

Surface Mount Solid Aluminum Electrolytic Capacitors

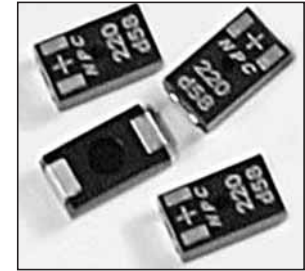
NPC Series

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 +260°C* REFLOW SOLDERING

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

Rated Working Range	2.0 ~ 8VDC		
Rated Capacitance Range	10 ~ 390 μ F		
Operating Temperature Range	-55 ~ +105°C		
Capacitance Tolerance	\pm 20% (M)		
Surge Voltage Rating	Rated Voltage x 1.25		
Max. Leakage Current (μ A) After 5 Minutes (+20°C)	\leq 0.04CV		
Max. Tan δ , 120Hz, +20°C	D1, D6	\leq 0.05	
	D7, D8	\leq 0.1	
High Temperature Load Life 2,000 Hours @ 105°C at Rated Working Voltage	Capacitance Change	Within \pm 20% of initial measured value	
	Tan δ	D7, D8 (D1 10 μ F/6.3V)	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 Less than 500% of specified max. value for D1 10 μ F/6.3V		

*JEDEC MSL-3

STANDARD PRODUCTS AND SPECIFICATIONS

NIC Part Number (+260°C Reflow)	WV (Vdc)	Cap. (μ F)	Max. LC (μ A)	Tan δ	Max. Ripple Current 100KHz @ +105°C	Max. ESR +20°C & 100KHz (Ω)	Height H \pm 0.1	
NPC101M2D1UATRF	2	100	8.0	0.05	3,000	0.005	1.4	
NPC101M2D1ZATRF		100	8.0	0.05	3,000	0.009	1.4	
NPC101M2D6XATRF		100	8.0	0.05	3,000	0.013	1.9	
NPC101M2D6ZATRF		100	8.0	0.05	3,000	0.009	1.9	
NPC121M2D6ZATRF		120	9.6	0.05	3,000	0.009	1.9	
NPC151M2D1UATRF		150	12.0	0.05	3,000	0.005	1.4	
NPC151M2D6ZATRF		150	12.0	0.05	3,000	0.009	1.9	
NPC181M2D6ZATRF		180	14.4	0.05	3,000	0.009	1.9	
NPC221M2D6YATRF		220	17.6	0.05	3,000	0.007	1.9	
NPC221M2D6ZATRF		220	17.6	0.05	3,000	0.009	1.9	
NPC221M2D7XATRF		220	17.6	0.10	3,500	0.010	2.7	
NPC271M2D8YATRF		270	21.6	0.10	3,500	0.007	2.9	
NPC331M2D6ZATRF		330	26.4	0.10	3,500	0.009	1.9*	
NPC331M2D6YATRF		330	26.4	0.10	3,500	0.006	1.9*	
NPC331M2D8YATRF		330	26.4	0.10	3,500	0.007	2.9	
NPC391M2D8YATRF		390	31.2	0.10	3,500	0.007	2.9	
NPC820M2.5D1ZATRF		2.5	82	8.2	0.05	3,000	0.009	1.4
NPC820M2.5D6XATRF			82	8.2	0.05	3,000	0.013	1.9
NPC820M2.5D6ZATRF	82		8.2	0.05	3,000	0.009	1.9	
NPC101M2.5D6ZATRF	100		10.0	0.05	3,000	0.009	1.9	
NPC121M2.5D6ZATRF	120		12.0	0.05	3,000	0.009	1.9	
NPC151M2.5D6ZATRF	150		15.0	0.05	3,000	0.009	1.9	
NPC181M2.5D7XATRF	180		18.0	0.10	3,500	0.010	2.7	
NPC221M2.5D8ZATRF	220		22.0	0.10	3,500	0.009	1.9*	
NPC221M2.5D8YATRF	220		22.0	0.10	3,500	0.007	2.9	
NPC271M2.5D8YATRF	270		27.0	0.10	3,500	0.007	2.9	
NPC331M2.5D8YATRF	330		33.0	0.10	3,500	0.007	2.9	

