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**Electrolytic Capacitors - Voltage Derating**

**1.) Solid Polymer Aluminum Electrolytic Capacitors**

NIC Series: *NPC & NSP series*

Voltage Derating: **NO** voltage derating

➔ The sum of DC voltage and peak value of ripple voltage shall not exceed the rated working voltage of the capacitor or result in reverse bias operation

**VOLTAGE DE-RATING:**

- Voltage de-rating is **not required** for this product
- Solid polymer aluminum electrolytic capacitors can safely be used, to rated voltage, over operating temperature range

NIC Series	Operating temperature range
<b>NPC, NSP, NSPL, NSPX</b>	-55°C ~ +105°C

**2. Polymer Cathode Tantalum Electrolytic Capacitors**

NIC Series: *See below tables*

Voltage Derating: Suggested the operating voltage (VDC) be derated to 80% ~ 90% of rated voltage *based upon product series and voltage ratings (see below tables)*

***NTP Series/ \* recommended derating is 80% of the rated voltage***

Rated Voltage @ +85°C	2.5VDC	4VDC	6.3VDC	10VDC	16VDC	20VDC	25VDC
<b>Derated Voltage</b> <i>Suggested maximum operating voltage</i>	2VDC	3.2VDC	5VDC	8VDC	12.8VDC	16VDC	20VDC

***NTPF Series / \* Parts with rated voltage 10VDC recommended derating is 80% of the rated voltage. For parts with rated voltage <10VDC recommended derating is 90% of the rated voltage***

Rated Voltage @ +105°C	4VDC	6.3VDC	10VDC
<b>Derated Voltage</b> <i>Suggested maximum operating voltage</i>	3.6VDC	5.67VDC	8VDC

***NTPG Series / \* Parts with rated voltage ≤8VDC recommended derating is 90% of the rated voltage. For parts with rated voltage >8VDC recommended derating is 80% of the rated voltage.***

Rated Voltage @ +85°C	2.5VDC	4VDC	6.3VDC	8VDC	10VDC	12.5VDC
<b>Derated Voltage</b> <i>Suggested maximum operating voltage</i>	2.25VDC	3.6VDC	5.67VDC	7.2VDC	8VDC	10VDC

## 2. Polymer Cathode Tantalum Electrolytic Capacitors (continued)

**NTPH Series / \* Recommended derating is 90% of the rated voltage**

<b>Rated Voltage @ +105°C</b>	16VDC	20VDC	25VDC	35VDC
<b>Derated Voltage</b> <i>Suggested maximum operating voltage</i>	14.4VDC	18VDC	22.5VDC	31.5VDC

**NTPL Series / \* Parts with rated voltage ≤8VDC recommended derating is 90% of the rated voltage.  
For parts with rated voltage >8VDC recommended derating is 80% of the rated voltage.**

<b>Rated Voltage @ +85°C</b>	2.5VDC	4VDC	6.3VDC	10VDC
<b>Derated Voltage</b> <i>Suggested maximum operating voltage</i>	2.25VDC	3.6VDC	5.67VDC	8VDC

**NTPS Series / \* Parts with rated voltage ≤8VDC recommended derating is 90% of the rated voltage.  
For parts with rated voltage 10VDC recommended derating is 80% of the rated voltage.**

<b>Rated Voltage @ +85°C</b>	2VDC	2.5VDC	4VDC	6.3VDC	8VDC	10VDC
<b>Derated Voltage</b> <i>Suggested maximum operating voltage</i>	1.8VDC	2.25VDC	3.6VDC	5.67VDC	7.2VDC	8VDC

➔ The sum of DC voltage and peak value of ripple voltage shall not exceed the rated working voltage of the capacitor or result in reverse bias operation