

### NV SERIES ■ BI-POLAR 85°C TYPE

#### KEY FEATURES

- ALUMINUM ELECTROLYTIC CAPACITOR ■ SMD type
- Endurance: 85°C ■ 2 000 hours
- Bi-Polar, Non-polarized type
- Small dimensions
- Ideal for high density mounting



#### SPECIFICATIONS

Items		Performance Characteristics						
Operating Temperature Range		-40 ~ +85°C						
Rated Voltage Range	$V_R$	6.3 ~ 50V DC						
Surge Voltage	$V_S$	$V_S = 1.15 \cdot V_R$						
Capacitance Range	$C_R$	0.1 ~ 560 $\mu$ F						
Cap. Tolerance	$\Delta C$	$\pm 20\%$ (120Hz ■ 20°C)						
Leakage Current (20°C ■ $V_R$ applied)	$I_{LEAK}$	$\leq 0.05 \cdot C_R \cdot V_R$ or 10 $\mu$ A, whichever is greater ■ After 2 minutes [ $I_{LEAK}$ ( $\mu$ A) ; $C_R$ ( $\mu$ F) ; $V_R$ (V) ]						
Dissipation Factor % (20°C ■ 120Hz)	$\tan\delta$	$V_R$ (V DC)	6.3	10	16	25	35	50
		$\tan\delta$ (%)	24	20	17	17	15	15
Low Temperature Characteristics at 120Hz	Z ratio max.	$V_R$ (V DC)	6.3	10	16	25	35	50
		Z-25°C/Z+20°C	4	3	2	2	2	2
		Z-40°C/Z+20°C	8	6	4	3	3	3
Lifetime Test								
Endurance 85°C ( $V_R$ applied)	Test	<b>2 000 hours</b>						
	$\Delta C/C_R$	$\leq \pm 25\%$ of initial measured value						
	$\tan\delta$	$\leq 200\%$ of initial specified value						
	$I_{Leak}$	$\leq$ the initial specified value						
Shelf Life 85°C ( $V_R = 0$ )	Test	<b>1 000 hours</b>						
	$\Delta C/C_R$	$\leq \pm 25\%$ of initial measured value						
	$\tan\delta$	$\leq 200\%$ of initial specified value						
	$I_{Leak}$	$\leq$ the initial specified value						
		Before measurement: Restore capacitor to 20°C, apply $V_R$ for 30 min according JIS-C-5101-4						
Resistance to Soldering Heat	The capacitors shall be kept on a hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the characteristic requirements listed below							
	$\Delta C/C_R$	Within $\pm 10\%$ of initial value						
	$\tan\delta$	Less than specified value						
	$I_{Leak}$	Less than specified value						

**STANDARD RATINGS**

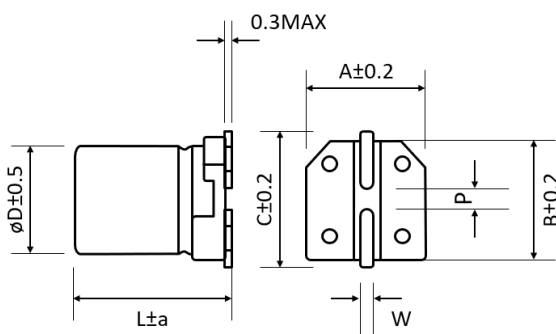
Part number shows blister tape on paper reel

$V_R$ (V)	$C_R$ ( $\mu F$ )	$\phi D$ (mm)	L (mm)	$I_R$ - Max. Ripple Current +85°C - 120Hz (mA rms)	CapXon Part Number
6.3	10	4	5.5	15	NV100M6R3B055ETR
	22	4	5.5	28	NV220M6R3B055ETR
	22	5	5.5	32	NV220M6R3C055ETR
	33	5	5.5	37	NV330M6R3C055ETR
	47	6.3	5.5	45	NV470M6R3E055ETR
	100	6.3	7.7	65	NV101M6R3E077ETR
	100	8	6.5	70	NV101M6R3F065ETR
	220	8	10.5	120	NV221M6R3F105ETR
	330	8	10.5	160	NV331M6R3F105ETR
	470	10	10.5	190	NV471M6R3G105ETR
560	10	10.5	220	NV561M6R3G105ETR	
10	10	4	5.5	17	NV100M010B055ETR
	22	5	5.5	33	NV220M010C055ETR
	22	6.3	5.5	37	NV220M010E055ETR
	33	6.3	5.5	41	NV330M010E055ETR
	47	6.3	5.5	50	NV470M010E055ETR
	100	6.3	7.7	75	NV101M010E077ETR
	100	8	6.5	80	NV101M010F065ETR
	220	8	10.5	150	NV221M010F105ETR
	330	10	10.5	180	NV331M010G105ETR
	16	3.3	4	5.5	12
4.7		4	5.5	12	NV4R7M016B055ETR
10		4	5.5	23	NV100M016B055ETR
10		5	5.5	23	NV100M016C055ETR
22		5	5.5	37	NV220M016C055ETR
22		6.3	5.5	37	NV220M016E055ETR
33		6.3	5.5	49	NV330M016E055ETR
47		6.3	7.7	51	NV470M016E077ETR
47		8	6.5	55	NV470M016F065ETR
100		8	10.5	100	NV101M016F105ETR
220	10	10.5	170	NV221M016G105ETR	
25	3.3	4	5.5	12	NV3R3M025B055ETR
	3.3	5	5.5	12	NV3R3M025C055ETR
	4.7	4	5.5	16	NV4R7M025B055ETR
	4.7	5	5.5	16	NV4R7M025C055ETR
	10	5	5.5	27	NV100M025C055ETR
	10	6.3	5.5	27	NV100M025E055ETR
	22	6.3	5.5	40	NV220M025E055ETR
	33	6.3	7.7	51	NV330M025E077ETR
	33	8	6.5	55	NV330M025F065ETR
	47	6.3	7.7	56	NV470M025E077ETR
	47	8	6.5	60	NV470M025F065ETR
	100	8	10.5	130	NV101M025F105ETR

