101M2.5D2XATRF			100	15.0	25.0	0.06	2,700	0.015	1.8±0.1
NSP101M2.5D2ZTRF	NSP101M2.5D2ZATRF			100	15.0	25.0	0.06	3,000	0.009	1.8±0.1
NSP121M2.5D2TRF	NSP121M2.5D2ATRF			120	18.0	30.0	0.06	2,500	0.018	1.8±0.1
NSP121M2.5D2ZTRF	NSP121M2.5D2ZATRF			120	18.0	30.0	0.06	3,000	0.009	1.8±0.1
NSP151M2.5D2TRF	NSP151M2.5D2ATRF			150	22.5	37.5	0.06	2,500	0.018	1.8±0.1
N/A	NSP151M2.5D2ZATRF			150	-	37.5	0.06	3,000	0.009	1.8±0.1
NSP151M2.5D6ZTRF	NSP151M2.5D6ZATRF			150	22.5	37.5	0.06	3,000	0.009	1.9±0.2
NSP151M2.5D3TRF	NSP151M2.5D3ATRF	150		22.5	37.5	0.10	3,000	0.015	2.8±0.2	
NSP151M2.5D3XTRF	NSP151M2.5D3XATRF	150		22.5	37.5	0.10	3,300	0.012	2.8±0.2	
NSP181M2.5D3TRF	NSP181M2.5D3ATRF	180		27.0	45.0	0.10	3,000	0.015	2.8±0.2	
NSP181M2.5D3XTRF	NSP181M2.5D3XATRF	180		27.0	45.0	0.10	3,300	0.012	2.8±0.2	
NSP181M2.5D6ZTRF	NSP181M2.5D6ZATRF	180		27.0	45.0	0.10	3,000	0.009	1.9±0.2	
N/A	NSP221M2.5D6ATRF	220		-	55.0	0.06	2,700	0.015	1.9±0.2	
N/A	NSP221M2.5D6ZATRF	220		-	55.0	0.06	3,000	0.009	1.9±0.2	
NSP221M2.5D3TRF	NSP221M2.5D3ATRF	220		33.0	55.0	0.10	3,000	0.015	2.8±0.2	
NSP221M2.5D3XTRF	NSP221M2.5D3XATRF	220		33.0	55.0	0.10	3,300	0.012	2.8±0.2	
N/A	NSP221M2.5D3YATRF	220		-	78.0	0.10	3,400	0.009	2.8±0.2	
NSP221M2.5D3ZTRF	NSP221M2.5D3ZATRF	220		33.0	55.0	0.10	3,500	0.007	2.8±0.2	
NSP221M2.5D4TRF	NSP221M2.5D4ATRF	220		33.0	55.0	0.10	3,300	0.012	4.2±0.1	
NSP221M2.5D4XTRF	NSP221M2.5D4XATRF	220		33.0	55.0	0.10	3,500	0.010	4.2±0.1	
NSP271M2.5D3TRF	NSP271M2.5D3ATRF	270		40.5	67.5	0.10	3,000	0.015	2.8±0.2	
N/A	NSP271M2.5D3YATRF	270		-	78.0	0.10	3,400	0.009	2.8±0.2	
NSP271M2.5D3ZTRF	NSP271M2.5D3ZATRF	270		40.5	67.5	0.10	3,500	0.007	2.8±0.2	
NSP271M2.5D4TRF	NSP271M2.5D4ATRF	270		40.5	67.5	0.10	3,300	0.012	4.2±0.1	
NSP271M2.5D4XTRF	NSP271M2.5D4XATRF	270		40.5	67.5	0.10	3,500	0.010	4.2±0.1	



