Series AMLDV-NZ

Up to 700mA | LED Driver

FEATURES:

- High Power LED Driver
- Ultra Wide Input Voltage Range
- Remote ON/OFF Function
- SMD Package
- Constant Current Output mode
- High Efficiency (Up to 96%)
- PWM & Analogue Dimming Function
- Operating Temperature range -40ºC - +85ºC

Models

Single output

RoHS

Model	Input Voltage (V)	Output Voltage (V)	Output Current (mA)	Efficiency Max (%)
AMLDV-4830-NZ	5.5-48	3.3-36	300	96
AMLDV-4835-NZ	5.5-48	3.3-36	350	96
AMLDV-4850-NZ	5.5-48	3.3-36	500	96
AMLDV-4860-NZ	5.5-48	3.3-36	600	96
AMLDV-4870-NZ	5.5-48	3.3-36	700	96

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	24	5.5-48		VDC
Absolute Maximum Rating(≤10sec)		5-55		VDC
On/Off Control (Analog Control) (Leave open if not used)		ON: Open or 2.8V> V <6V		
		OFF: V <0.6V		
Remote pin current	V=5V		1	mA
Quiescent input current in Shutdown mode	Vin=24V, V<0.6V		400	μA
Dimming Control (Digital Control)		Max PWM Frequency: 200Hz		
Dimming Control (Analog Control) (Leave open if not used)	Input Voltage Range (Vin=5.5-48V) Output Current Range(Vin=5.5-48V)		0-15V 0-100%	
	Control Voltage Range(Full ON) Control Voltage Range(Full OFF)		0.2V±50mV 4.5V±50mV	
	Driving Current(V=5V)		0.2mA(max)	
Input Filter		Capacitor		

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Current accuracy		±2	±3	%
Short Circuit protection		Continuous, Automatic Recovery		
Efficiency	At full load		96	%
Max load capacitance			1000	μF
Ripple & Noise	20MHz Bandwidth	120		mV p-p
Temperature coefficient	-40 °C to+71 °C	±0.015		%/oC
Output Current Stability	Vin=48V, Vo=3.3~36V		±1	%
Internal Power Dissipation	Vin=24V,5LEDS		700	mW

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	370	320-420	KHz
Operating temperature	300mA,350mA	-40 to +85		°C
	500mA,600mA,700mA	-40 to+71		°C
Storage temperature	-55 to +125			°C
Max Case temperature			100	°C
Cooling	Free Air Convection			
Humidity			95	% RH

General Specifications (continued)

Parameters	Conditions	Typical	Maximum	Units
Case material	Plastic UL94-VO			
Potting material	Epoxy Resin(Flammability UL94V-0)			
Weight		6		g
Dimensions (L x W x H)	0.939 × 0.713 × 0.315 inches		23.86 × 18.10 × 8.00 mm	
MTBF	>2 000 000 hrs (MIL-HDBK-217 F at +25 °C)			

