Features

- Low THD, 10% Max up to 240 Vac
- Compact Metal Case with Excellent Thermal Performance
- Input Surge Protection: DM 4kV, CM 6kV
- High Reliability & Long Lifetime: 85,800 hrs. at 70°C Case Temperature
- All-Around Protection: IUVP, IOVP , OVP, SCP, OTP
- IP67
- SELV Output
- 5 Year Warranty

Description

The *EUC-060SxxxSVM000x* series is a 60W, constant-current IP67 LED driver that operates from 90-305Vac input with excellent power factor and THD feature. It is created for many lighting applications including low bay, tunnel and street etc. The high efficiency of these drivers and compact metal case enable them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, input under voltage, input over voltage, output over voltage, short circuit, and over temperature.

Models

Output Current Range	Input Voltage Range(1)	Output Voltage Range	Max. Output Power	Typical Efficiency (2)	Typical Power Factor		Model Number (3)
					120Vac	220Vac	
500 mA	90 ~ 305 Vac/ 127 ~ 250 Vdc	60 ~ 120 Vdc	60 W	90.0%	0.99	0.96	EUC-060S070SVM0004
700 mA	90 ~ 305 Vac/ 127 ~ 250 Vdc	48 ~ 86 Vdc	60 W	89.0%	0.99	0.96	EUC-060S070SVM
860 mA	90 ~ 305 Vac/ 127 ~ 250 Vdc	35 ~ 70 Vdc	60 W	89.0%	0.99	0.96	EUC-060S105SVM0004(4)
1050 mA	90 ~ 305 Vac/ 127 ~ 250 Vdc	34 ~ 57 Vdc	60 W	89.0%	0.99	0.96	EUC-060S105SVM(4)
1200 mA	90 ~ 305 Vac/ 127 ~ 250 Vdc	25 ~ 50 Vdc	60 W	89.0%	0.99	0.96	EUC-060S180SVM0006(4)
1400 mA	90 ~ 305 Vac/ 127 ~ 250 Vdc	21 ~ 43 Vdc	60 W	88.0%	0.99	0.96	EUC-060S180SVM0004(4)
1800 mA	90 ~ 305 Vac/ 127 ~ 250 Vdc	20 ~ 33 Vdc	60 W	87.0%	0.99	0.96	EUC-060S180SVM(4)

Notes: (1) Certified input voltage range: 120-240Vac or 127-250Vdc.
(2) Measured at 100% load and 220 Vac input.
(3) For BIS models please click here see the: BIS Models List.
(4) SELV output.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	90 Vac	-	305 Vac	
Input DC Voltage	127 Vdc	-	250 Vdc	

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC60598-1; 240Vac/60Hz
Input AC Current	-	-	0.66 A	Measured at 100% load and 120 Vac input.
	-	-	0.40 A	Measured at 100% load and 220 Vac input.
Inrush Current(I^2t)	-	-	0.26 A^2s	At 220Vac input, 25℃ cold start, duration= 236 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
Power Factor	0.90	-	-	120-240Vac, 50-60Hz, 75%-100% Load (45~60W)
THD	-	-	10%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-8%Io	-	8%Io	At 100% load condition.
Total Output Current Ripple (pk-avg)	-	50%Io	75%Io	At 100% load condition.
Startup Overshoot Current	-	5%Io	10%Io	At 100% load condition.
No Load Output Voltage EUC-060S070SVM0004 EUC-060S070SVM EUC-060S105SVM0004 EUC-060S105SVM EUC-060S180SVM0006 EUC-060S180SVM0004 EUC-060S180SVM	 - - - - - - -	 - - - - - - -	 160V 160V 100V 100V 63V 63V 63V	
Line Regulation	-	-	±5.0%	Measured at 100% load
Load Regulation	-	-	±5.0%	
Turn-on Delay Time	-	1.0 s	1.5 s	Measured at 120Vac input, 75%-100%Load.
	-	0.5 s	1.0 s	Measured at 220Vac input, 75%-100%Load.
Temperature Coefficient of Iomax	-	0.06%/°C	-	Case temperature = 0°C ~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input: EUC-060S070SVM0004 EUC-060S070SVM EUC-060S105SVM0004 EUC-060S105SVM EUC-060S180SVM0006 EUC-060S180SVM0004 EUC-060S180SVM	 86.0% 85.0% 85.0% 85.0% 85.0% 84.0% 84.0%	 88.0% 87.0% 87.0% 87.0% 87.0% 86.0% 85.0%	 - - - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient.