# Surface Mount Specialty Polymer Solid Aluminum Electrolytic Capacitors

NSP Series

NIC Part Number (Reflow 240°C)	NIC Part Number (Reflow 260°C)	WV (Vdc)	Cap. (μF)	Max. LC (μA)		Tan δ	Max. Ripple Current +105°C & 100KHz (mA)	Max. ESR +20°C & 100KHz (Ω)	Height H	
				240°C	260°C					
N/A	NSP331M2.5D6ATRF	2.5	330	-	82.5	0.06	2,700	0.015	1.9±0.2	
N/A	NSP331M2.5D6ZATRF		330	-	82.5	0.06	3,000	0.009	1.9±0.2	
NSP331M2.5D6YTRF	NSP331M2.5D6YATRF		330	49.5	82.5	0.06	3,500	0.006	1.9±0.2	
NSP331M2.5D4TRF	NSP331M2.5D4ATRF		330	49.5	82.5	0.10	3,300	0.012	4.2±0.1	
NSP331M2.5D4XTRF	NSP331M2.5D4XATRF		330	49.5	82.5	0.10	3,500	0.010	4.2±0.1	
N/A	NSP331M2.5D4YATRF		330	-	82.5	0.10	3,700	0.007	4.2±0.1	
NSP331M2.5D4ZTRF	NSP331M2.5D4ZATRF		330	49.5	67.5	0.10	4,000	0.005	4.2±0.1	
N/A	NSP391M2.5D6ATRF		390	-	97.5	0.06	2,700	0.015	1.9±0.2	
N/A	NSP391M2.5D6ZATRF		390	-	97.5	0.06	3,000	0.009	1.9±0.2	
NSP391M2.5D6YTRF	NSP391M2.5D6YATRF		390	58.5	97.5	0.06	3,500	0.006	1.9±0.2	
NSP391M2.5D4TRF	NSP391M2.5D4ATRF		390	58.5	97.5	0.10	3,300	0.012	4.2±0.1	
N/A	NSP391M2.5D4YATRF		390	-	97.5	0.10	3,700	0.007	4.2±0.1	
NSP391M2.5D4ZTRF	NSP391M2.5D4ZATRF		390	58.5	97.5	0.10	4,000	0.005	4.2±0.1	
NSP471M2.5D4TRF	NSP471M2.5D4ATRF		470	70.5	117.5	0.10	3,300	0.012	4.2±0.1	
N/A	NSP471M2.5D4YATRF		470	-	117.5	0.10	3,700	0.007	4.2±0.1	
NSP390M4D5TRF	N/A		4.0	39	9.3	-	0.06	2,000	0.028	1.1±0.1
NSP470M4D5TRF	N/A			47	11.3	-	0.06	2,000	0.028	1.1±0.1
NSP560M4D2TRF	NSP560M4D2ATRF			56	13.4	22.4	0.06	2,500	0.018	1.8±0.1
NSP560M4D2XTRF	NSP560M4D2XATRF			56	13.4	22.4	0.06	2,700	0.015	1.8±0.1
NSP680M4D2TRF	NSP680M4D2ATRF			68	16.3	27.2	0.06	2,500	0.018	1.8±0.1
NSP680M4D2XTRF	NSP680M4D2XATRF	68		16.3	27.2	0.06	2,700	0.015	1.8±0.1	
NSP820M4D2TRF	NSP820M4D2ATRF	82		19.7	32.8	0.06	2,500	0.018	1.8±0.1	
NSP820M4D2XTRF	NSP820M4D2XATRF	82		19.7	32.8	0.06	2,700	0.015	1.8±0.1	
NSP820M4D2ZTRF	NSP820M4D2ZATRF	82		19.7	32.8	0.06	3,000	0.009	1.8±0.1	
NSP820M4D6ZTRF	NSP820M4D6ZATRF	82		19.7	32.8	0.06	3,000	0.009	1.9±0.2	
NSP101M4D2TRF	NSP101M4D2ATRF	100		24.0	40.0	0.06	1,800	0.025	1.8±0.1	
NSP101M4D6ZTRF	NSP101M4D6ZATRF	100		24.0	40.0	0.06	3,000	0.009	1.9±0.2	
