

Professionally approved products.

Datasheet

Constant Voltage LED Driver 60W 20V 3A RS

RS Stock number 706-6619



■ Features :

- Universal AC input / Full range
- High efficiency 89%
- Adjustable output voltage and current level
- Protections: Short circuit/Over load/Over voltage/Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- Fully isolated plastic case with terminal block style of I/O
- Built-in active PFC function, comply with EN61000-3-2 class C ($\geq 75\%$ load)
- UL1310 class 2 power unit
- Pass LPS
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications (Note.2)
- Compliance to worldwide safety regulations for lighting

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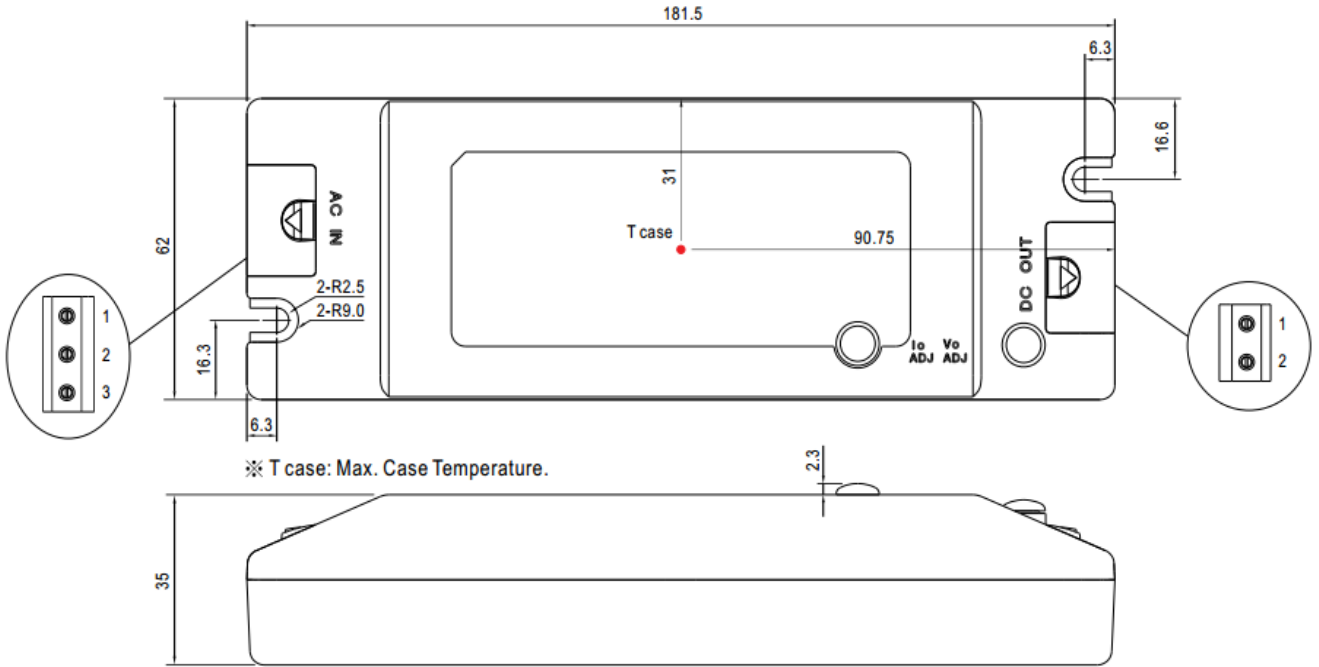
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MODEL		PLC-60-12	PLC-60-15	PLC-60-20	PLC-60-24	PLC-60-27	PLC-60-36	PLC-60-48	
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V	
	CONSTANT CURRENT REGION <small>Note.6</small>	8.4 ~ 12V	10.5 ~ 15V	14 ~ 20V	16.8 ~ 24V	18.9 ~ 27V	25.2 ~ 36V	33.6 ~ 48V	
	RATED CURRENT	5A	4A	3A	2.5A	2.3A	1.7A	1.3A	
	CURRENT RANGE	0 ~ 5A	0 ~ 4A	0 ~ 3A	0 ~ 2.5A	0 ~ 2.3A	0 ~ 1.7A	0 ~ 1.3A	
	RATED POWER	60W	60W	60W	60W	62.1W	61W	62.5W	
	RIPPLE & NOISE (max.) <small>Note.2</small>	2Vp-p	2.4Vp-p	1.8Vp-p	2.4Vp-p	2.7Vp-p	3.6Vp-p	4.6Vp-p	
	VOLTAGE ADJ. RANGE <small>Note.5</small>	11.5 ~ 13V	14.5 ~ 16.2V	19.5 ~ 22V	24 ~ 26V	25 ~ 30V	32.5 ~ 39V	43.6 ~ 51.8V	
	CURRENT ADJ. RANGE <small>Note.5</small>	3.75 ~ 5.15A	3 ~ 4.12A	2.25 ~ 3.09A	1.875 ~ 2.575A	1.725 ~ 2.369A	1.275 ~ 1.751A	0.975 ~ 1.339A	
	VOLTAGE TOLERANCE <small>Note.3</small>	±10%							
	LINE REGULATION	±3.0%							
	LOAD REGULATION	±5.0%							
SETUP TIME	1500ms / 230VAC 3000ms / 115VAC at full load								
INPUT	VOLTAGE RANGE <small>Note.4</small>	90 ~ 264VAC		127 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz							
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.9/230VAC at full load (Please refer to "Power Factor Characteristic" curve)							
	EFFICIENCY (Typ.)	85%	86%	87.5%	87%	88%	89%	89%	
	AC CURRENT (Typ.)	0.8A/115VAC		0.4A/230VAC					
	INRUSH CURRENT (max.)	40A/230VAC							
	LEAKAGE CURRENT	<0.75mA / 240VAC							
PROTECTION	OVER CURRENT	95 ~ 110%							
		Protection type : Constant current limiting, recovers automatically after fault condition is removed							
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed.							
	OVER VOLTAGE	13.8 ~ 16V	17.5 ~ 21V	23 ~ 26V	28 ~ 32V	31 ~ 35V	41 ~ 46V	54 ~ 60V	
	Protection type : Shut down o/p voltage, re-power on to recover								
OVER TEMPERATURE	95°C ±10°C (TSW1) detect on heatsink of power transistor								
	Protection type : Shut down o/p voltage, recovers automatically after temperature goes down								
ENVIRONMENT	WORKING TEMP.	-30 ~ +50°C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 95% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)							
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes							
SAFETY & EMC	SAFETY STANDARDS	UL1310 Class 2, TUV EN61347-1, EN61347-2-13, CAN/CSA C22.2 No. 223-M91(except for 48V) ; J61347-1, J61347-2-13 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC		I/P-FG:1.88KVAC		O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH							
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥ 75% load) ; EN61000-3-3							
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024,EN61547, light industry level, criteria A							
OTHERS	MTBF	515Khrs min. MIL-HDBK-217F (25°C)							
	DIMENSION	181.5*62*35mm (L*W*H)							
	PACKING	0.41Kg; 30pcs/13.3Kg/0.67CUFT							
NOTE	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. Derating may be needed under low input voltage. Please check the static characteristics for more details. Output voltage can be adjusted through the SVR1 on the PCB ; limit of output constant current level can be adjusted through the SVR2 on the PCB. Constant current operation region is within 70% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers. 								

