DC-DC Step-Up Constant Current LED driver

LDH-45 series

Features :

- DC/DC step-up converter
- Constant current output : 350mA to 1050mA
- Wide output LED string voltage up to 126VDC
- High efficiency up to 95%
- Built-in EMI filter,comply with EN55015 without additional input filter and capacitors
- PWM + analog dimming and remote ON/OFF control
- Protections: Short circuit / Over voltage / Under voltage
- Cooling by free air convection
- Fully encapsulated
- 3 years warranty

CE

LDH-45□-350○ □=A or B; A: 9~18VDC input range, B: 18~32VDC input range
○=Blank or W; Blank:pin style, W:wire style

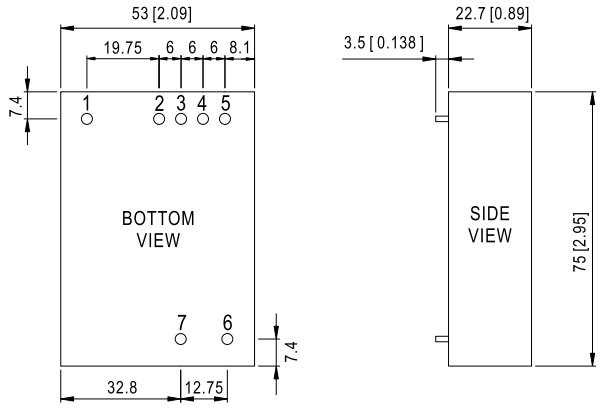
SPECIFICATION

MODEL		LDH-45A-350○	LDH-45A-500○	LDH-45A-700○	LDH-45A-1050○	LDH-45B-350○	LDH-45B-500○	LDH-45B-700○	LDH-45B-1050○
OUTPUT	RATED CURRENT	350mA	500mA	700mA	1050mA	350mA	500mA	700mA	1050mA
	CURRENT ACCURACY(Typ.)	±5% at 12VDC input				±5% at 24VDC input			
	VOLTAGE RANGE Note.3	12~86VDC	12~86VDC	12~64VDC	12~43VDC	21~126VDC	21~86VDC	21~64VDC	21~43VDC
	NO LOAD OUTPUT VOLTAGE(max.)	100V	100V	75V	50V	146V	100V	75V	50V
	RATED POWER	30.1W	43W	44.8W	45.15W	45.15W	43W	44.8W	45.15W
	RIPPLE & NOISE (max.) Note.2	2.5Vp-p	2.5Vp-p	1.9Vp-p	1.9Vp-p	2.5Vp-p	1.7Vp-p	1.2Vp-p	1.2Vp-p
INPUT	RATED VOLTAGE	12VDC				24VDC			
	VOLTAGE RANGE	9~18VDC				18~32VDC			
	EFFICIENCY (max.)	91%	90%	90%	91%	93%	94%	95%	95%
	DC CURRENT (Typ.)	2.8A	4.1A	4.2A	4.2A	2.1A	2.1A	2A	2A
PWM DIMMING & ON/OFF CONTROL	REMOTE ON/OFF	Leave open if not used							
		Power ON with dimming: PWM DIM~DIM- >2~8VDC or open circuit							
		Power OFF : PWM DIM~DIM- <0.5VDC or short or PWM duty is equal to 0%							
	PWM DIMMING FREQUENCY	1K~10KHz							
	QUIESCENT INPUT CURRENT IN SHUTDOWN MODE(Typ.)	7mA at PWM dimming OFF							
ANALOG DIMMING & ON/OFF CONTROL	REMOTE ON/OFF	Leave open if not used							
		Power on with dimming: Analog DIM~DIM- >0.25~8VDC or open circuit							
		Power off : Analog DIM~DIM- <0.2VDC or short							
	DIM INPUT VOLTAGE RANGE	0.25~1.3VDC							
	MAX OPERATION VOLTAGE	8V; The output current remains constant when voltage changes from 1.3V to 8V							
	QUIESCENT INPUT CURRENT IN SHUTDOWN MODE(Typ.)	7mA at Analog dimming OFF							
PROTECTION	SHORT CIRCUIT	Protection type : Power OFF and fuse open							
	OVER VOLTAGE (max.)	100V	100V	75V	50V	146V	100V	75V	50V
		Protection type : Constant output voltage and shut off o/p current, recovers automatically after fault condition is removed							
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes							
EMC	EMC EMISSION	Compliance to EN55015							
	EMC IMMUNITY	Compliance to EN61547,EN61000-4-2,3,4,6,8; light industry level, criteria A							
OTHERS	MTBF	1179.3Khrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	75*53*22.7mm (L*W*H)							
	PACKING	138g;100pcs/14.8Kg/0.83CUFT(Blank Type),1.04CUFT(W Type)							
NOTE	1. All parameters are specified at normal input(12VDC,24VDC), rated load, 25℃ 70% RH ambient. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf parallel capacitor. 3. Output voltage will always step up by 3 Volts from input DC voltage.								