NSP121M4D3TRF	NSP121M4D3ATRF	120		28.8	48.0	0.10	3,000	0.015	2.8±0.2	
NSP121M4D3XTRF	NSP121M4D3XATRF	120		28.8	48.0	0.10	3,300	0.012	2.8±0.2	
N/A	NSP151M4D6ATRF	150		-	60.0	0.06	2,700	0.015	1.9±0.2	
N/A	NSP151M4D6ZATRF	150		-	60.0	0.06	3,000	0.009	1.9±0.2	
NSP151M4D3TRF	NSP151M4D3ATRF	150		36.0	60.0	0.10	3,000	0.015	2.8±0.2	
NSP151M4D3XTRF	NSP151M4D3XATRF	150		36.0	60.0	0.10	3,300	0.012	2.8±0.2	
N/A	NSP151M4D3YATRF	150		-	60.0	0.10	3,400	0.009	2.8±0.2	
NSP151M4D3ZTRF	NSP151M4D3ZATRF	150		36.0	60.0	0.10	3,500	0.007	2.8±0.2	
N/A	NSP181M4D6ATRF	180		-	72.0	0.06	2,700	0.015	1.9±0.2	
N/A	NSP181M4D6ATRF	180		-	72.0	0.06	2,700	0.015	1.9±0.2	
NSP181M4D3TRF	NSP181M4D3ATRF	180		43.2	72.0	0.10	2,500	0.018	2.8±0.2	
NSP181M4D4TRF	NSP181M4D4ATRF	180		43.2	72.0	0.10	3,300	0.012	4.2±0.1	
N/A	NSP181M4D3YATRF	180		-	72.0	0.10	3,400	0.009	2.8±0.2	
NSP181M4D4XTRF	NSP181M4D4XATRF	180		43.2	72.0	0.10	3,500	0.010	4.2±0.1	
N/A	NSP221M4D6ATRF	220		-	88.0	0.06	2,700	0.015	1.9±0.2	
N/A	NSP221M4D6ZATRF	220		-	88.0	0.06	3,000	0.009	1.9±0.2	
NSP221M4D4TRF	NSP221M4D4ATRF	220		52.8	88.0	0.10	3,300	0.012	4.2±0.1	
NSP221M4D4XTRF	NSP221M4D4XATRF	220		52.8	88.0	0.10	3,500	0.010	4.2±0.1	
N/A	NSP221M4D4YATRF	220	-	88.0	0.10	3,700	0.007	4.2±0.1		
NSP221M4D4ZTRF	NSP221M4D4ZATRF	220	52.8	88.0	0.10	4,000	0.005	4.2±0.1		
NSP271M4D4TRF	NSP271M4D4ATRF	270	52.8	108.0	0.10	3,300	0.012	4.2±0.1		
N/A	NSP271M4D4YATRF	270	-	108.0	0.10	3,700	0.007	4.2±0.1		
N/A	NSP331M4D4ATRF	330	-	132.0	0.10	3,300	0.012	4.2±0.1		
NSP100M6.3D2TRF	NSP100M6.3D2ATRF	6.3	10	3.0	6.3	0.06	1,400	0.055	1.8±0.1	
NSP220M6.3D2TRF	NSP220M6.3D2ATRF		22	5.5	13.9	0.06	1,600	0.040	1.8±0.1	
NSP330M6.3D5TRF	N/A		33	8.3	20.8	0.06	2,000	0.028	1.1±0.1	
NSP330M6.3D2TRF	NSP330M6.3D2ATRF		33	8.3	20.8	0.06	2,000	0.028	1.8±0.1	
NSP470M6.3D2TRF	NSP470M6.3D2ATRF		47	11.8	29.6	0.06	2,500	0.018	1.8±0.1	
NSP470M6.3D2XTRF	NSP470M6.3D2XATRF		47	11.8	29.6	0.06	2,700	0.015	1.8±0.1	
NSP560M6.3D2ZTRF	N/A		56	14.1	-	0.06	3,000	0.009	1.8±0.1	
NSP680M6.3D2TRF	NSP680M6.3D2ATRF		68	17.1	42.8	0.06	2,500	0.018	1.8±0.1	
NSP680M6.3D2XTRF	NSP680M6.3D2XATRF		68	17.1	42.8	0.06	2,700	0.015	1.8±0.1	
NSP680M6.3D6ZTRF	N/A		68	17.1	-	0.06	3,000	0.009	1.9±0.2	