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220 Vac input: EUC-060S070SVM0004 EUC-060S070SVM EUC-060S105SVM0004 EUC-060S105SVM EUC-060S180SVM0006 EUC-060S180SVM0004 EUC-060S180SVM	 88.0% 87.0% 87.0% 87.0% 87.0% 86.0% 85.0%	 90.0% 89.0% 89.0% 89.0% 89.0% 88.0% 87.0%	 - - - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient.
Efficiency at 277 Vac input: EUC-060S070SVM0004 EUC-060S070SVM EUC-060S105SVM0004 EUC-060S105SVM EUC-060S180SVM0006 EUC-060S180SVM0004 EUC-060S180SVM	 88.0% 87.0% 87.0% 87.0% 87.0% 86.0% 85.0%	 90.0% 89.0% 89.0% 89.0% 89.0% 88.0% 87.0%	 - - - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient.
MTBF	-	843,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	85,800 Hours	-	Measured at 120Vac input, 80%Load and 70°C case temperature; See lifetime vs. Tc curve for the details.
Operating Case Temperature for Safety Tc_s	-40 °C	-	+90 °C	
Operating Case Temperature for Warranty Tc_w	-40 °C	-	+75 °C	Case temperature for 5 years warranty. Humidity: 10% RH to 95% RH;
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5%RH to 95%RH;
Dimensions Inches (L × W × H) Millimeters (L × W × H)	3.74 x 2.52 x 1.26 95 x 64 x 32			With mounting ear 4.41 x 2.52 x 1.26 112 x 64 x 32
Net Weight	-	400 g	-	

Safety &EMC Compliance

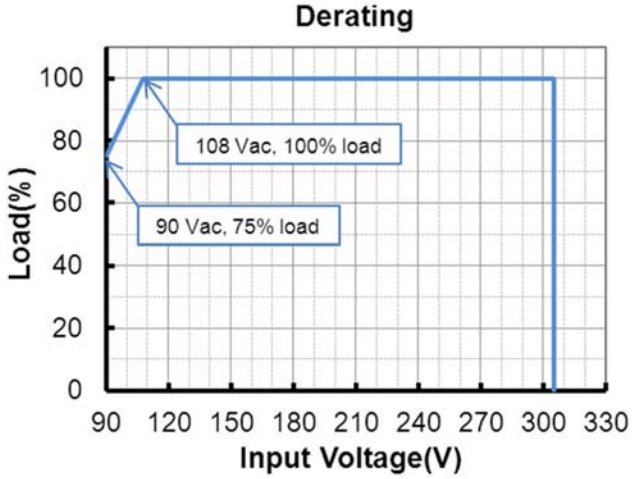
Safety Category	Standard
CE & TUV	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
PSE	J 61347-1, J 61347-2-13
KS	KS C 7655
BIS	IS 15885(PART2/SEC13)
NOM	NOM-058-SCFI

Safety &EMC Compliance (Continued)

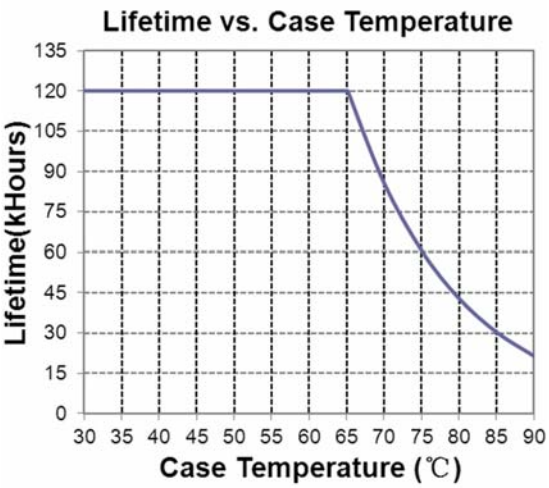
EMI Standards	Notes
EN 55015/GB 17743/KN 15(1)	Conducted emission Test &Radiated emission Test
EN 61000-3-2/GB 17625.1	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	**Notes**
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: Differential Mode 4 kV, Common Mode 6 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