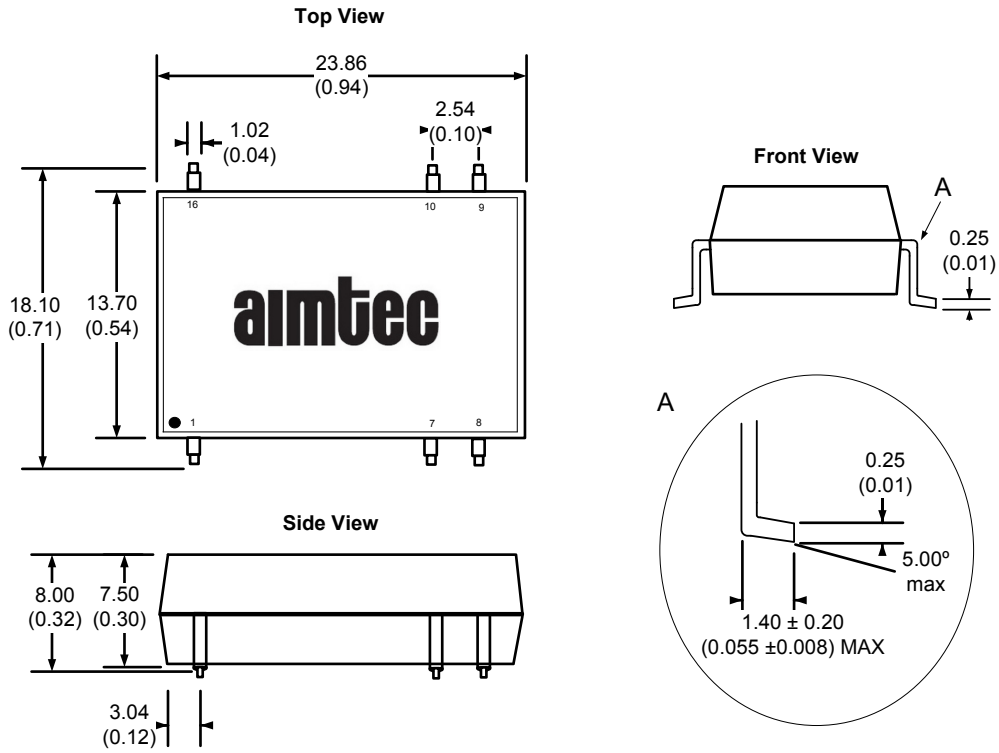
Safety Specifications

Parameters	
Standards	Designed to meet: EN 55022, class B, IEC/EN 61000-4-2 (Perf. Criteria B), IEC/EN 61000-4-3 (Perf. Criteria B), IEC/EN 61000-4-4 (Perf. Criteria B), IEC/EN 61000-4-5 (Perf. Criteria B), IEC/EN 61000-4-5 (Perf. Criteria B)

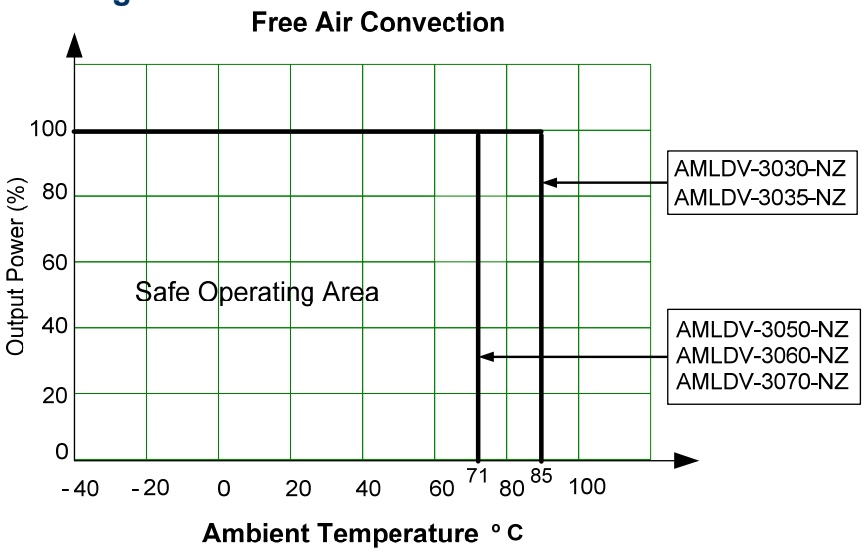
Pin Out Specifications

Pin	Single	
1	-V Input	DC Supply
7	Remote On/Off PWM Dimming	PWM/ON/OFF or not used
8	-V Output	LED Cathode connection
9	+V Output	LED Anode connection
10	Analogue Dimming	Analogue Dimming or not used
16	+V Input	+ DC Supply

