25W Multiple-Stage Constant Current Mode LED Driver LCM-25 series

User's Manual
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Features

- Constant Current mode output with multiple levels selectable by dip switch
- Plastic housing with class II design
- Built-in active PFC function
- Standby power consumption <0.5W
- Functions: 3 in 1 dimming (dim-to-off); synchronization up to 10 units
- 3 years warranty

Applications

- LED indoor lighting
- LED office lighting
- LED architectural lighting
- LED panel lighting

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

LCM-25 series is a 25W AC/DC constant current mode output LED driver featuring the multiple levels selectable by dip switch. LCM-25 operates from 180～277VAC and offers different current levels ranging between 350mA and 1050mA. Thanks to the efficiency up to 86%, with the fanless design, the entire series is able to operate for -30℃~+85℃ case temperature under free air convection. LCM-25 is equipped with various functions, such as the dimming function and synchronization, so as to provide the optimal design flexibility for LED lighting system.

Model Encoding

LCM - 25

- 25 → Output wattage
- LCM → Series name

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25W Multiple-Stage Constant Current Mode LED Driver LCM-25 series

SPECIFICATION

MODEL		LCM-25					
OUTPUT	CURRENT LEVEL	Current level selectable via DIP switch, please refer to"DIP SWITCH TABLE" section					
		350mA	500mA	600mA	700mA(default)	900mA	1050mA
	RATED POWER	18.9W	25.2W				
	DC VOLTAGE RANGE	6 ~ 54V	6 ~ 50V	6 ~ 42V	6 ~ 36V	6 ~ 28V	6 ~ 24V
	OPEN CIRCUIT VOLTAGE (max.)	59V			41V		
	CURRENT RIPPLE	5.0% max. @rated current					
	CURRENT TOLERANCE	±5%					
	SETUP TIME Note.3	500ms / 230VAC					
INPUT	VOLTAGE RANGE Note.2	180 ~ 277VAC 254 ~ 392VDC (Please refer to "STATIC CHARACTERISTIC" section)					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF≧0.94/230VAC, PF≧0.91/277VAC @full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)					
	TOTAL HARMONIC DISTORTION	THD< 20%(@load≧50%/230VAC; @load≧75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)					
	EFFICIENCY (Typ.) Note.4	86%					
	AC CURRENT (Typ.)	0.17A/230VAC 0.15A/277VAC					
	INRUSH CURRENT (Typ.)	COLD START 20A(twidth=260μs measured at 50% Ipeak) at 230VAC; Per NEMA 410					
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	26 units (circuit breaker of type B) / 44 units (circuit breaker of type C) at 230VAC					
	LEAKAGE CURRENT	<0.5mA / 240VAC					
	STANDBY POWER CONSUMPTION Note.5	<0.5W					
PROTECTION	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed					
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down					
FUNCTION	DIMMING	Please refer to "DIMMING OPERATION" section					
	SYNCHRONIZATION	Please refer to "SYNCHRONIZATION OPERATION" section					
ENVIRONMENT	WORKING TEMP.	Tcase=-30 ~ +85℃ (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)					
	MAX. CASE TEMP.	Tcase=+85℃					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	UI8750, CSA C22.2 No.250.13-12, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13, BS EN/EN62384 independent, GB/T19510.1,GB/T19510.213, BIS IS15885, EAC TP TC 004 approved					
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC					
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION	Compliance to BS EN/EN55015, BS EN/EN61000-3-2 Class C(@load≧50%) ; BS EN/EN61000-3-3; GB/T 17743, GB17625.1, EAC TP TC 020					
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61547, light industry level(surge immunity Line-Line 2KV), EAC TP TC 020					
OTHERS	MTBF	3298.3K hrs min. Telcordia SR-332 (Bellcore) ; 298.7K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	105*68*23mm (L*W*H)					
	PACKING	0.16Kg ; 72pcs/12.5Kg/1.04CUFT					