Note: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

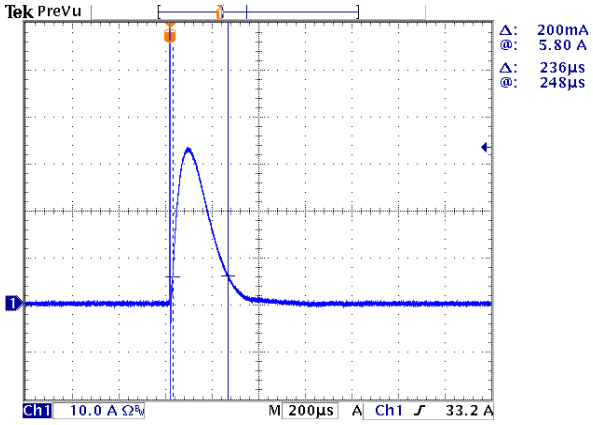
Derating



Lifetime vs. Case Temperature

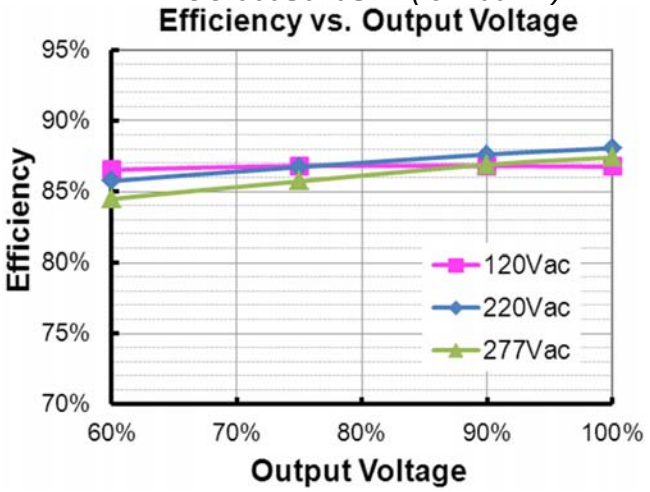


Inrush Current Waveform

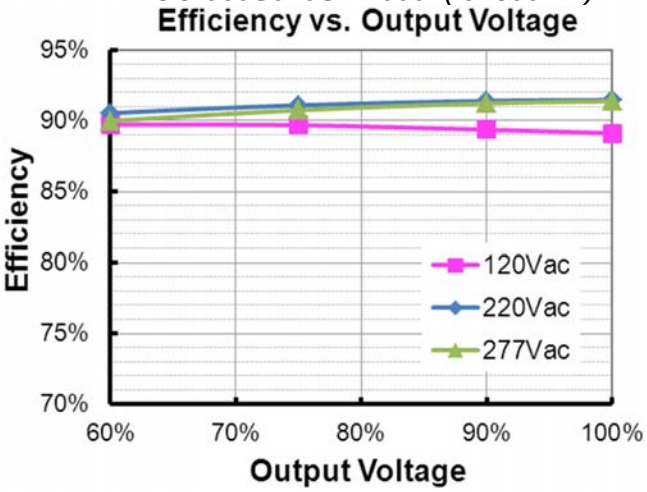


Efficiency vs. Load

EUC-060S070SVM(Io=700mA)

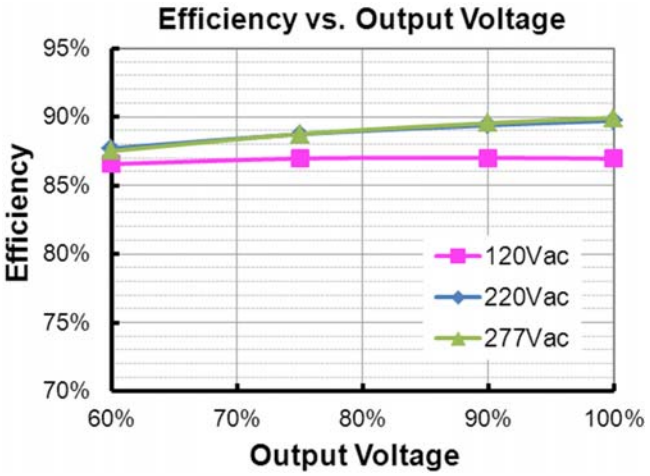


EUC-060S070SVM0004(Io=500mA)