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Mechanical Specification

Case No.991A Unit:mm



※ T case: Max. Case Temperature.

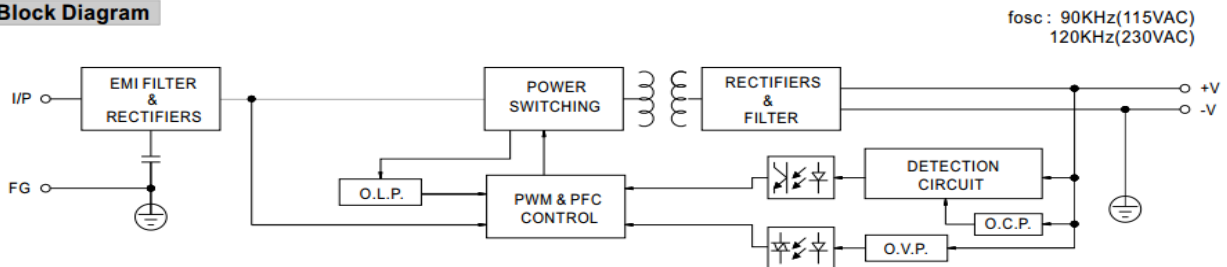
Terminal Pin No. Assignment (TB1):
SWITHLAB MB310-75003

Pin No.	Assignment
1	AC/L
2	AC/N
3	FG ⊕

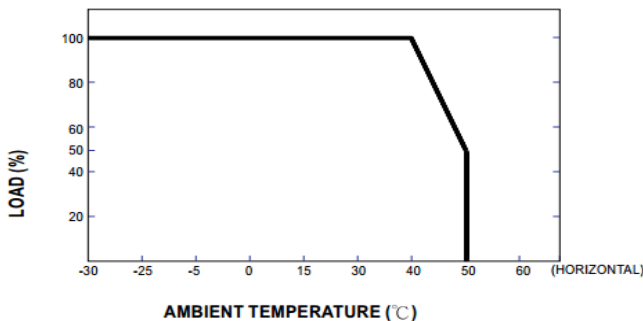
Terminal Pin No. Assignment (TB2):
SWITHLAB MB310-75002