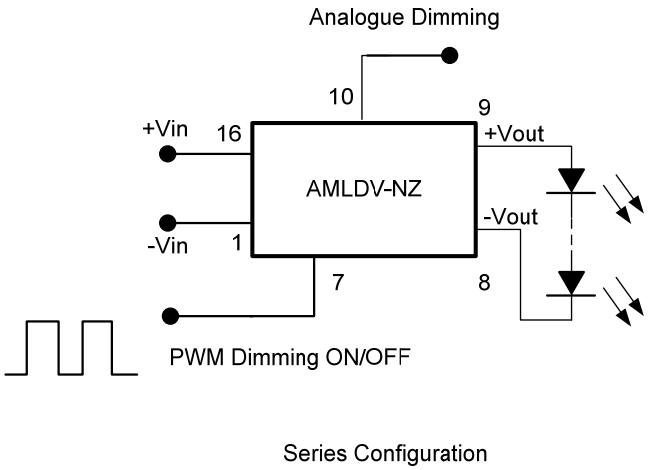
Dimensions



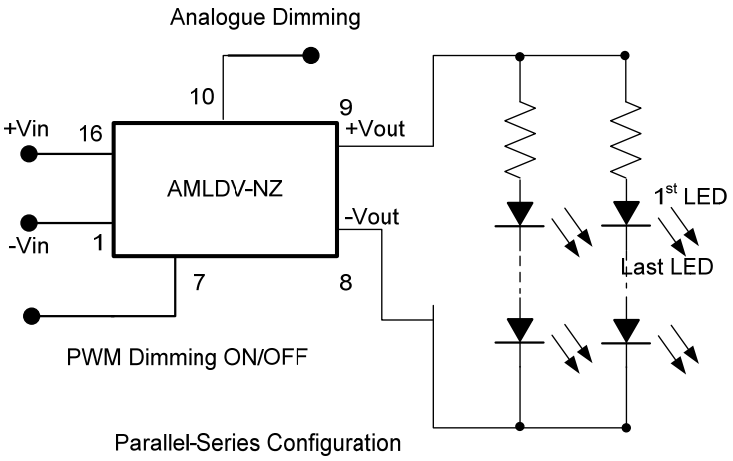
Derating



Typical Application Circuits



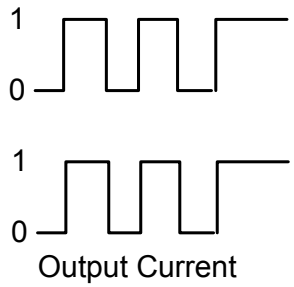
Series Configuration



Parallel-Series Configuration

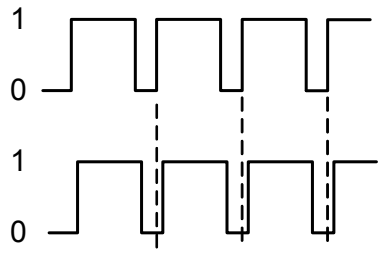
PWM Dimming Control

PWM Digital Control Signal



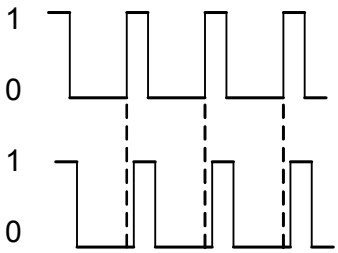
Output Current

PWM Digital Control Signal



