84~150W Constant Voltage + Constant Current LED Driver

(for DA-Type only) SELV IP65 IP67 IS 15885(Part 2/Sec13) R-41027766 (for 12/12B/12DA/24/24B/24DA /36A/42/42A/48A/54 only) Type HL (except for BE-Type)

■ Features

- Constant Voltage + Constant Current mode output
- Metal housing design with functional Ground
- Built-in active PFC function
- No load / Standby power consumption <0.5W
- IP67 / IP65 rating for indoor or outdoor installations
- Function options: output adjustable via potentiometer; 3 in 1 dimming (dim-to-off); Smart timer dimming; DALI; Auxiliary DC output
- Typical lifetime>50000 hours
- 5 years warranty

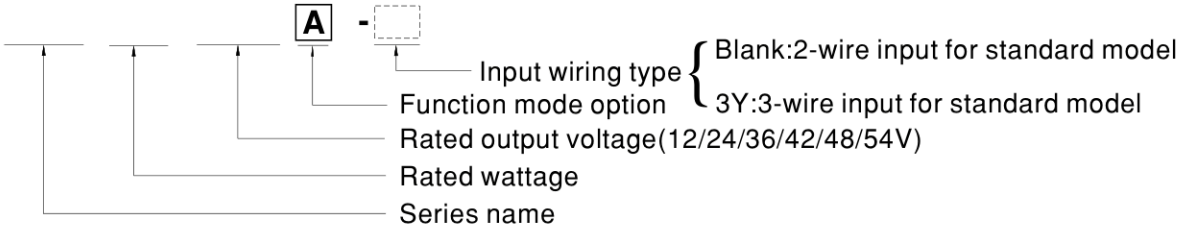
■ Applications

- LED street lighting
- LED architectural lighting
- LED bay lighting
- LED floodlighting
- Type “HL” for use in Class I, Division 2 hazardous (Classified) location.

■ Description

series is a 150W AC/DC LED driver featuring the dual mode constant voltage and constant current output. operates from 100～305VAC and offers models with different rated voltage ranging between 12V and 54V. Thanks to the high efficiency up to 91%, with the fanless design, the entire series is able to operate for -40℃ ~ +90℃ case temperature under free air convection. The design of metal housing and IP67/IP65 ingress protection level allows this series to fit both indoor and outdoor applications. equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system

■ Model Encoding



Type	IP Level	Function	Note
Blank	IP67	Io and Vo fixed.	
A	IP65	Io and Vo adjustable through built-in potentiometer.	
B	IP67	3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	
AB	IP65	Io and Vo adjustable through built-in potentiometer & 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	
DA	IP67	DALI control technology.	
Dx	IP67	Built-in Smart timer dimming function by user request.	
D2	IP67	Built-in Smart timer dimming and programmable function.	
BE	IP67	3 in 1 dimming function and Auxiliary DC output	