■ Mechanical Specification

Unit: mm (inch)

LDH (Pin Style):

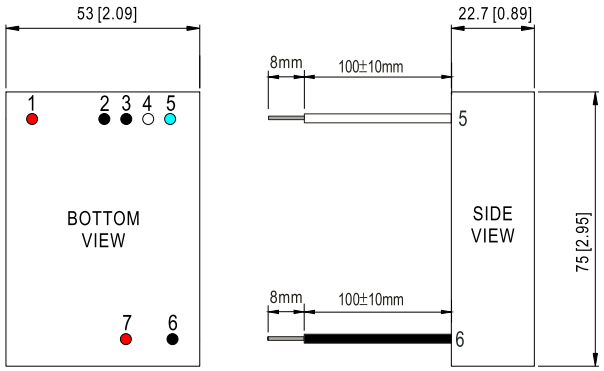


NOTE:Pin size tolerance 1.0 ϕ ±0.05mm

■ Pin Configuration

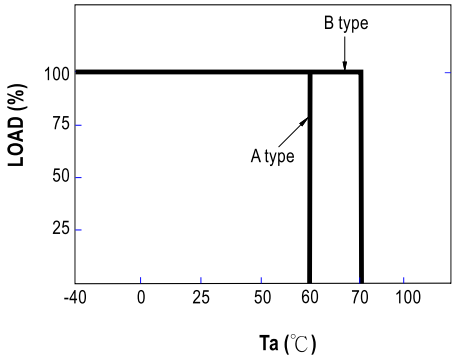
Pin No.	Output	Description
1	Vin+	DC Supply
2	Vin-	Don't connect to Vout-
3	DIM-	GND of DIM signal Don't connect to Vout- or Vin-
4	Analog DIM	ON/OFF and analog voltage dimming (leave open if not used)
5	PWM DIM	ON/OFF and PWM dimming (leave open if not used)
6	Vout-	LED - connection
7	Vout+	LED + connection

LDH (Wire Style):

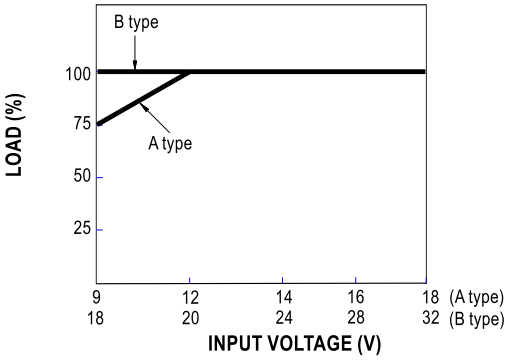


Pin No.	Output	Description
1	Vin+(red)	DC Supply
2	Vin-(black)	Don't connect to Vout-
3	DIM-(black)	GND of DIM signal Don't connect to Vout- or Vin-
4	Analog DIM (white)	ON/OFF and analog voltage dimming (leave open if not used)
5	PWM DIM (blue)	ON/OFF and PWM dimming (leave open if not used)
6	Vout-(black)	LED - connection
7	Vout+(red)	LED + connection