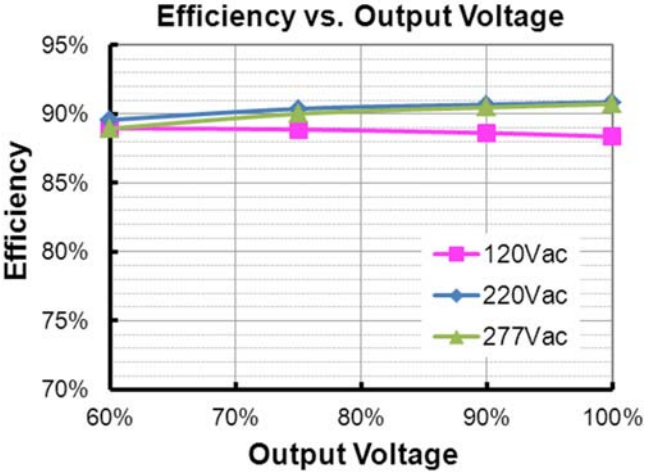


Efficiency vs. Load (Continued)

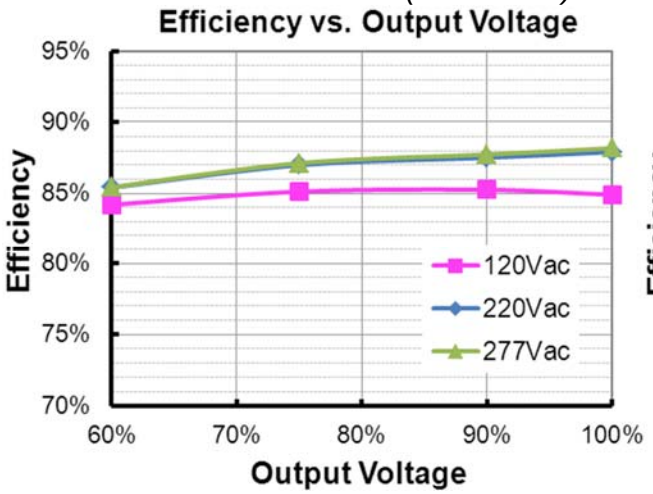
EUC-060S105SVM(Io=1050mA)



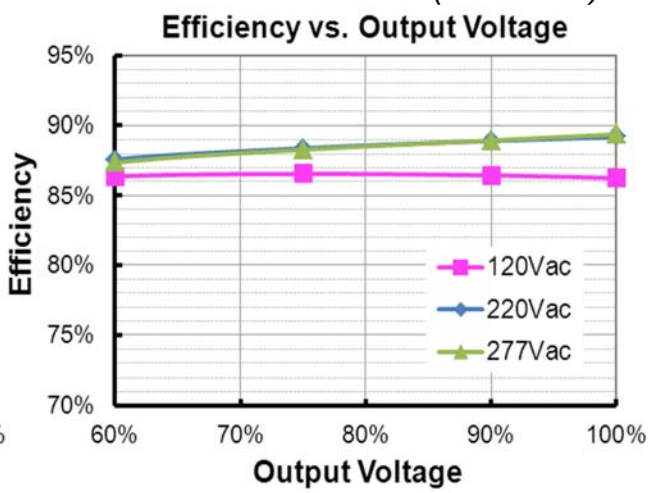
EUC-060S105SVM0004(Io=750mA)



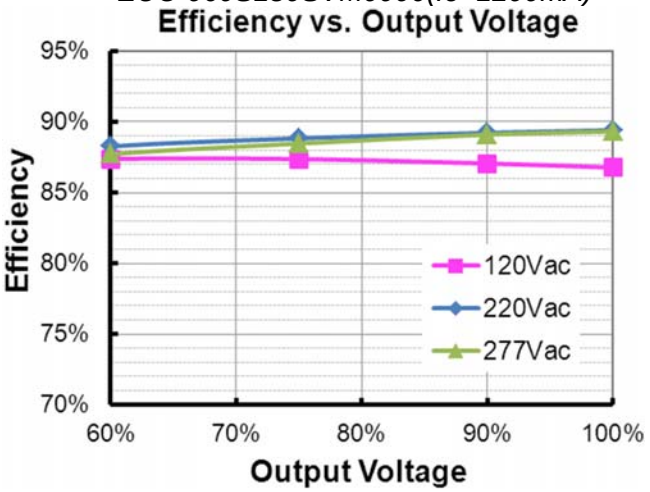
EUC-060S180SVM(Io=1800mA)