Output Current LEDs appear Dim

PWM Digital Control Signal



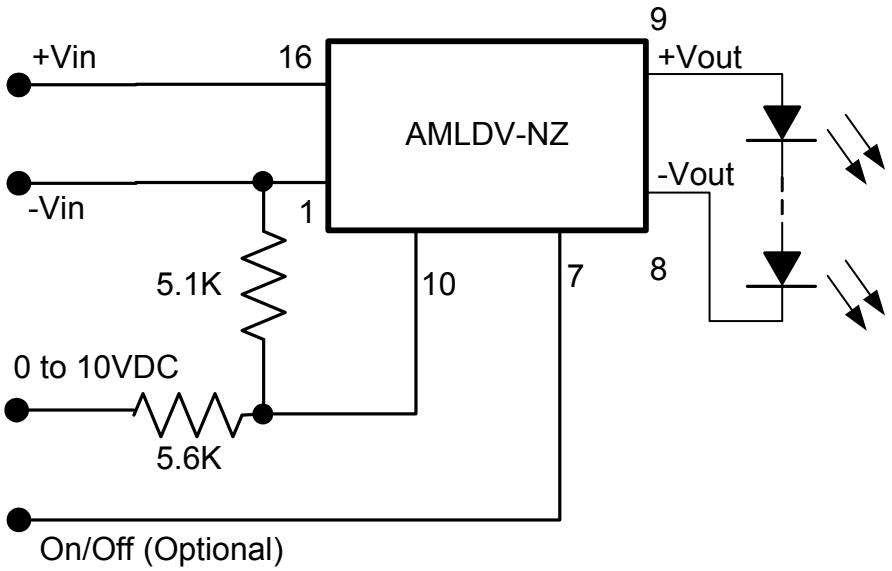
Output Current LEDs appear bright

$$Iout\_Set = \left[\frac{(DT-0.6)}{T} \right] Iout\_Nominal$$

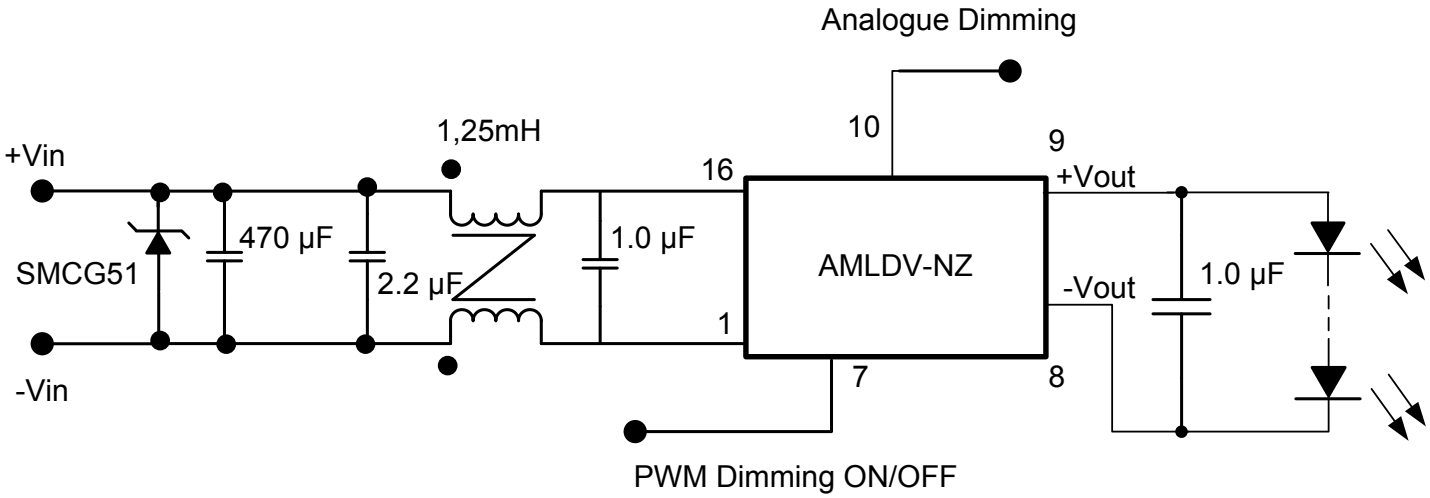
Where: D is pulse width
T is cycle of the pulse

NOTE: Formula is for reference; actual output current may depend on loading.
The Time On of pulse must be > 0.7mS