SPECIFICATION

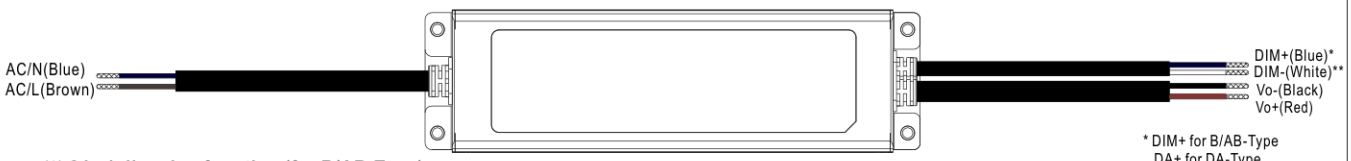
MODEL								
OUTPUT	DC VOLTAGE		12V	24V	36V	42V	48V	54V
	CONSTANT CURRENT REGION Note.2		6 ~ 12V	12 ~ 24V	18 ~ 36V	21 ~ 42V	24 ~ 48V	27 ~ 54V
	RATED CURRENT		10A	6.25A	4.17A	3.57A	3.13A	2.8A
	RATED CURRENT(for BE Type only)		8A	5.6A	3.73A	3.2A	2.8A	2.5A
	RATED POWER		100VAC ~ 180VAC					
		(For All the Types)	84W	105W	105W	105W	105W	105W
			200VAC ~ 305VAC					
		(Except for BE Type)	120W	150W	150.1W	150W	150.2W	151.2W
		(For BE Type only)	96W	134.4W	134.28W	134.4W	134.4W	135W
	RIPPLE & NOISE (max.) Note.3		150mVp-p	200mVp-p	250mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE ADJ. RANGE		Adjustable for A/AB-Type only (via the built-in potentiometer)					
			10.8 ~ 13.2V	21.6 ~ 26.4V	32.4 ~ 39.6V	37.8 ~ 46.2V	43.2 ~ 52.8V	49 ~ 58V
	CURRENT ADJ. RANGE		Adjustable for A/AB-Type only (via the built-in potentiometer)					
			5 ~ 10A	3.2 ~ 6.25A	2.1 ~ 4.17A	1.8 ~ 3.57A	1.56 ~ 3.13A	1.4 ~ 2.8A
	VOLTAGE TOLERANCE Note.4		±3.0%	±3.0%	±2.5%	±2.5%	±2.0%	±2.0%
	LINE REGULATION		±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION		±2.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%
	AUXILIARY DC OUTPUT		Nominal 15V(deviation 11.5~15.5V)@0.3A for BE-Type only					
	SETUP, RISE TIME Note.6		1600ms, 80ms/115VAC 500ms, 100ms/230VAC					
	HOLD UP TIME (Typ.)		10ms/115VAC, 230VAC					
INPUT	VOLTAGE RANGE Note.5		100 ~ 305VAC 142 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)					
	FREQUENCY RANGE		47 ~ 63Hz					
	POWER FACTOR		PF≧0.97/115VAC, PF≧0.95/230VAC, PF≧0.92/277VAC@full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)					
	TOTAL HARMONIC DISTORTION		THD< 20%(@load≧50%/115VC; @load≧60%/230VAC; @load≧75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)					
	EFFICIENCY (Typ.)		88%	89%	90%	90%	90%	91%
	EFFICIENCY (Typ.)(for BE Type only)		86%	87%	88%	88%	88%	89%
	AC CURRENT		1.7A / 115VAC 0.9A / 230VAC 0.7A/277VAC					
	INRUSH CURRENT(Typ.)		COLD START 65A(twidth=550μs measured at 50% Ipeak) at 230VAC; Per NEMA 410					
	MAX. No. of PSUs on 16A CIRCUIT BREAKER		3 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC					
	LEAKAGE CURRENT		<0.75mA / 277VAC					
	NO LOAD / STANDBY POWER CONSUMPTION		No load power consumption <0.5W for Blank / A / Dx / D2-Type Standby power consumption <0.5W for B / AB / DA-Type					
PROTECTION	OVER CURRENT		95 ~ 108%					
			Constant current limiting, recovers automatically after fault condition is removed					
	SHORT CIRCUIT		Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE		14 ~ 18V	28 ~ 34V	41 ~ 48V	47 ~ 54V	54 ~ 62V	59 ~ 68V
			Shut down output voltage, re-power on to recover					
	OVER TEMPERATURE		Shut down output voltage, re-power on to recover					
ENVIRONMENT	WORKING TEMP.		Tcase=-40 ~ +90℃ (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)					
	MAX. CASE TEMP.		Tcase=+90℃					
	WORKING HUMIDITY		20 ~ 95% RH non-condensing					
	STORAGE TEMP., HUMIDITY		-40 ~ +80℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT		±0.03%/℃ (0 ~ 60℃)					
	VIBRATION		10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS		UL8750(type"HL")(except for BE-type), CSA C22.2 No. 250.13-12; IEC/EN/AS/NZS 61347-1,IEC/EN/AS/NZS 61347-2-13 independent, EN62384,BIS IS15885(for 12/12B/12DA/24/24B/24DA/36A/42/42A/48A/54 only), EAC TP TC 004,GB19510.1,GB19510.14; IP65 or IP67; KC61347-1,KC61347-2-13 approved					
	DALI STANDARDS		Compliance to IEC62386-101,102,(207 by request) for DA Type only					
	WITHSTAND VOLTAGE		I/P-O/P:3.75KVAC I/P-FG:2.0KVAC O/P-FG:1.5KVAC					
	ISOLATION RESISTANCE		I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION		Compliance to EN55015,EN61000-3-2 Class C (@load≧60%) ; EN61000-3-3; GB17743 , GB17625.1,EAC TP TC 020; KC KN15,KN61547					
	EMC IMMUNITY		Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level (surge immunity Line-Earth 6KV, Line-Line 4KV),EAC TP TC 020; KC KN15,KN61547					
OTHERS	MTBF		899.8K hrs min. Telcordia SR-332 (Bellcore) 313.66Khrs min. MIL-HDBK-217F (25℃)					
	DIMENSION		219*63*35.5mm (L*W*H)					
	PACKING		0.95Kg ; 16pcs/16.0kg/0.77CUFT					