NOTE

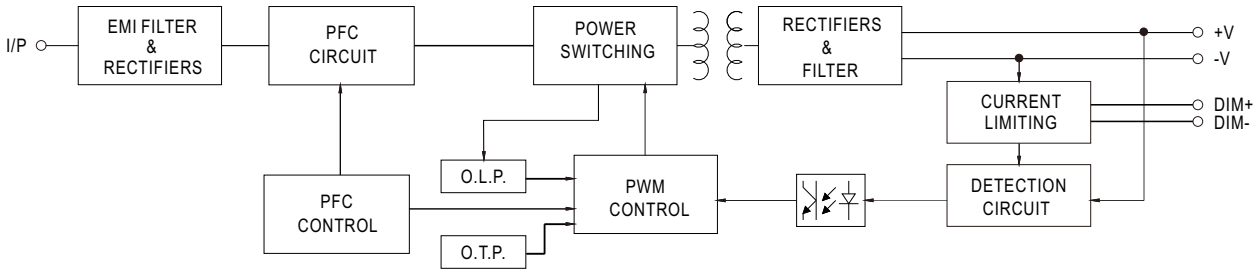
1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.
2. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.
3. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.
4. Efficiency is measured at 500mA/50V output set by DIP switch.
5. Standby power consumption is measured at 230VAC.
6. The driver 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. (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
7. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
8. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a switch without permanently connected to the mains.

※ Product Liability Disclaimer：For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

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■ BLOCK DIAGRAM

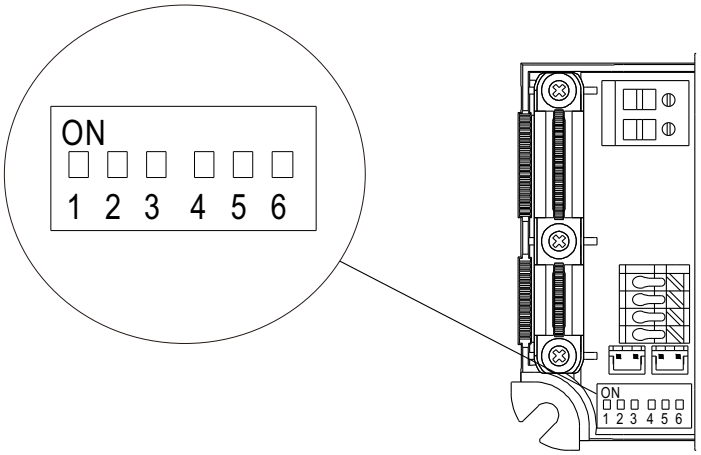
PFC fosc : 45KHz
PWM fosc : 70KHz



■ DIP SWITCH TABLE

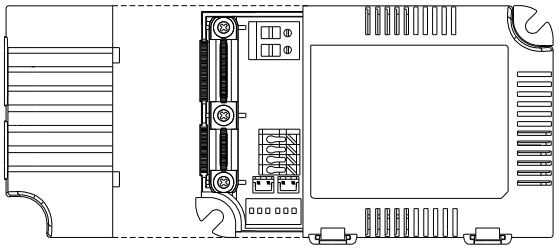
LCM-25 is a multiple-stage constant current driver, selection of output current through DIP switch is exhibited below.

Io \ DIP S.W.	1	2	3	4	5	6
350mA	----	----	----	----	----	----
500mA	ON	----	----	----	----	----
600mA	ON	ON	----	----	----	----
700mA(factory default)	ON	ON	ON	----	----	ON
900mA	ON	ON	ON	ON	----	ON
1050mA	ON	ON	ON	ON	ON	ON



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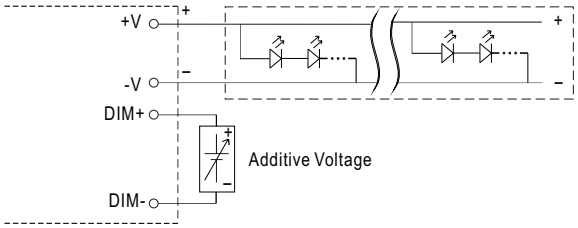
■ DIMMING OPERATION



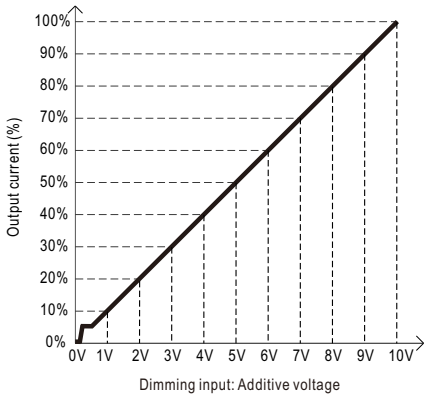
※ 3 in 1 dimming function

- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 0 ~ 10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100μA (typ.)

