

NSPR Series

Surface Mount Solid Polymer Electrolytic Capacitors



FEATURES

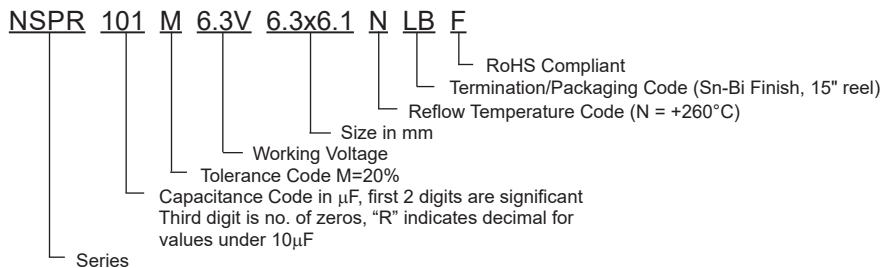
- CYLINDRICAL V-CHIP AND LOW PROFILE
- ULTRA LOW ESR AT HIGH FREQUENCY
- HIGH PERMISSIBLE RIPPLE CURRENT
- 5,000 HOUR LOAD LIFE @ +105°C
- NO DRY OUT INSURES EXTREMELY LONG LIFE



CHARACTERISTICS

Rated Voltage Rating	6.3 ~ 35Vdc					
Rated Capacitance Range	47 ~ 1,000μF					
Operating Temp. Range	-55 ~ +105°C					
Capacitance Tolerance	±20% (M)					
Max. Leakage Current After 2 Minutes @ 20°C	See Specifications Tables					
Voltage Ratings	W.V. (Vdc)	6.3	10	16	25	35
	S.V. (Vdc)	7.2	11.5	18.4	27.5	38.5
Load Life Test @ 105°C All Case Sizes = 5,000 hours	Capacitance Change	Within ±20% of initial measured value				
	Tan δ	Less than ±150% of the specified maximum value				
	ESR	Less than ±150% of the specified maximum value				
	Leakage Current	Less than the specified maximum value				
Moisture Resistance stored at 60°C, 90°C95%RH after 1,000 hours	Capacitance Change	Within ±20% of initial measured value				
	ESR	Less than ±150% of the specified maximum value				
	Tan δ	Less than ±150% of the specified maximum value				
	Leakage Current	Less than the specified maximum value				

PART NUMBER SYSTEM



PEAK REFLOW TEMPERATURE CODES

Code	Peak Reflow Temperature
N	260°C
L	250°C
J	240°C

TERMINATION FINISH & PACKAGING OPTIONS CODES

Code	Finish & Reel Size
LB	Sn-Bi Finish & 15" Reel

PRECAUTIONS

Please review the notes on correct use, safety and precautions found at <https://www.niccomp.com/resource/files/aluminum/AlumApplInfoCautions.pdf>
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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STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

NIC Part Number	Cap. (μF)	W.V. (Vdc)	Dissipation Factor (Tan δ)	Max. Ripple Current (mA) +105°C/100KHz	Max. LC (μA after 2 min.)	Maximum ESR (Ω) +20°C/100KHz	Load Life Hours @ +105°C
NSPR101M6.3V6.3X6.1NLBF	100	6.3	0.08	2300	280	32	5,000
NSPR221M6.3V6.3X6.1NLBF	220		0.08	2300	340	32	5,000
NSPR221M6.3V6.3X6.1NLBTF*1	220		0.08	2800	410	20	5,000
NSPR271M6.3V6.3X8NLBF	270		0.08	3000	448	22	5,000
NSPR681M6.3V8X8NLBF	680		0.08	3700	857	22	5,000
NSPR102M6.3V10X10.8NLBF	1000		0.08	4700	656	15	5,000
NSPR560M10V6.3X6.1NLBF	56	10	0.08	2300	960	32	5,000
NSPR121M10V6.3X8NLBF	120		0.08	2900	1200	22	5,000
NSPR151M10V6.3X8NLBF	150		0.08	2900	1440	22	5,000
NSPR181M10V6.3X8NLBF	180		0.08	2900	1760	22	5,000
NSPR470M16V6.3X6.1LLBF	47	16	0.10	1700	272	48	5,000
NSPR820M16V6.3X8LLBF	82		0.10	2400	340	28	5,000
NSPR101M16V6.3X8LLBF	100		0.10	2400	416	28	5,000
NSPR121M16V6.3X8LLBF	120		0.12	2400	491	28	5,000
NSPR121M16V8X8LLBF	120		0.12	3000	592	28	5,000
NSPR101M25V6.3X6.1LLBF	100	25	0.12	2000	600	40	5,000
NSPR821M25V10X16.8LLBF	820		0.12	5000	4100	20	5,000
NSPR121M35V10X12.7JLBF	120	35	0.12	3100	840	30	5,000

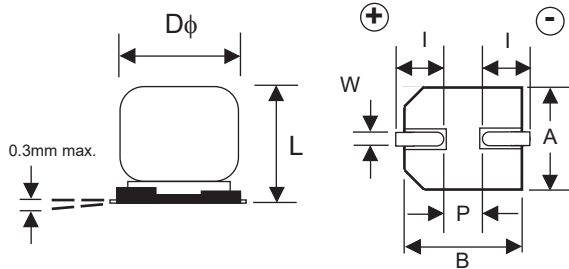
*1: NSPR221M6.3V6.3X6.1NLBTF is the higher ripple current part number.