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.
2. Please refer to "DRIVING METHODS OF LED MODULE". For DA-Type, Constant Current region is 60%~100% of maximum voltage under rated power delivery.
3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
4. Tolerance : includes set up tolerance, line regulation and load regulation.
5. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTICS" sections for details.
6. 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.
7. 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.
8. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 80℃ or less.

10. 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).
11. For any application note and IP water proof function installation caution, please refer our user manual before using.

■ DIMMING OPERATION

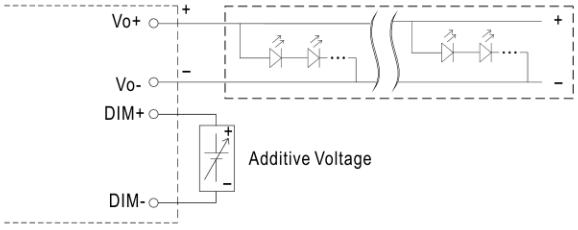


* DIM+ for B/AB-Type
DA+ for DA-Type
PROG+ for D2-Type
* *DIM- for B/AB-Type
DA- for DA-Type
PROG- for D2-Type

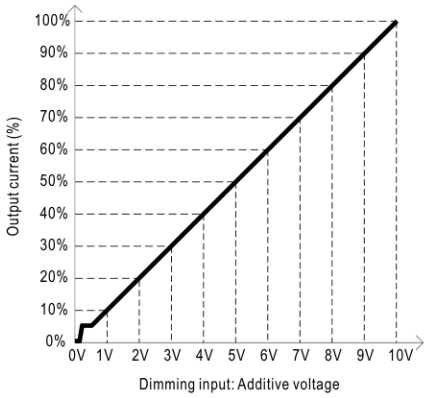
※ 3 in 1 dimming function (for B/AB-Type)

- 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.)

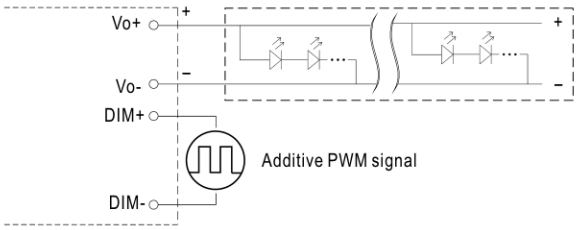
◎ Applying additive 0 ~ 10VDC



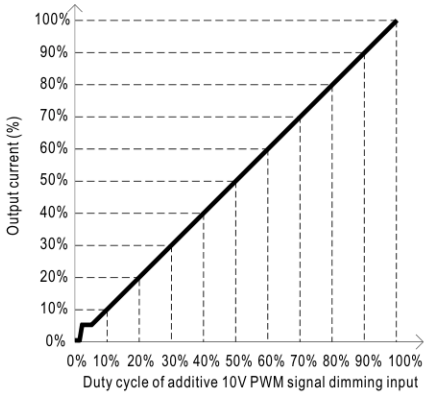
"DO NOT connect "DIM- to Vo-"



