

Surface Mount Solid Aluminum Electrolytic Capacitors

NPC Series

FEATURES

- LOW IMPEDANCE & ESR AT HIGH FREQUENCY
- HIGH RIPPLE CURRENT
- REPLACES MULTIPLE TANTALUM CHIPS IN POWER SUPPLIES
- FITS EIA (7343) "D" LAND PATTERNS
- Pb-FREE (GOLD TERMINATION PLATING)
- COMPATIBLE WITH +250°C REFLOW SOLDERING

**RoHS
Compliant**

includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

Rated Working Range	2.0 ~ 6.3VDC		
Rated Capacitance Range	33 ~ 390μF		
Operating Temperature Range	-55 ~ +105°C		
Capacitance Tolerance	± 20% (M)		
Max. Leakage Current (μA) After 5 Minutes (+20°C)	≤0.04CV		
Max. Tan δ, 120Hz, +20°C	D1, D6	≤0.05	
	D7, D8	≤0.1	
High Temperature Load Life 2,000 Hours @ 105°C at Rated Working Voltage	Capacitance Change	Within ±20% of initial measured value	
	Tan δ	D7, D8	Less than 150% of specified max. value
		D1, D6	Less than 200% of specified max. value
	Leakage Current	Less than specified max. value	
Moisture Resistance* 500 Hours @ +60°C at 90 ~ 95% RH and No Voltage Applied	Capacitance Change	Within -20%/+40% of initial measured value	
	Tan δ	D7, D8	Less than 150% of specified max. value
		D1, D6	Less than 200% of specified max. value
	Leakage Current	Less than 300% of specified max. value	

*JEDEC MSL-3

STANDARD PRODUCTS AND SPECIFICATIONS

NIC Part Number	WV (Vdc)	Cap. (μF)	Max. LC (μA)	Tan δ	Max. Ripple Current 100KHz @ +105°C	Max. ESR +20°C & 100KHz (Ω)	Height H ± 0.1
*NPC390M2D__TRF	2	39	-	-	-	-	-
NPC101M2D1XTRF		100	8.0	0.05	3,000	0.012	1.4
NPC101M2D1ZTRF		100	8.0	0.05	3,000	0.009	1.4
NPC101M2D6XTRF		100	8.0	0.05	3,000	0.013	1.9
NPC221M2D6XTRF		220	17.6	0.10	3,500	0.012	1.9
NPC221M2D6ZTRF		220	17.6	0.10	3,500	0.009	1.9
NPC221M2D7XTRF		220	17.6	0.10	3,500	0.010	2.7
NPC331M2D8ZTRF		330	26.4	0.10	3,500	0.007	2.9
NPC391M2D8ZTRF		390	31.2	0.10	3,500	0.007	2.9
*NPC471M2D__TRF		470	-	-	-	-	-
NPC820M2.5D6XTRF	2.5	82	8.2	0.05	3,000	0.013	1.9
NPC820M2.5D6ZTRF		82	8.2	0.05	3,000	0.009	1.9
NPC181M2.5D7XTRF		180	18.0	0.10	3,500	0.010	2.7
NPC680M4D6XTRF	4	68	10.9	0.05	3,000	0.013	1.9
*NPC101M4D__TRF		100	-	-	-	-	-
NPC151M4D7XTRF		150	24.0	0.10	3,500	0.010	2.7
*NPC221M4D__TRF	6.3	220	-	-	-	-	-
NPC330M6.3D6XTRF		33	8.3	0.05	2,000	0.028	1.9
NPC470M6.3D6XTRF		47	11.8	0.05	3,000	0.013	1.9
NPC101M6.3D7XTRF		100	25.2	0.10	3,500	0.010	2.7
*NPC100M16D__TRF	16	10	-	-	-	-	-

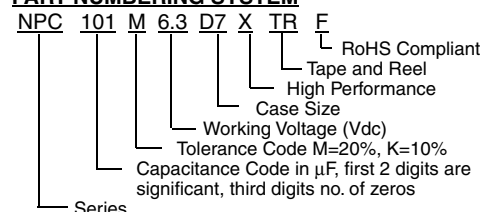
*Values Under Development

RIPPLE CURRENT

FREQUENCY CORRECTION FACTORS

Frequency	1KHz ≤f< 10KHz	10KHz ≤f< 100KHz	100KHz ≤f< 1MHz
Correction Factor	0.6	0.85	1.0