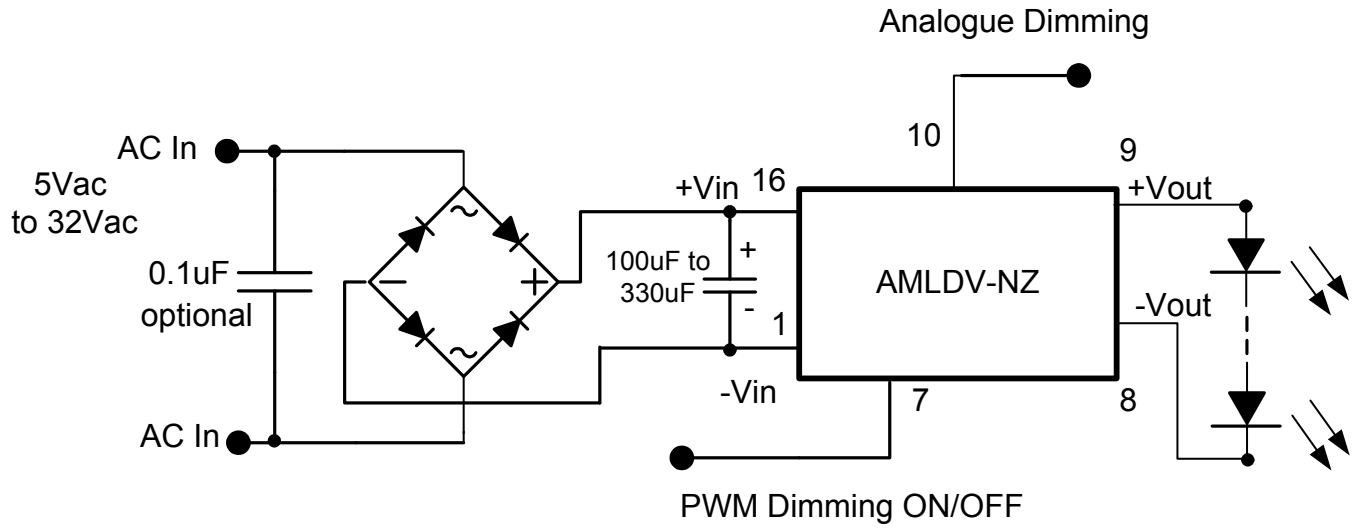
Analogue Dimming Control



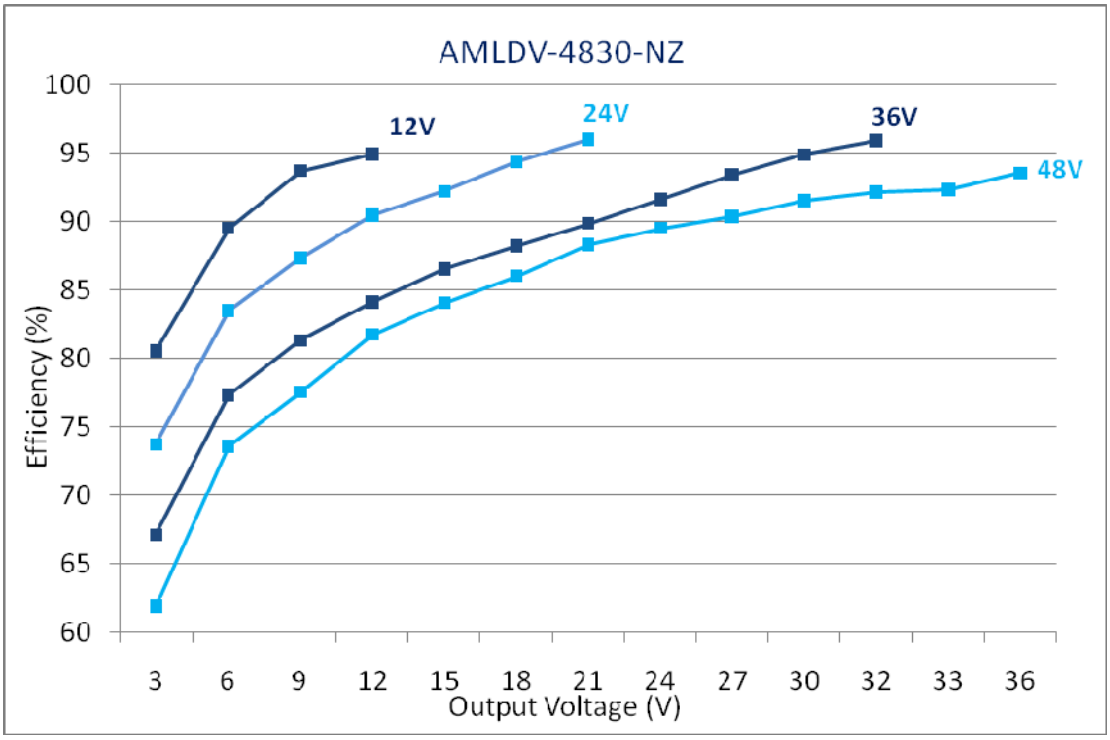
Recommended EMC Circuit

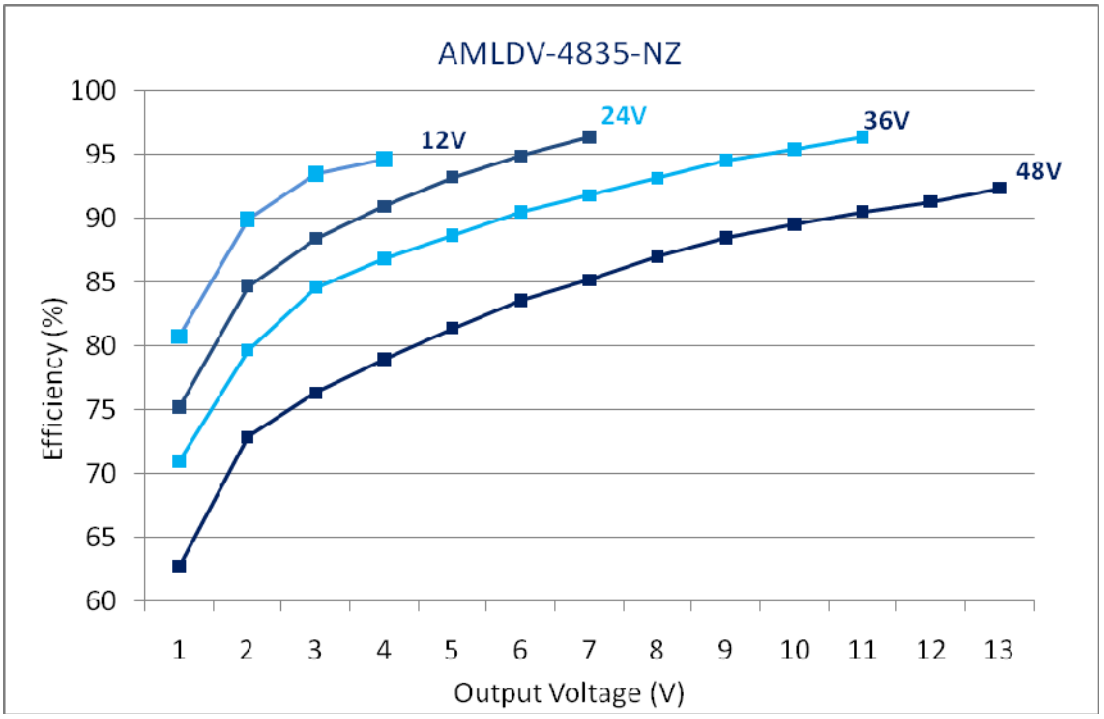