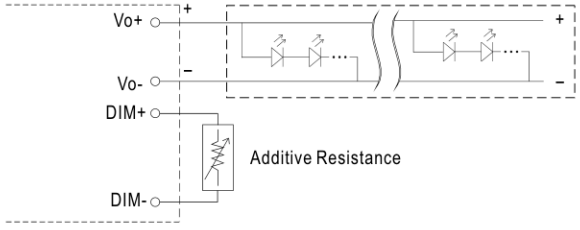
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



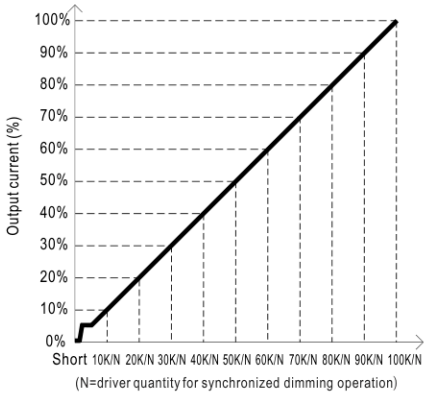
"DO NOT connect "DIM- to Vo-"



◎ Applying additive resistance:

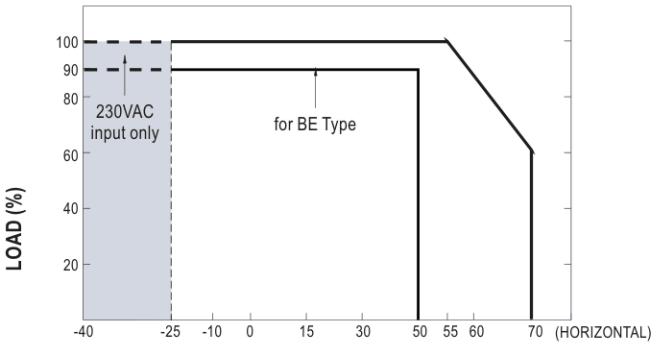


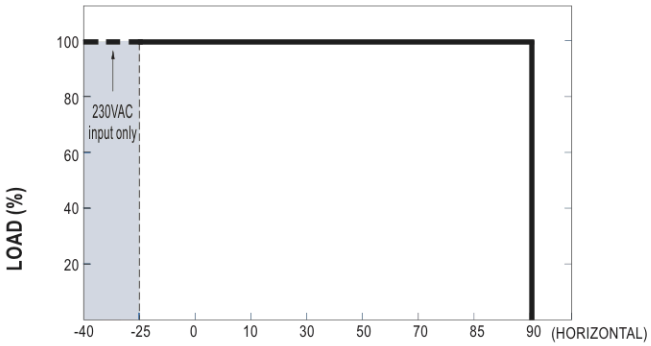
"DO NOT connect "DIM- to Vo-"



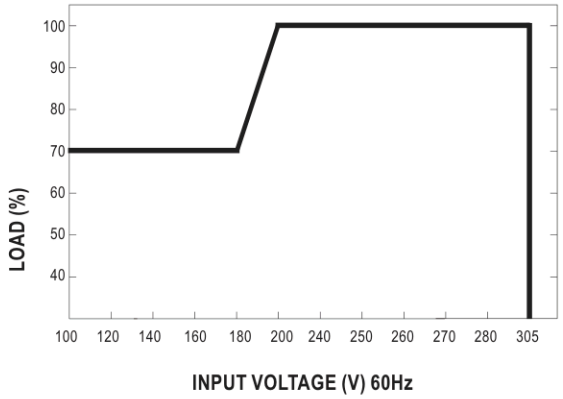
Note : 1. Min. dimming level is about 8% and the output current is not defined when 0%< Iout<8%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

■ OUTPUT LOAD vs TEMPERATURE(Note.9)





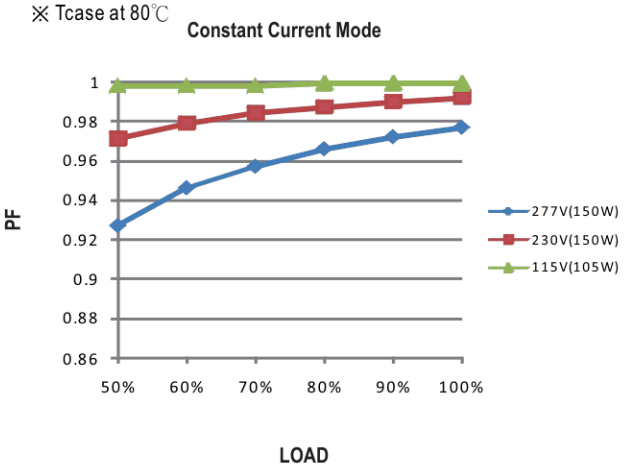
■ STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