PART NUMBERING SYSTEM

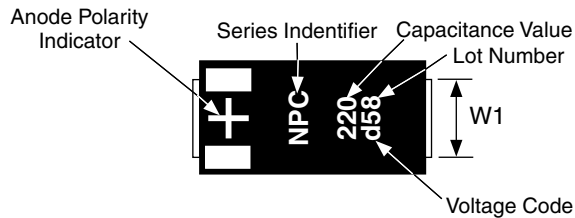
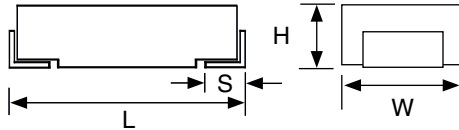


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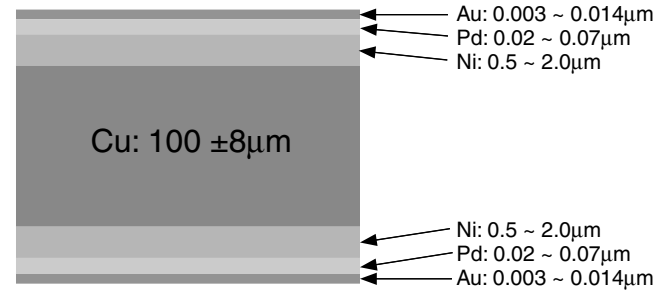
NPC Series

DIMENSIONS (mm)

Case Code	L ± 0.2	W ± 0.2	H ± 0.1	W1 ± 0.1	S ± 0.2
D1	7.3	4.3	1.4	2.4	1.3
D6			1.9		
D7			2.7		
D8			2.9		



TERMINATION MATERIAL:

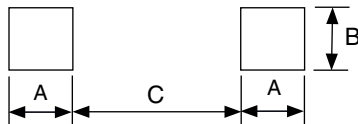


VOLTAGE CODES

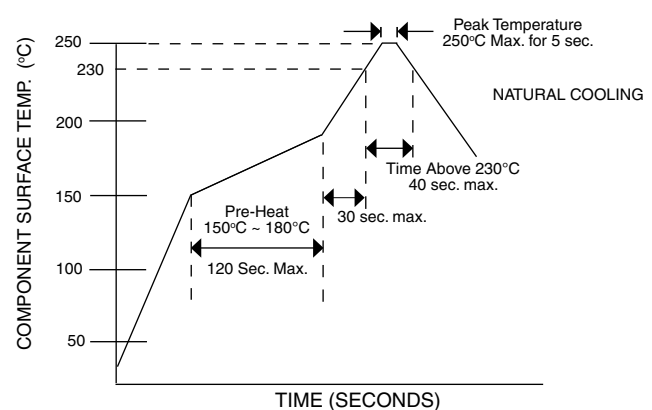
Voltage	Code
2.0VDC	d
4.0VDC	g
6.3VDC	j

RECOMMENDED LAND PATTERNS (mm)

Case Code	a	b	c
D1, D6, D7, D8	2.4	2.9	3.7



RECOMMENDED REFLOW SOLDERING PROFILE



APPLICATION NOTES:

1. NPC Series cannot be used in coupling, time-constant or other circuits that are greatly affected by leakage current.
2. NPC parts are polarized so be sure to verify component orientation when mounting components.
3. Do not apply over voltage exceeding the rated voltage.
4. Do not apply ripple current over the specified maximum ripple current rating.

NOTES ON REFLOW SOLDERING:

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]

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
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: tpmg@niccomp.com



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REEL TAPE DIMENSIONS (mm)

Case Code	A ± 1.0	B ± 0.5	C ± 0.2	W ± 0.5	t ± 0.5	Reel Quantity
D1, D6	330	80	13	13.5	2.0	3,000
D7, D8						2,000

TAPE DIMENSIONS (mm)

Case Code	A ± 0.1	B ± 0.1	C ± 0.3	D ± 0.05	E ± 0.1	F ± 0.1	G ± 0.05	H ± 0.1	J -0/+0.1	K ± 0.1	t ± 0.05
D1	4.55	7.65	12.0	5.5	1.75	8.0	2.0	4.0	1.5	1.6	0.3
D6										2.1	
D7										2.9	
D8										3.1	