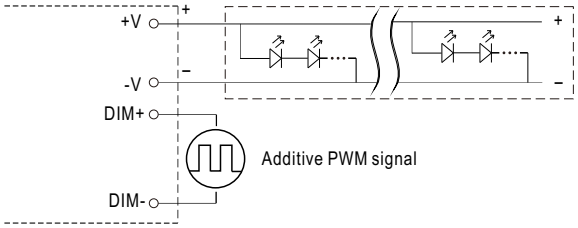
◎ Applying additive 0 ~ 10VDC



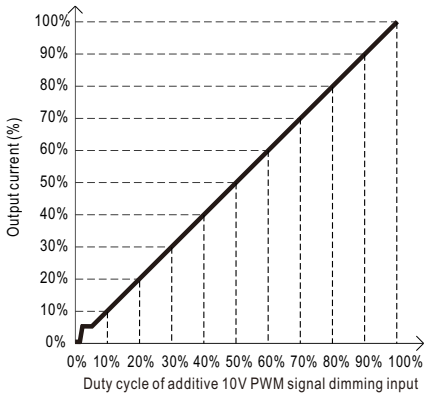
"DO NOT connect "DIM- to -V"



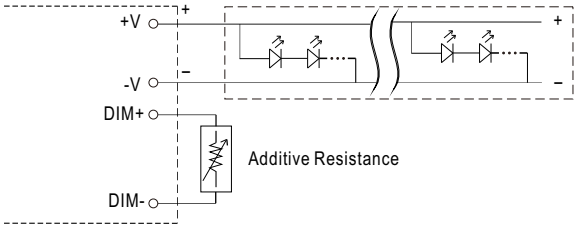
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



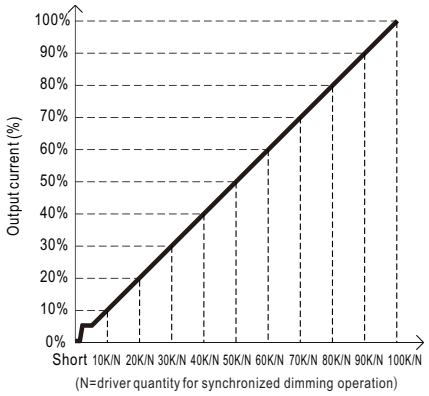
"DO NOT connect "DIM- to -V"



◎ Applying additive resistance:



"DO NOT connect "DIM- to -V"

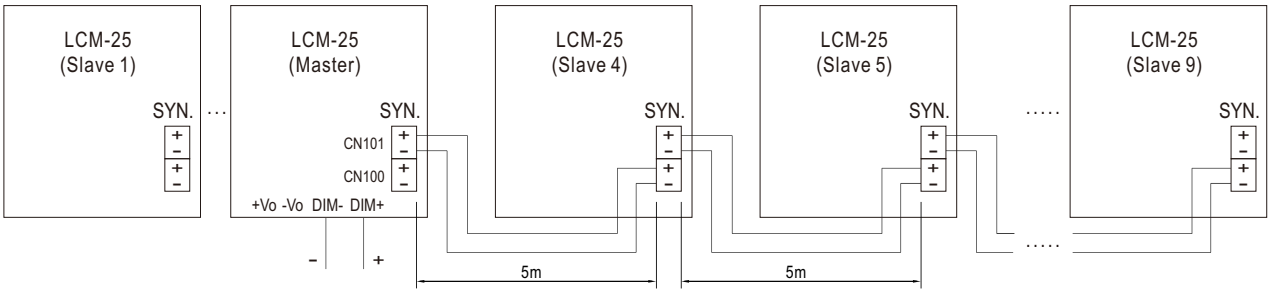


Note : 1. Min. dimming level is about 6% and the output current is not defined when 0%< Iout<6%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.
3. Please do not activate"temperature compensation" when performing dimming operation.