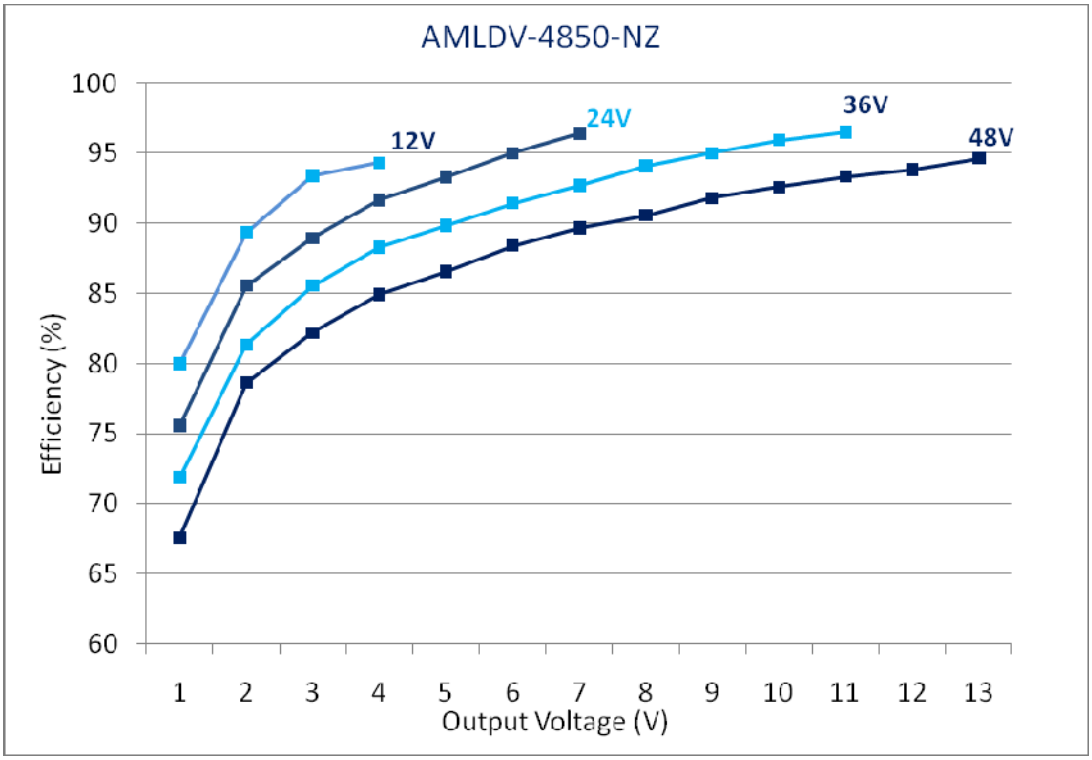
Recommended AC Input Circuit

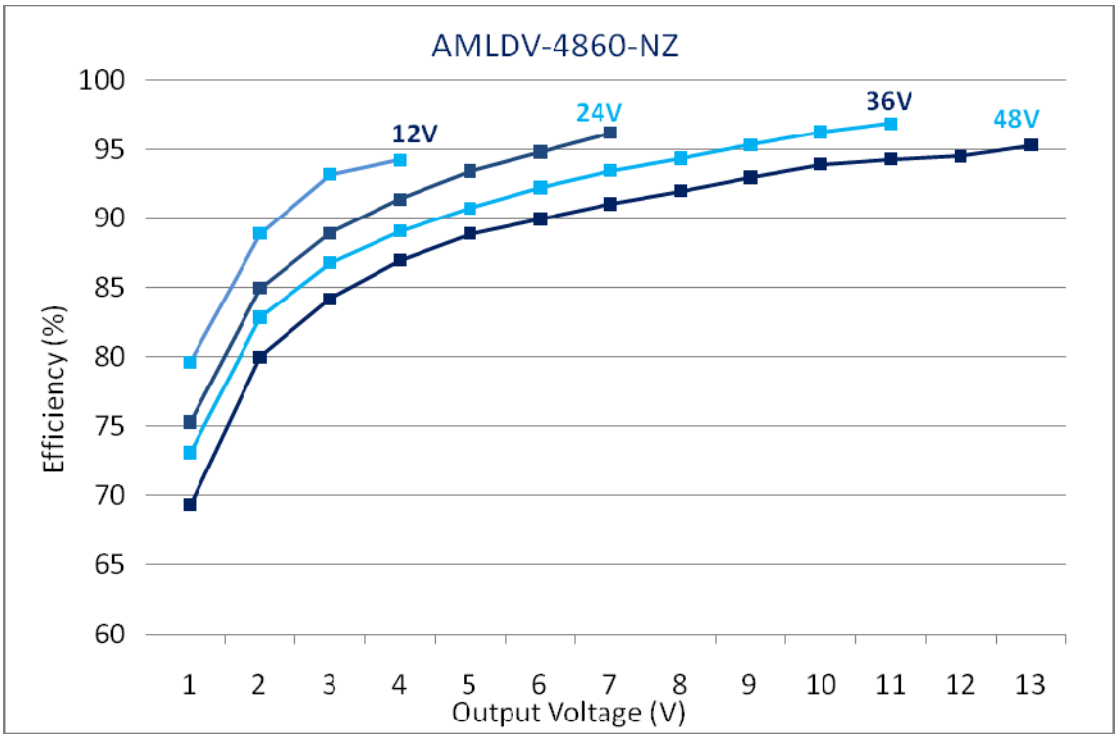


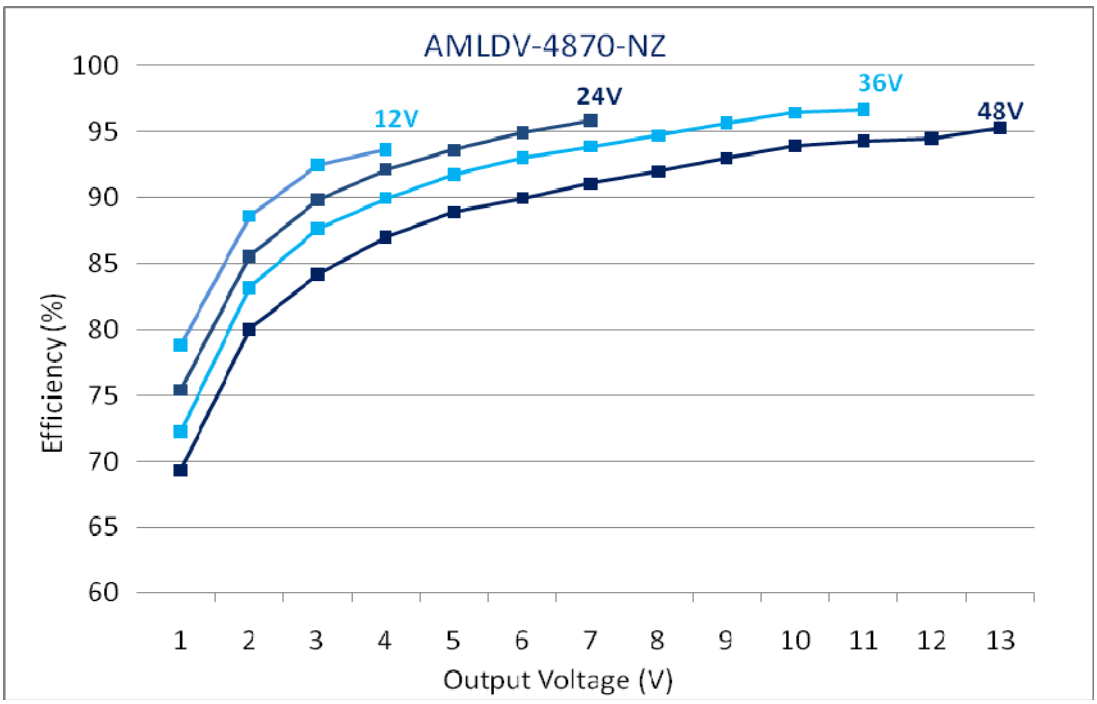
Efficiency versus Input Voltage