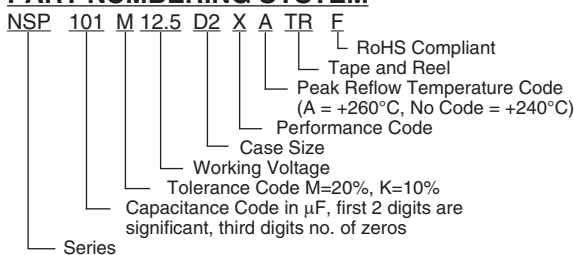
# Surface Mount Specialty Polymer Solid Aluminum Electrolytic Capacitors

NSP Series

NIC Part Number (Reflow 240°C)	NIC Part Number (Reflow 260°C)	WV (Vdc)	Cap. (µF)	Max. LC (µA)		Tan δ	Max. Ripple Current +105°C & 100KHz (mA)	Max. ESR +20°C & 100KHz (Ω)	Height H	
				240°C	260°C					
N/A	NSP101M6.3D6ATRF	6.3	68	-	63.0	0.06	2,700	0.015	1.9±0.2	
NSP101M6.3D3TRF	NSP101M6.3D3ATRF		100	25.2	63.0	0.10	3,000	0.015	2.8±0.2	
NSP101M6.3D3XTRF	NSP101M6.3D3XATRF		100	25.2	63.0	0.10	3,300	0.012	2.8±0.2	
N/A	NSP121M6.3D6ATRF		120	30.2	-	0.06	2,700	0.015	1.9±0.2	
NSP121M6.3D3TRF	NSP121M6.3D3ATRF		120	30.2	75.6	0.10	3,000	0.015	2.8±0.2	
NSP121M6.3D3XTRF	NSP121M6.3D3XATRF		120	30.2	75.6	0.10	3,300	0.012	2.8±0.2	
NSP121M6.3D3ZTRF	N/A		120	30.2	-	0.10	3,500	0.007	2.8±0.2	
N/A	NSP151M6.3D6ZATRF		150	37.8	94.5	0.06	3,000	0.009	1.9±0.2	
NSP151M6.3D3TRF	NSP151M6.3D3ATRF		150	37.8	94.5	0.10	2,500	0.018	2.8±0.2	
NSP151M6.3D4TRF	NSP151M6.3D4ATRF		150	37.8	94.5	0.10	3,300	0.012	4.2±0.1	
NSP151M6.3D4XTRF	NSP151M6.3D4XATRF		150	37.8	94.5	0.10	3,500	0.010	4.2±0.1	
NSP181M6.3D4TRF	NSP181M6.3D4ATRF		180	45.4	113.4	0.10	3,300	0.012	4.2±0.1	
NSP181M6.3D4XTRF	NSP181M6.3D4XATRF		180	45.4	113.4	0.10	3,500	0.010	4.2±0.1	
NSP181M6.3D4YTRF	N/A		180	45.4	-	0.10	3,700	0.007	4.2±0.1	
NSP181M6.3D4ZTRF	N/A		180	45.4	-	0.10	4,000	0.005	4.2±0.1	
NSP221M6.3D4TRF	NSP221M6.3D4ATRF		220	55.4	138.6	0.10	3,000	0.015	4.2±0.1	
NSP8R2M8D2TRF	NSP8R2M8D2ATRF		8.0	8.2	3.0	6.3	0.06	1,400	0.055	1.8±0.1
NSP150M8D2TRF	NSP150M8D2ATRF			15	4.8	12.0	0.06	1,600	0.040	1.8±0.1
NSP220M8D5TRF	N/A			22	7.0	-	0.06	2,000	0.028	1.1±0.1
NSP220M8D2TRF	NSP220M8D2ATRF			22	7.0	17.6	0.06	2,000	0.028	1.8±0.1
NSP330M8D2TRF	NSP330M8D2ATRF	33		10.5	26.4	0.06	2,500	0.018	1.8±0.1	
NSP470M8D2TRF	NSP470M8D2ATRF	47		15.0	37.6	0.06	1,800	0.025	1.8±0.1	
NSP680M8D3TRF	NSP680M8D3ATRF	68		21.7	54.4	0.10	3,000	0.015	2.8±0.2	
NSP101M8D3TRF	NSP101M8D3ATRF	100		32.0	80.0	0.10	2,500	0.018	2.8±0.2	
NSP101M8D4TRF	NSP101M8D4ATRF	100		32.0	80.0	0.10	3,300	0.012	4.2±0.1	
NSP151M8D4TRF	NSP151M8D4ATRF	150		48.0	120.0	0.10	3,000	0.015	4.2±0.1	
NSP4R7M12.5D2TRF	N/A	12.5		4.7	3.0	-	0.06	1,000	0.080	1.8±0.1
NSP100M12.5D2TRF	N/A			10	5.0	-	0.06	1,000	0.060	1.8±0.1
NSP150M12.5D5TRF	N/A		15	7.5	-	0.06	1,400	0.040	1.1±0.1	
NSP150M12.5D2TRF	N/A		15	7.5	-	0.06	1,300	0.050	1.8±0.1	
NSP220M12.5D2TRF	N/A		22	11.0	-	0.06	1,600	0.030	1.8±0.1	
NSP2R2M16D2TRF	N/A	16	2.2	3.0	-	0.06	1,000	0.110	1.8±0.1	
NSP4R7M16D2TRF	N/A		4.7	3.0	-	0.06	1,000	0.080	1.8±0.1	
NSP6R8M16D2TRF	N/A		6.8	4.4	-	0.06	1,000	0.070	1.8±0.1	
NSP8R2M16D2TRF	N/A		8.2	5.2	-	0.06	1,300	0.045	1.8±0.1	