**STANDARD RATINGS**

Part number shows blister tape on paper reel

$V_R$ (V)	$C_R$ ( $\mu F$ )	$\phi D$ (mm)	L (mm)	$I_R$ - Max. Ripple Current +85°C - 120Hz (mA rms)	CapXon Part Number
35	2.2	4	5.5	8.4	NV2R2M035B055ETR
	3.3	4	5.5	16	NV3R3M035B055ETR
	3.3	5	5.5	16	NV3R3M035C055ETR
	4.7	4	5.5	18	NV4R7M035B055ETR
	4.7	5	5.5	18	NV4R7M035C055ETR
	10	6.3	5.5	29	NV100M035E055ETR
	22	6.3	5.5	45	NV220M035E055ETR
	33	8	10.5	58	NV330M035F105ETR
50	47	8	10.5	64	NV470M035F105ETR
	0.1	4	5.5	1	NV0R1M050B055ETR
	0.22	4	5.5	2	NVR22M050B055ETR
	0.33	4	5.5	2.8	NVR33M050B055ETR
	0.47	4	5.5	4	NVR47M050B055ETR
	1	4	5.5	8.4	NV010M050B055ETR
	2.2	4	5.5	13	NV2R2M050B055ETR
	2.2	5	5.5	13	NV2R2M050C055ETR
	3.3	4	5.5	17	NV3R3M050B055ETR
	3.3	5	5.5	17	NV3R3M050C055ETR
	4.7	5	5.5	20	NV4R7M050C055ETR
	4.7	6.3	5.5	20	NV4R7M050E055ETR
	10	6.3	5.5	32	NV100M050E055ETR
	22	8	10.5	60	NV220M050F105ETR
	33	10	10.5	75	NV330M050G105ETR
	47	10	10.5	100	NV470M050G105ETR

**DIMENSIONS STANDARD PACKAGE - All dimensions in mm**






$\phi D$	L	a	A	B	C	W	$P \pm 0.2$
4	5.5	Max	4.3	4.3	4.9	0.5 to 0.8	1
5	5.5	Max	5.3	5.3	5.9	0.5 to 0.8	1.4
6.3	5.5	0.2	6.6	6.6	7.2	0.5 to 0.8	2.2
6.3	7.7	Max	6.6	6.6	7.2	0.5 to 0.8	2.2
8	6.5	Max	8.3	8.3	9	0.5 to 0.8	2.3
8	10.5	Max	8.3	8.3	9	0.7 to 1.1	3.1
10	10.5	Max	10.3	10.3	11	0.7 to 1.1	4.5

**MULTIPLIER  $K_f$  for RIPPLE CURRENT vs. FREQUENCY**

$C_R$ ( $\mu F$ ) / Frequency (Hz)	50/60	100/120	500	1k	$\geq 10k$
$0.1 \leq C_R \leq 560$	0.8	1	1.2	1.3	1.5

**PRECAUTIONS, GUIDELINES AND PACKAGING INFORMATION**

Unless otherwise agreed in individual specifications, all products are subject to our “General Precautions and Guidelines” as well as our “Packaging Information”. Please refer to the following links in the table.

			
<p><a href="#">General Precautions &amp; Guidelines</a></p>	<p><a href="#">Packaging Information</a></p>	<p><a href="#">Vibration Test Profiles</a></p>	<p><a href="#">3D Models</a></p>

**DISCLAIMER**

All product related data (e.g. specification, statements and general information) are subject to change without any notice. It is necessary that the customer observes all product related technical / application information and handling instructions.

CapXon products are designed and manufactured according to severe quality and safety standards. Under no circumstance, CapXon warrants that any CapXon product is suitable for the purposes intended for your application, even CapXon knows the application. It is customer's duty and obligation to check and make sure that CapXon products are suitable for the purposes intended and select the correct and proper CapXon product. Customers are requested to perform a sufficient validation and reliability evaluation to assure needed safety level and reliability performance by suitable designs and to apply proper safeguards (e.g. redundancies, protective circuits).

Particular operating conditions (ambient temperature, ripple current, voltage, thermal resistance, etc.) as well as storage, production or assembly may affect the performance and the lifetime of the capacitor. Please consult CapXon for lifetime estimation, failure mode considerations or worst-case scenarios according to the product technology, product tolerances / deviations or change of the characteristics of the capacitor due to shipment, storage, handling, production and usage.

For aerospace or military application, life-saving, life-sustaining, safety critical applications or any application where failure may cause severe personal injury or death, please consult us before design-in the capacitor in your application.

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