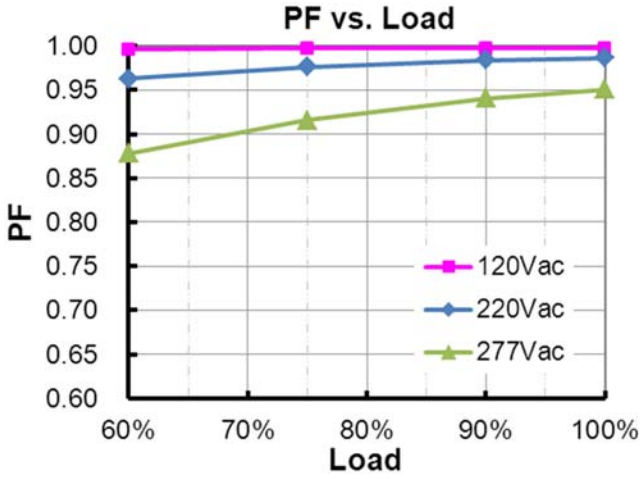
EUC-060S180SVM0004(Io=1400mA)



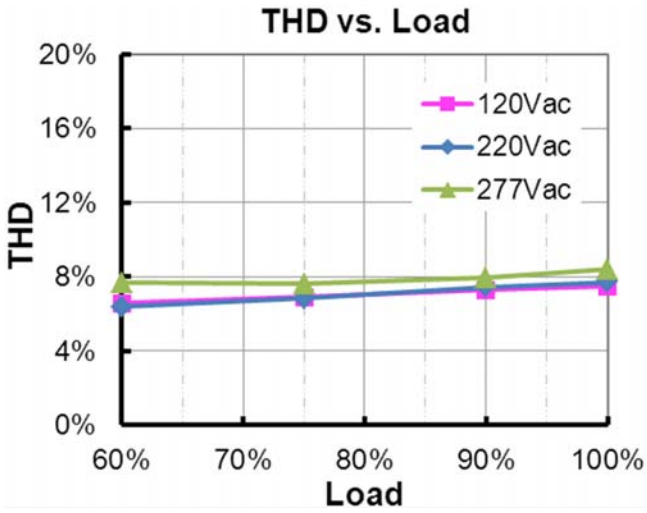
EUC-060S180SVM0006(Io=1200mA)



Power Factor



Total Harmonic Distortion



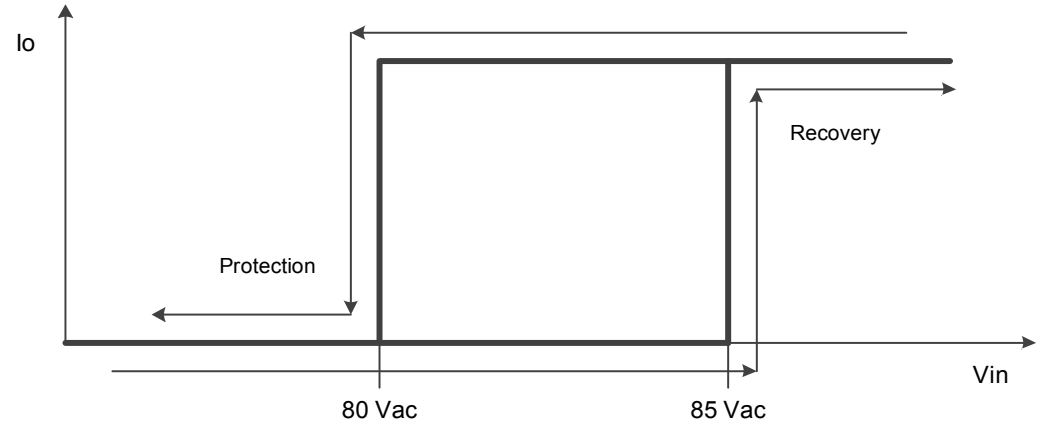
Protection Functions

Parameter		Min.	Typ.	Max.	Notes
Over Voltage Protection		Limits output voltage at no load and in case the normal voltage limit fails.			
Short Circuit Protection		Auto Recovery. No damage shall occur when any output operating in a short circuit condition. The power supply shall be self-recovery when the fault condition is removed.			
Over Temperature Protection		Decreases output current. Returning to normal after over temperature is removed.			
Input Under Voltage Protection (IUVP)	Input Under Voltage Protection	70 Vac	80 Vac	90 Vac	Turn off the output when the input voltage falls below protection voltage.
	Input Under Voltage Recovery	75 Vac	85 Vac	95 Vac	Auto Recovery. The driver will restart when the input voltage exceeds recovery voltage.