## New Values

### PART NUMBERING SYSTEM



### TERMINATION MATERIAL:

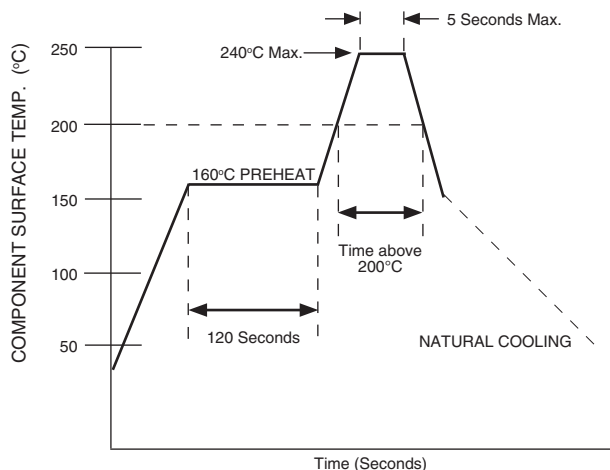
- D2 - D5 and D2X - D5X Sizes
  - Base: Fe (~ 100µm)
  - Under Plating: Cu (~ 5µm)
  - Finish Plating: Sn (5 ~ 9µm)
- D2Z - D6Z Sizes
  - Base: Cu (~ 105µm)
  - Finish Plating: Sn (5 ~ 9µm)



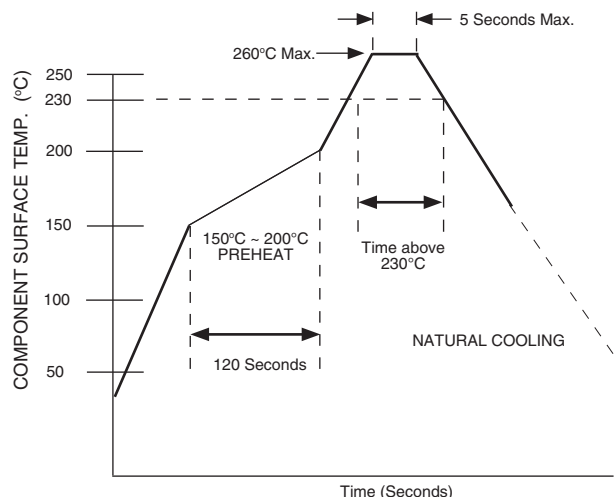
# Surface Mount Specialty Polymer Solid Aluminum Electrolytic Capacitors

NSP Series

## RECOMMENDED 240°C REFLOW SOLDERING PROFILE (D2, D2Z, D3, D3X, D3Z, D4, D4X, D4Z, D5, D6Z)



## RECOMMENDED 260°C REFLOW SOLDERING PROFILE (D2A, D2XA, D2ZA, D3A, D3XA, D3YA, D4A, D4XA, D4YA, D6A, D6ZA)



### DURATION ABOVE 200°C (FOR 240°C REFLOW PARTS)

If Peak Soldering Temperature is	Maximum Time Above +200°C is
240°C	30 seconds
230°C	40 seconds
220°C	50 seconds

### DURATION ABOVE 230°C (FOR 260°C REFLOW PARTS)

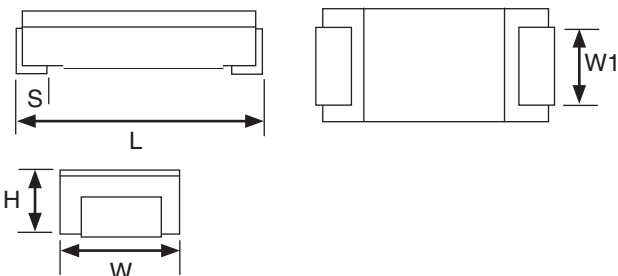
If Peak Soldering Temperature is	Maximum Time Above +230°C is
260°C	40 seconds
255°C	50 seconds
250°C	60 seconds