Denotes New Value

*height dimension tolerance \pm 0.2mm



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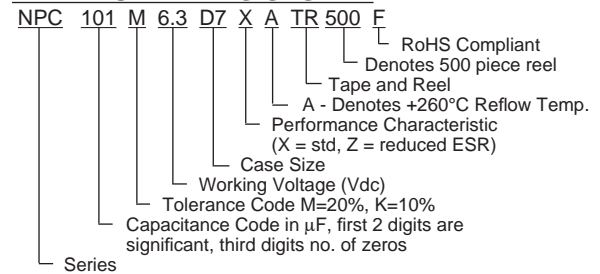
NIC Part Number (+260°C Reflow)	WV (Vdc)	Cap. (μ F)	Max. LC (μ A)	Tan δ	Max. Ripple Current 100KHz @ +105°C	Max. ESR +20°C & 100KHz (Ω)	Height H \pm 0.1
NPC680M4D1ZATRF	4.0	68	10.9	0.05	3,000	0.009	1.4
NPC680M4D6XATRF		68	10.9	0.05	3,000	0.013	1.9
NPC680M4D6ZATRF		68	10.9	0.05	3,000	0.009	1.9
NPC820M4D6XATRF		82	13.1	0.05	3,000	0.010	1.9
NPC101M4D6XATRF		100	16.0	0.05	3,000	0.010	1.9
NPC121M4D6XATRF		120	19.2	0.05	3,000	0.010	1.9
NPC151M4D6XATRF		150	24.0	0.05	3,000	0.010	1.9
NPC151M4D7XATRF		150	24.0	0.10	3,500	0.010	2.7
NPC181M4D8ZATRF		180	28.8	0.10	3,500	0.009	2.9
NPC221M4D8ZATRF		220	35.2	0.10	3,500	0.009	2.9
NPC271M4D8ZATRF		270	43.2	0.10	3,500	0.009	2.9
NPC330M6.3D6XATRF	6.3	33	8.3	0.05	3,000	0.015	1.9
NPC470M6.3D1XATRF		47	11.8	0.05	3,000	0.010	1.4
NPC470M6.3D6XATRF		47	11.8	0.05	3,000	0.013	1.9
NPC470M6.3D6ZATRF		47	11.8	0.05	3,000	0.009	1.9
NPC560M6.3D6XATRF		56	14.1	0.05	3,000	0.010	1.9
NPC680M6.3D6XATRF		68	17.1	0.05	3,000	0.010	1.9
NPC820M6.3D6XATRF		82	20.7	0.05	3,000	0.010	1.9
NPC101M6.3D6XATRF		100	25.2	0.05	3,000	0.010	1.9
NPC101M6.3D7XATRF		100	25.2	0.10	3,500	0.010	2.7
NPC121M6.3D8ZATRF		120	30.2	0.10	3,500	0.009	2.9
NPC151M6.3D8ZATRF		150	37.8	0.10	3,500	0.009	2.9
NPC150M8D6XATRF	8	15	4.8	0.05	3,000	0.015	1.9
NPC330M8D7XATRF		33	10.6	0.10	3,000	0.013	2.7

Please contact NIC for additional values (example: 10 μ F @ 6.3VDC)

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

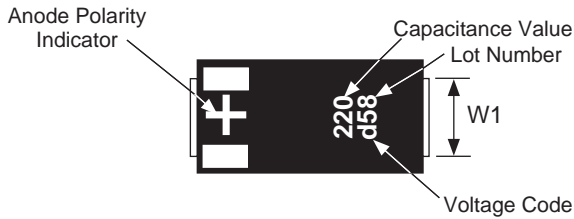
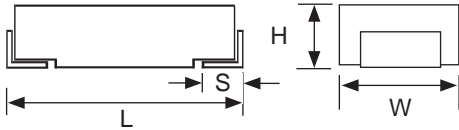