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

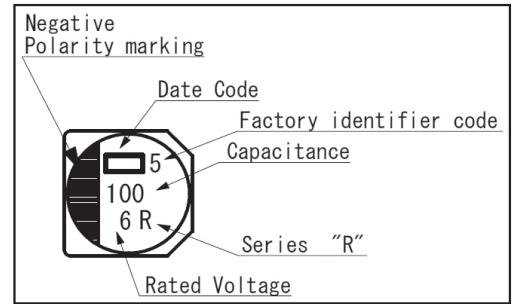
Frequency (Hz)			
120 ≤ f < 1K	1K ≤ f < 10K	10K ≤ f < 100K	100K ≤ f < 300K
0.05	0.3	0.7	1.0

CASE DIMENSIONS (mm)

Case Size	φD±0.5	L max.	A±0.2	B±0.2	I ref.	W	P ref.
6.3X6.1	6.3	6.1	6.6	6.6	2.5	0.5~0.8	2.2
6.3X8	6.3	8.0	6.6	6.6	2.5	0.5~0.8	2.2
8X8	8.0	8.0	8.3	8.3	2.9	0.7~1.1	3.1
10X10.8	10	10.8	10.3	10.3	3.2	0.7~1.1	4.5
10X12.7	10	12.7	10.3	10.3	3.2	0.7~1.1	4.5
10X16.8	10	16.8	10.3	10.3	3.2	0.7~1.1	4.5



Marking



Marking Color: Blue

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REFLOW CONDITIONS FOR 6.3V ~ 10V PARTS

Peak	Time above 200°C (t)	Time above 217°C (t1)	Time above 230°C (t2)	Number of Reflow Passes
Less than +260°C	90 sec. max.	60 ~ 150 sec. max.	60 sec. max.	1
Less than +250°C	90 sec. max.	60 ~ 150 sec. max.	60 sec. max.	2

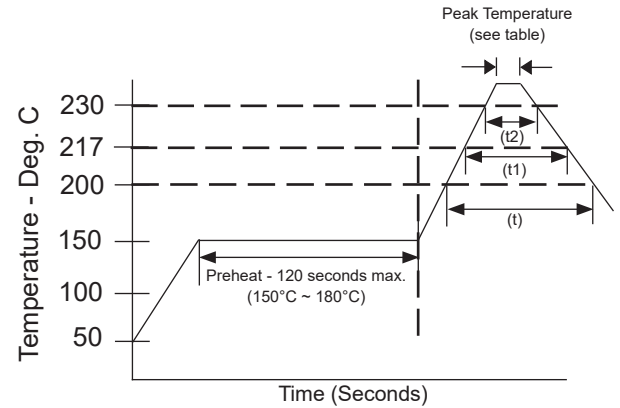
REFLOW CONDITIONS FOR 16V ~ 25V

Peak	Time above 200°C (t)	Time above 217°C (t1)	Time above 230°C (t2)	Number of Reflow Passes
Less than +250°C	90 sec. max.	60 ~ 150 sec. max.	60 sec. max.	1
Less than +240°C	80 sec. max.	60 ~ 150 sec. max.	50 sec. max.	2

REFLOW CONDITIONS FOR 35V

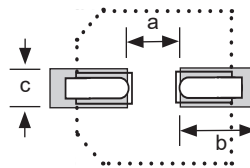
Peak	Time above 200°C (t)	Time above 217°C (t1)	Time above 230°C (t2)	Number of Reflow Passes
Less than +240°C	70 sec. max.	60 ~ 150 sec. max.	30 sec. max.	1

Capacitor can withstand two reflow processes on the above condition. Second reflow shall be taken after more than one hour natural cooling time and taken after the return to normal temperatures of PCB and components.



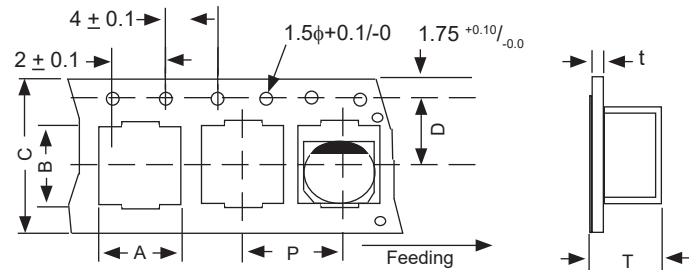
RECOMMENDED LAND PATTERN DIMENSIONS (mm)

Case Size	a	b	c
6.3φ	2.1	3.5	1.6
8φ	2.8	4.2	1.9
10φ	4.3	4.4	1.9



CARRIER TAPE DIMENSIONS & REEL QTY

Case Size	A ±0.2	B ±0.2	C ref.	D ±0.1	P ±0.1	T ±0.2	t ±0.05
6.3X6.1	7.0	7.0	16.0	7.5	12.0	6.2	0.4
6.3X8	7.0	7.0	16.0	7.5	12.0	8.1	0.4
8X8	8.7	8.7	16.0	7.5	12.0	8.2	0.4
10X10.8	10.7	10.7	24.0	11.5	16.0	11.0	0.4
10X12.7	10.7	10.7	24.0	11.5	16.0	12.9	0.4
10X16.8	10.7	10.7	24.0	11.5	16.0	17.5	0.5



V-Chip 15" (380mm) Reels (LB suffix)

Dimensions (mm)

Case Size	Tape Width	Quantity per Reel TR15 380mm
6.3X6.1	18	1000
6.3X8	18	900
8X8	18	700
10X10.8	26	500
10X12.7	26	400
10X16.8	26	325