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■ SYNCHRONIZATION OPERATION

- Synchronization up to 10 drivers (1 master + 9 slaves)
- Dimming operating range : 10%~100%
- Sync cable length : < 5m
- Sync cable type : Flat cable
- Sync cable cross section area : 22 – 24 AWG (0.2~0.3mm^2)

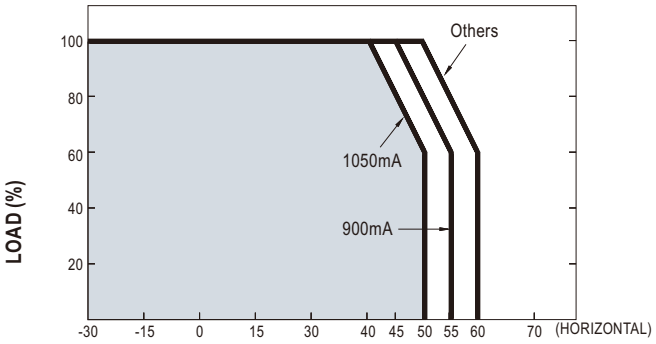


- CN100, CN101 : used to synchronously control the LCM units in parallel.

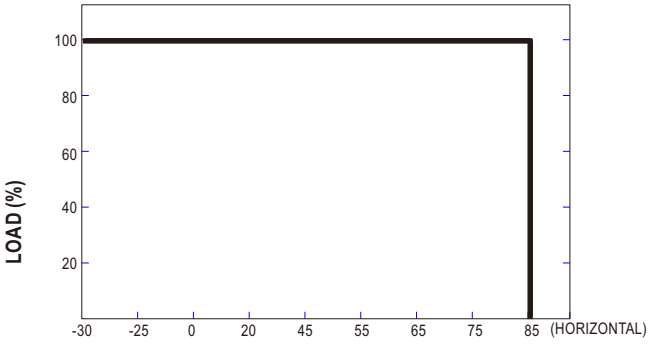
NOTE : 1. Please make sure all units are set to 100% dimming setting (factory default) before synchronizing.
2. Min. Dimming operating range depends on dimmer setting.

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■ OUTPUT LOAD vs TEMPERATURE

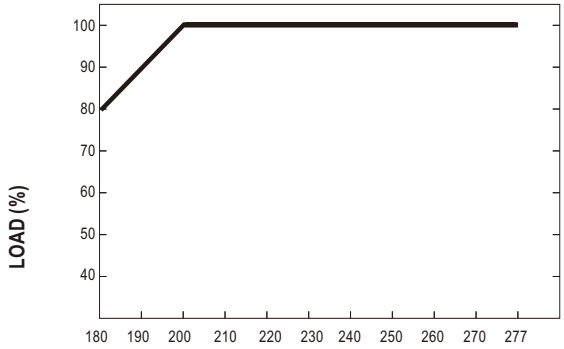


AMBIENT TEMPERATURE,Ta (℃)



Tcase (℃)

■ STATIC CHARACTERISTIC



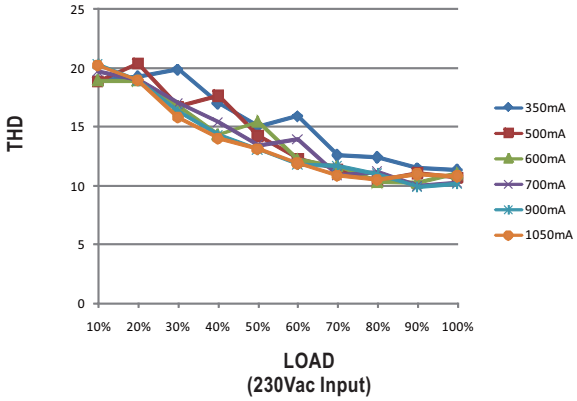
INPUT VOLTAGE (V) 60Hz

※De-rating is needed under low input voltage.