Pin No.	Assignment
1	+V
2	-V

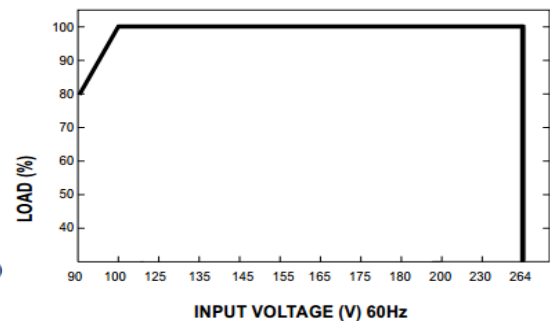
Block Diagram



Derating Curve



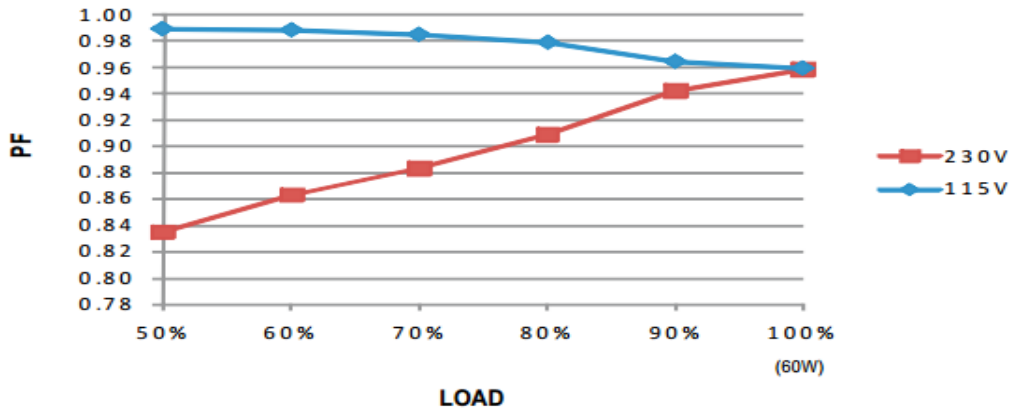
Static Characteristics



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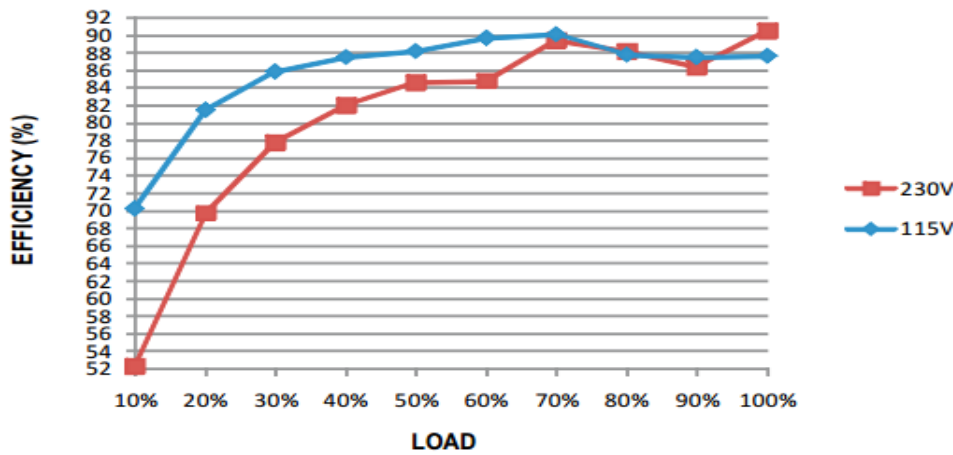
Power Factor Characteristic

Constant Current Mode

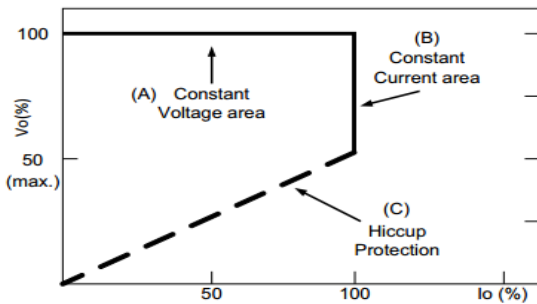


EFFICIENCY vs LOAD (48V Model)

PLC-60 series possess superior working efficiency that up to 89% can be reached in field applications.



DRIVING METHODS OF LED MODULE



Typical LED power supply I-V curve