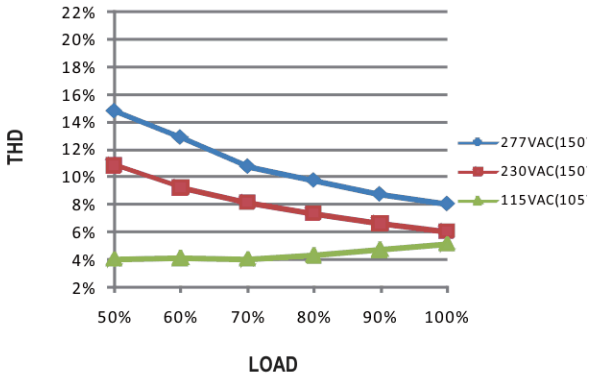
■ POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 80℃



■ TOTAL HARMONIC DISTORTION (THD)

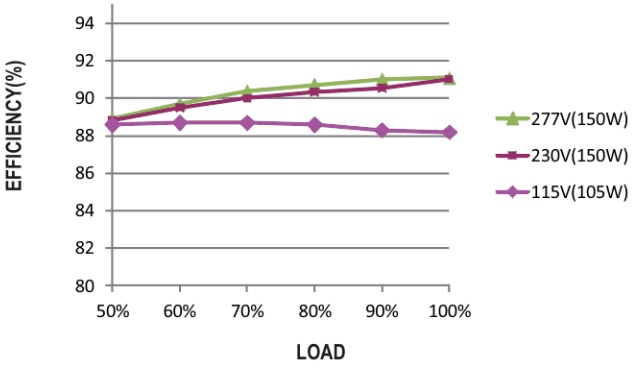
※ 54V Model, Tcase at 80℃



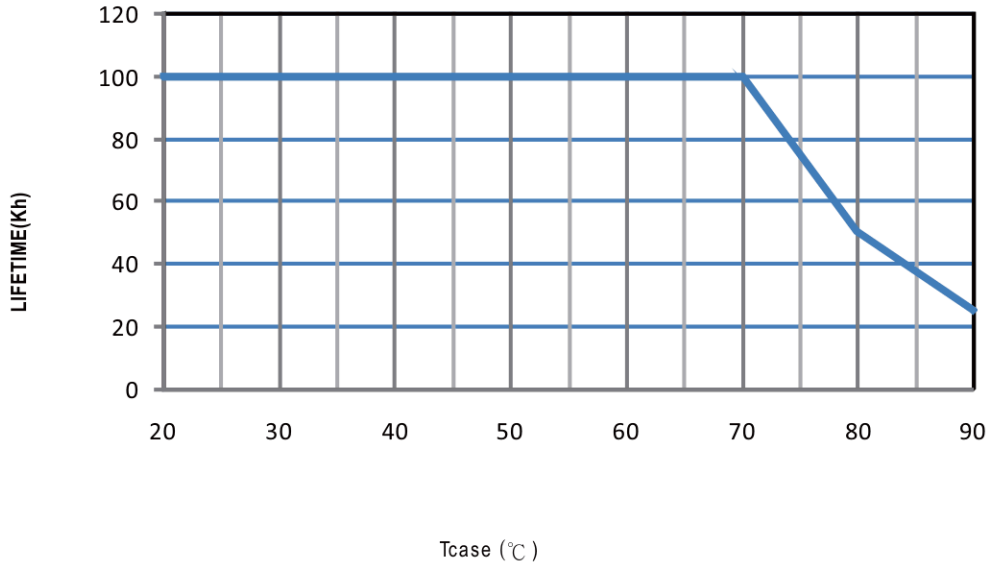
■ EFFICIENCY vs LOAD

series possess superior working efficiency that up to 91% can be reached in field applications.