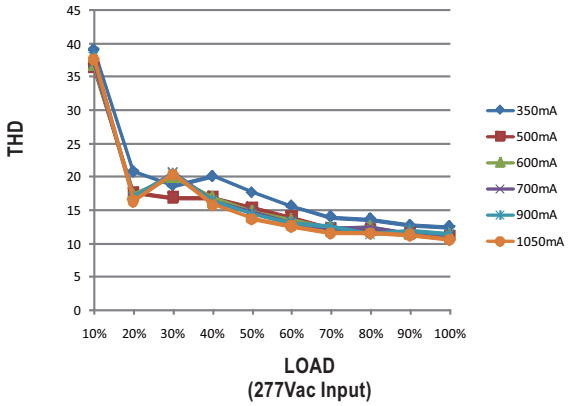
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■ TOTAL HARMONIC DISTORTION (THD)

※ Tcase at 75℃



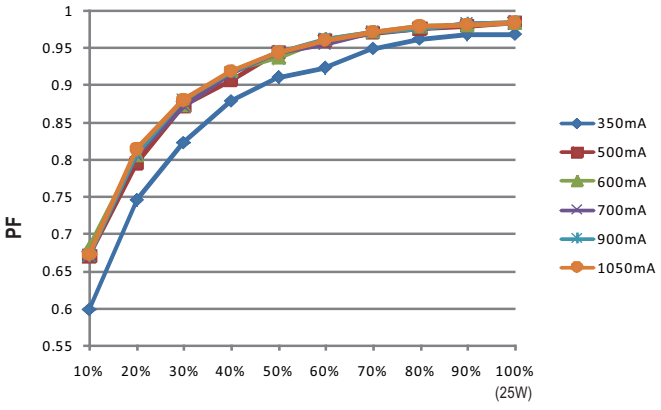
LOAD
(230Vac Input)



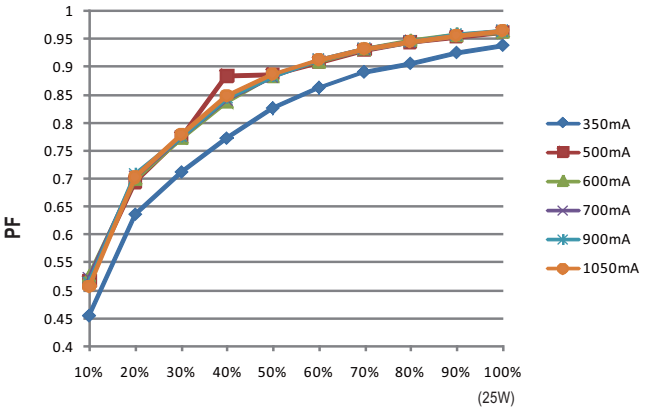
LOAD
(277Vac Input)

■ POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 75℃



LOAD
(230Vac Input)

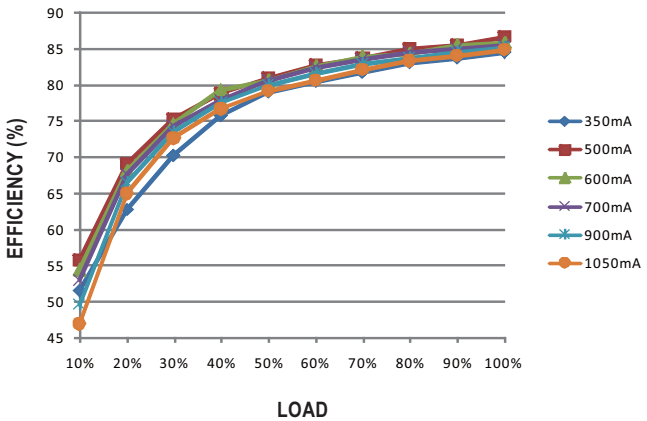


LOAD
(277Vac Input)

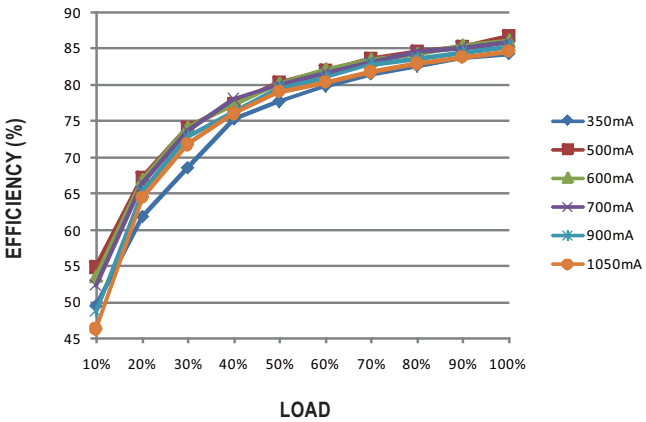
■ EFFICIENCY vs LOAD

LCM-25 series possess superior working efficiency that up to 86% can be reached in field applications.