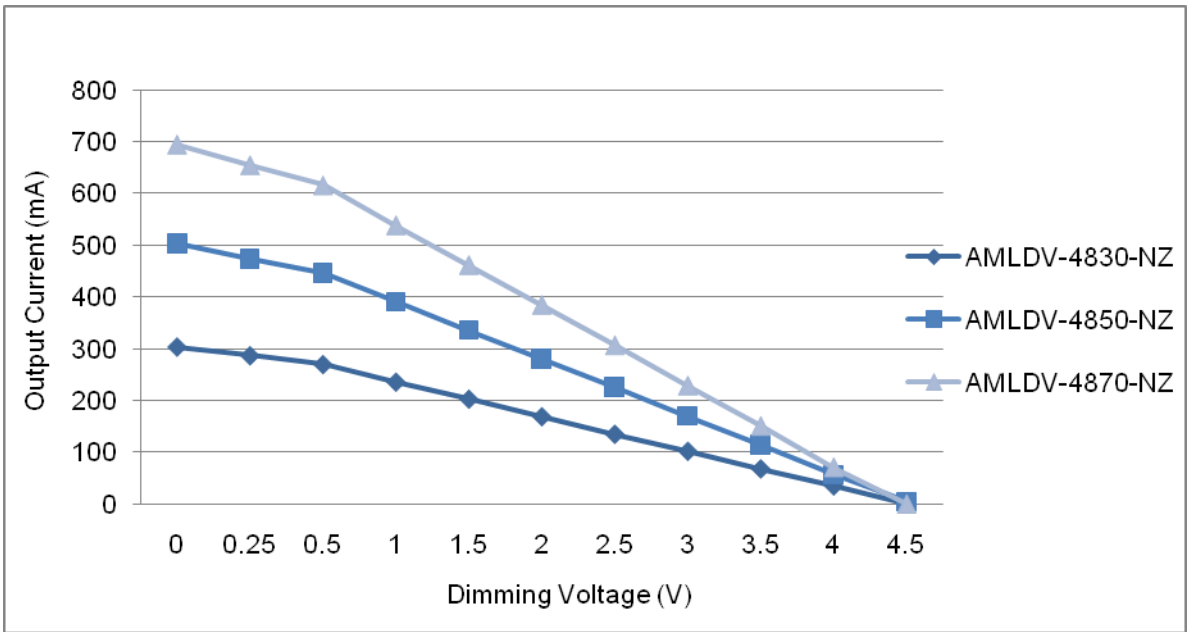



AMLDV-4850-NZ
100
95
90
85
80
75
70
65
60
Efficiency (%)
12V
24V
36V
48V
1
2
3
4
5
6
7
8
9
10
11
12
13
Output Voltage (V)


AMLDV-4860-NZ
100
95
90
85
80
75
70
65
60
Efficiency (%)
12V
24V
36V
48V
1
2
3
4
5
6
7
8
9
10
11
12
13
Output Voltage (V)



Output Current versus Dimming Voltage



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