※ 54V Model, Tcase at 80℃



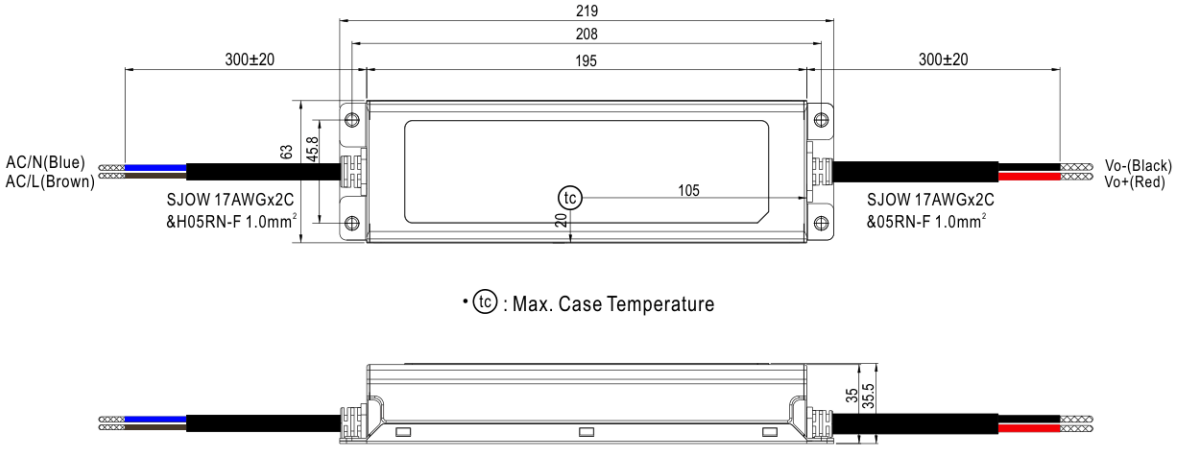
■ LIFE TIME



■ Mechanical Specification

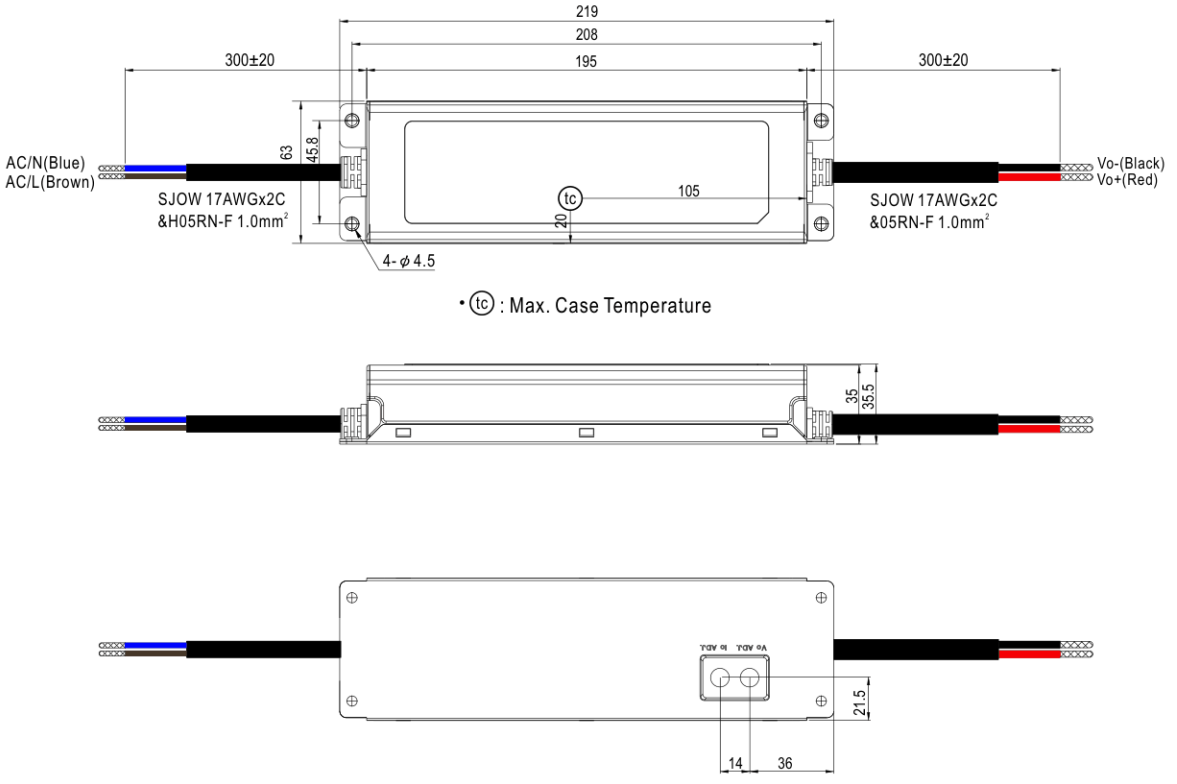
※ **Blank-Type**

CASE NO.: 237A Unit:mm



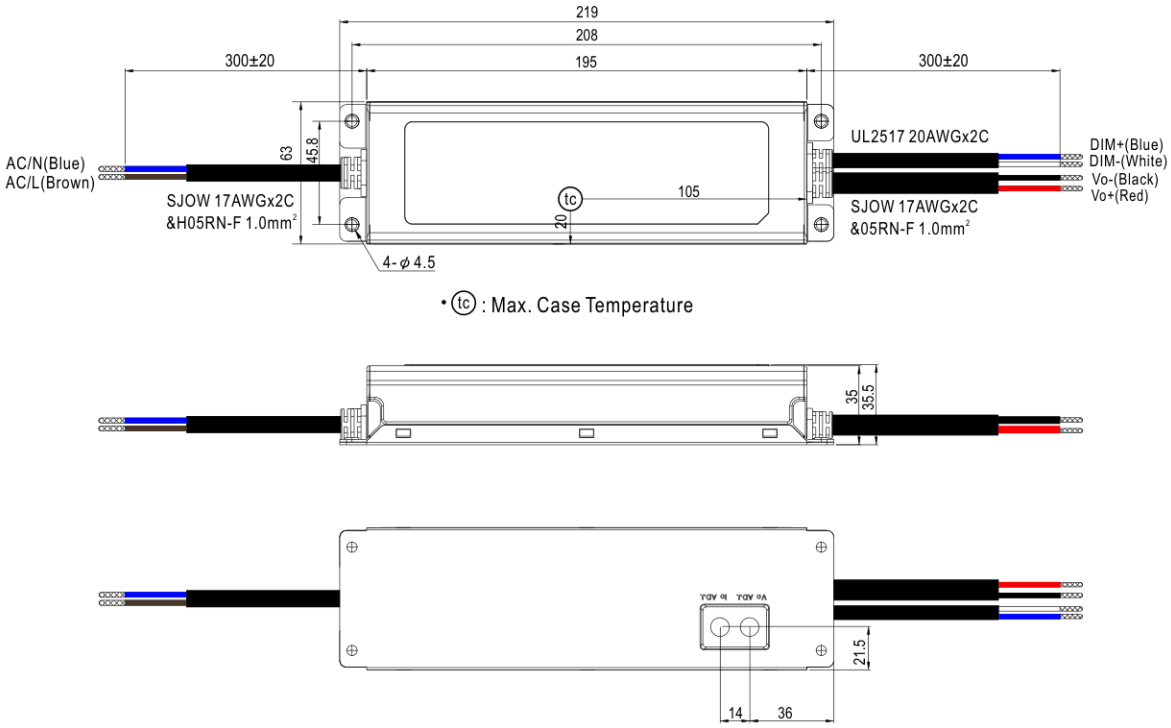
• tc : Max. Case Temperature

※ **A-Type**