■ Derating Curve



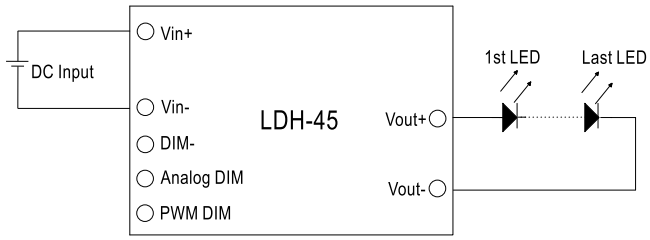
■ Static Characteristics



■ Standard Application

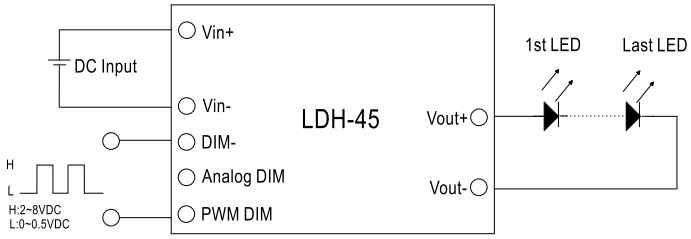
Operation without dimming:

Io operates at rated current without dimming function when the pins of analog DIM and PWM DIM keep open

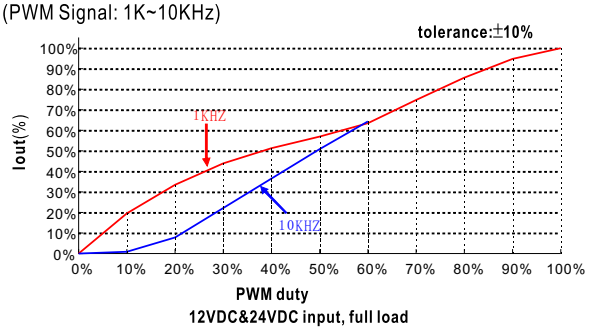


PWM Dimming Control:

Io adjustment by PWM Signal

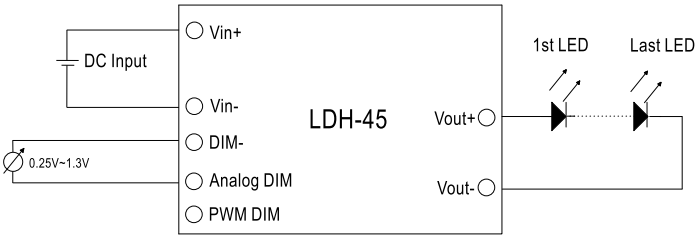


During PWM dimming operation, Io will change with the PWM duty (PWM Signal: 1K~10KHz)

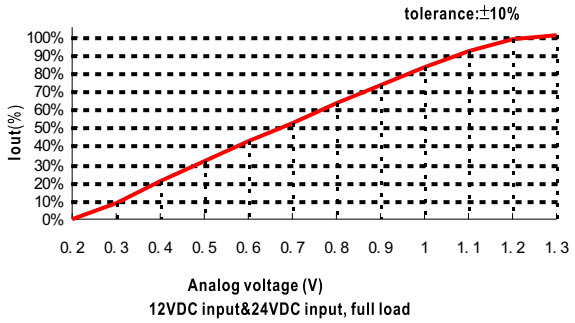


Analog Dimming Control:

Io adjustment by DC voltage

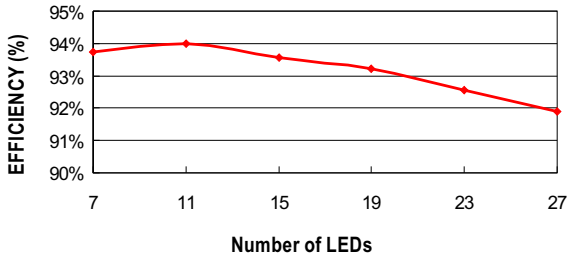


During analog dimming operation, Io will change with DC input voltage

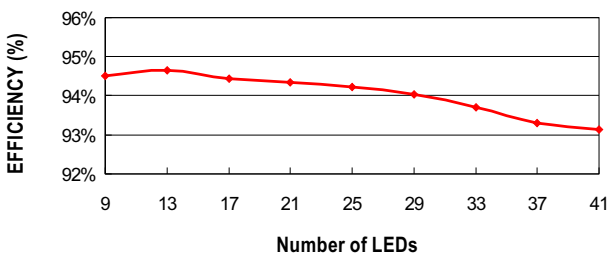


■ Efficiency VS Output Voltage(Number of LEDs)

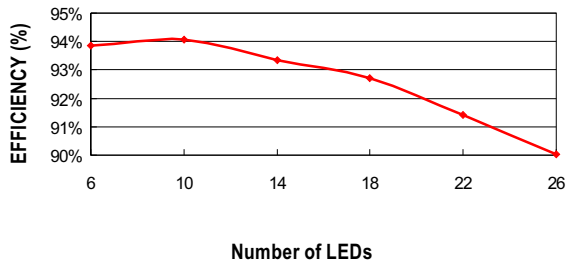
LDH-45A-350 12VDC input Vf=3.15V



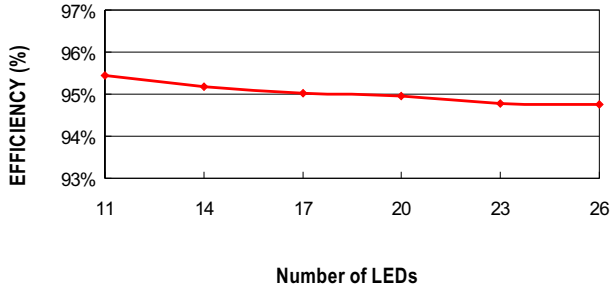
LDH-45B-350 24VDC input Vf=3.09V



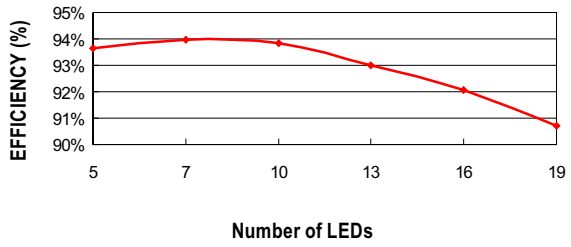
LDH-45A-500 12VDC input Vf=3.33V



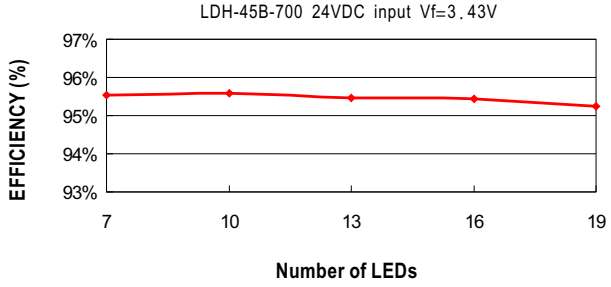
LDH-45B-500 24VDC input Vf=3.25V



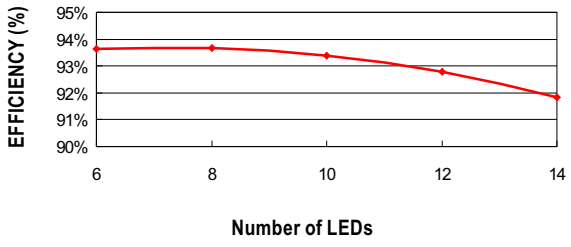
LDH-45A-700 12VDC input Vf=3.43V



LDH-45B-700 24VDC input Vf=3.43V



LDH-45A-1050 12VDC input Vf=3.15V



LDH-45B-1050 24VDC input Vf=3.15V