※ Tcase at 75℃



LOAD
(230Vac Input)

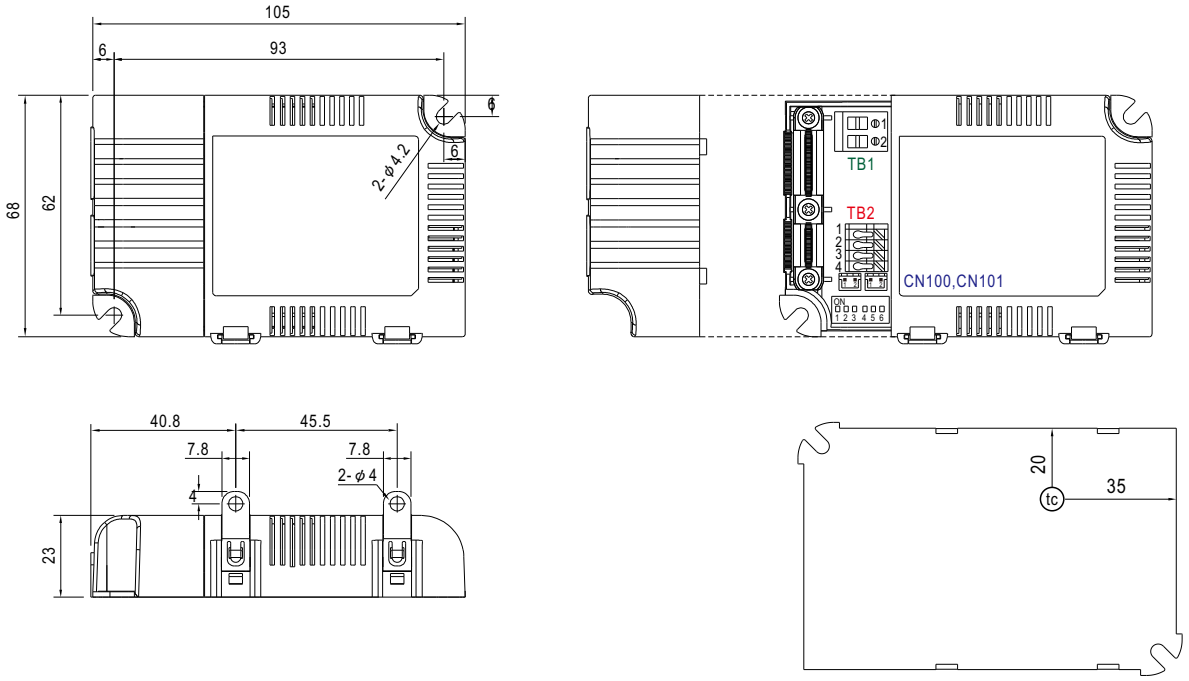


LOAD
(277Vac Input)

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■ MECHANICAL SPECIFICATION

Case No.LCM-25 Unit:mm Tolerance:±1



Bottom View

• tc : Max. Case Temperature

※Terminal Pin No. Assignment(TB1)

Pin No.	Assignment
1	AC/L
2	AC/N

※Terminal Pin No. Assignment(TB2)

Pin No.	Assignment	Pin No.	Assignment
1	+V	3	DIM-
2	-V	4	DIM+

※SYN. Connector(CN100/CN101):JST B2B-PH-KL or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	–	JST PHR-2 or equivalent	JST SPH-002T-P0.5S or equivalent
2	+		

Note:Please use wires with a cross section of 0.5~2.5mm^2(14~20AWG) for TB1 and wires with a cross section of 0.5~1.5 mm^2(16~20AWG) for TB2.
Please use wires with a cross section of 0.126~0.205mm^2(24~26AWG) for CN100/CN101

■ INSTALLATION MANUAL

Please refer to: http://www.meanwell.com/manual.html

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