#### Notes:

1. SAC alloy (+217°C) reflow soldering compatible
2. Soldering heat limits apply to the top surface of component
3. If you have concerns about your reflow soldering profile review them with NIC to insure compatible [tpmg@niccomp.com]
4. Two passes through the reflow process are allowed (cooling down period between process).

### DIMENSIONS (mm)

Case Code	L ±0.4	W ±0.3	H	W1 ±0.2	S ±0.3
D2 ~ D6	7.3	4.3	see values table	2.4	1.3

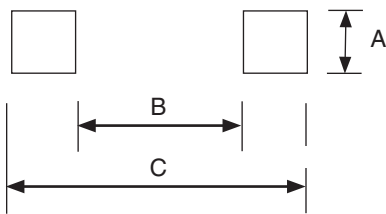


### VOLTAGE CODES

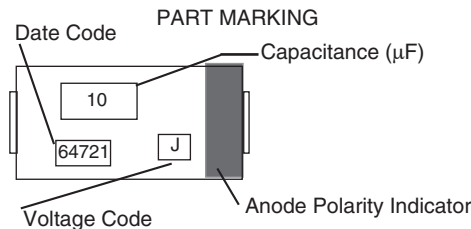
Voltage	Code
2.0Vdc	D
2.5Vdc	E
6.3Vdc	J
8Vdc	K
12.5Vdc	B
16Vdc	C

### RECOMMENDED LAND PATTERNS (mm)

Case Code	A	B	C
D2 ~ D6	2.8	4.0	8.8



Please note the NSP series will fit on standard "D" and "E" size (7343) tantalum chip capacitor land patterns

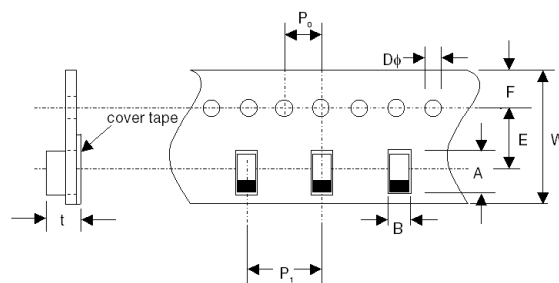


# Surface Mount Specialty Polymer Solid Aluminum Electrolytic Capacitors

NSP Series

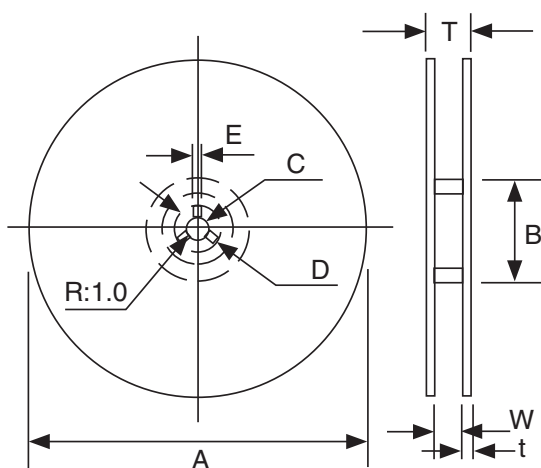
## CARRIER TAPE DIMENSIONS (mm)

Case Code	A±0.2	B±0.2	Dφ	E±0.1	F±0.1	P <sub>o</sub> ±0.1	P <sub>i</sub> ±0.1	t±0.2	W±0.3
D5	7.7	4.6	1.5 <sup>+0.1</sup>	1.75	5.5	4.0	8.0	1.5	12.0
D2, D6								2.1	
D3								3.4	
D4								4.5	



## REEL DIMENSIONS (mm)

A±2.0	B min.	C±0.5	D±0.8	E±0.5	T±1.0	t	W±1.0
330	50	13.0	21.0	2.0	20.0	3.0	14



Case Code	Reel Quantity
D5, D6, D2	3,500
D3, D4	2,000