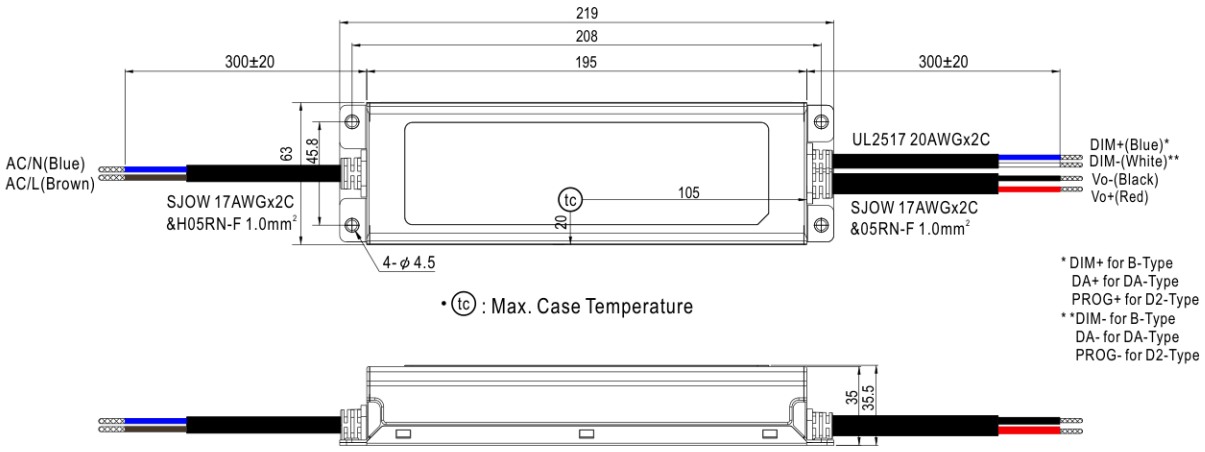
• tc : Max. Case Temperature

※ **AB-Type**



• ⓣc : Max. Case Temperature

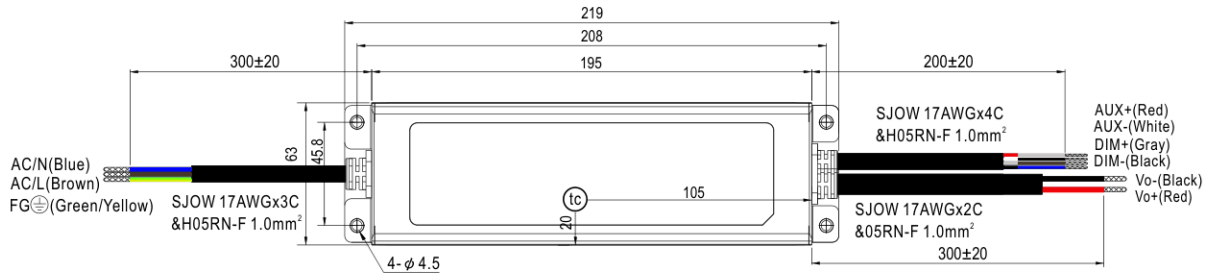
※ **B/DA/D2-Type**



• ⓣc : Max. Case Temperature

* DIM+ for B-Type
DA+ for DA-Type
PROG+ for D2-Type
* *DIM- for B-Type
DA- for DA-Type
PROG- for D2-Type

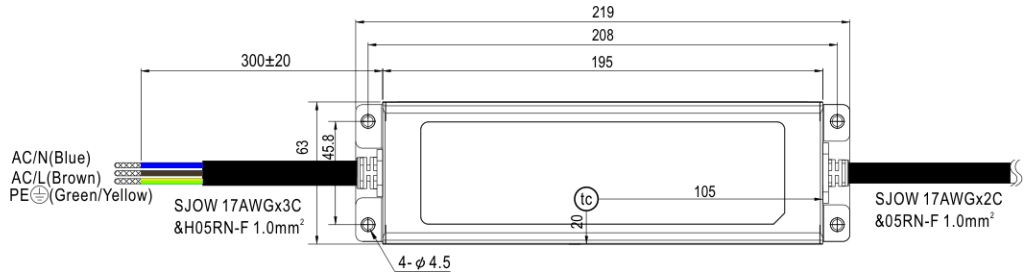
※ **BE-Type**



• ⓣc : Max. Case Temperature



※ **3Y Model (3-wire input)**



• ⓣc : Max. Case Temperature

◎ Note1: Please connect the case to PE for the complete EMC deliverance and safety use.