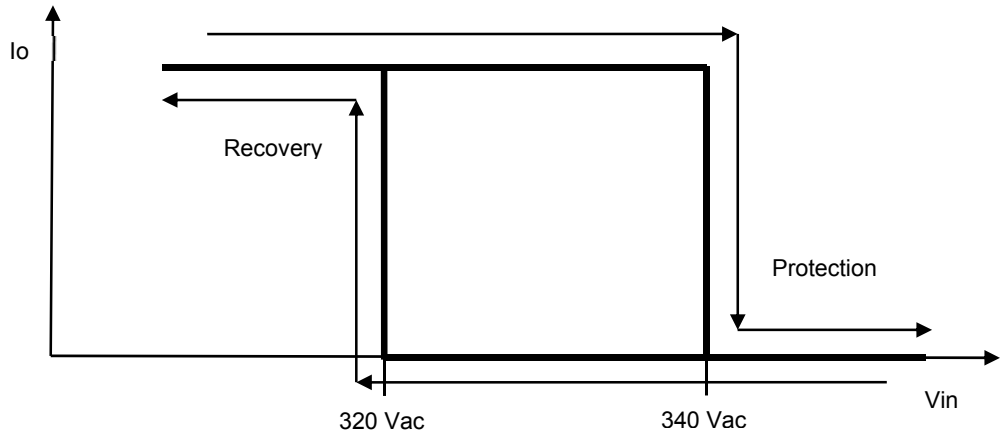
Protection Functions (Continued)

Parameter		Min.	Typ.	Max.	Notes
Input Over Voltage Protection (IOVP)	Input Over Voltage Protection	330 Vac	340 Vac	350 Vac	Turn off the output when the input voltage exceeds protection voltage.
	Input Over Voltage Recovery	300 Vac	320 Vac	340 Vac	Auto Recovery. The driver will restart when the input voltage falls below recovery voltage.
	Max. of Input Over Voltage	-	-	380 Vac	