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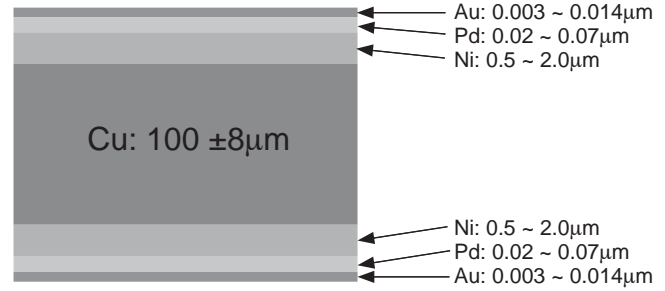
NPC Series

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:

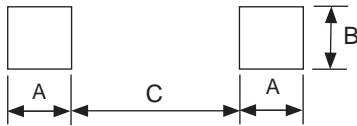


VOLTAGE CODES

Voltage	Code
2.0VDC	d
2.5VDC	e
4.0VDC	g
6.3VDC	j
8.0VDC	k

RECOMMENDED LAND PATTERNS (mm)

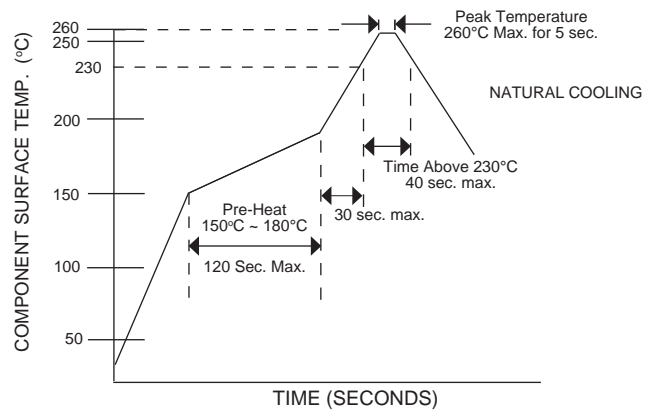
Case Code	a	b	c
D1, D6, D7, D8	2.4	2.9	3.7



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.

RECOMMENDED REFLOW SOLDERING PROFILE



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]



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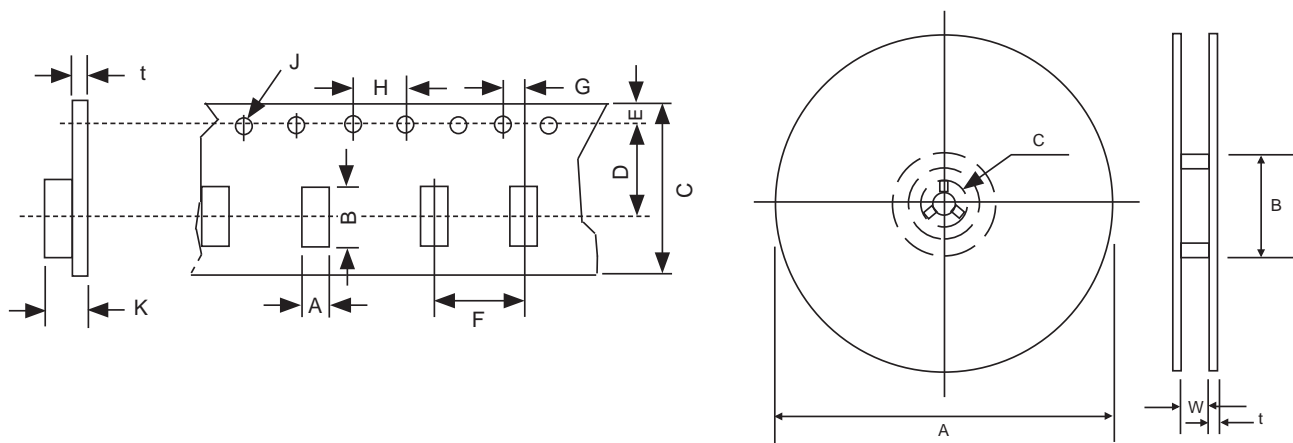
REEL TAPE DIMENSIONS (mm)

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	500*
D7, D8						2,000	

*See part number system for details on designating reel quantity

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
D6											2.1
D7											2.9
D8											3.1



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