- **Input Under Voltage Protection Diagram**



- **Input Over Voltage Protection Diagram**



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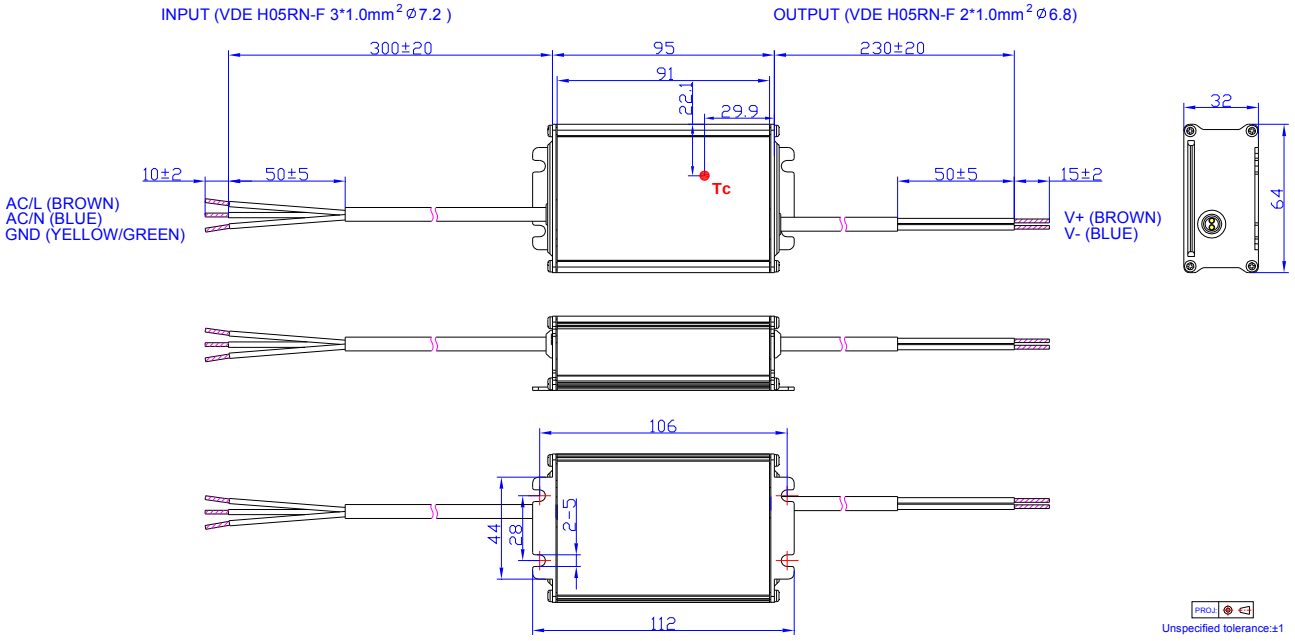
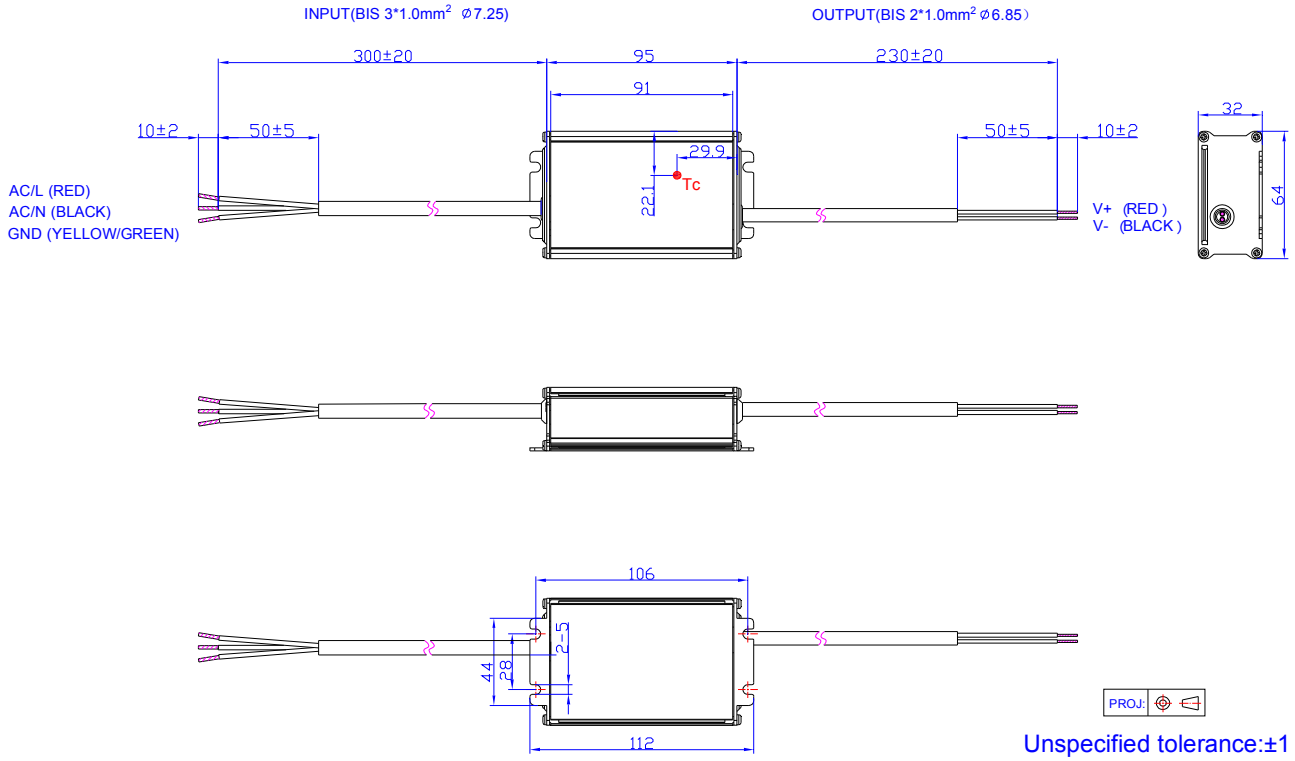
Mechanical Outline

EUC-060SxxxSVM000x



EUC-060SxxxSVM300x



RoHS Compliance

Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2016-08-05	A	Datasheet Release	/	/
2016-12-26	B	Input Voltage Range(Vac)	108 ~ 305 Vac	90 ~ 305 Vac
		Input Voltage Range(Vdc)	127 ~ 300 Vdc	Deleted
		Model Number - EUC-060S070SVM(Io=700mA)	EUC-060S070SVM0000	EUC-060S070SVM
		Model Number - EUC-060S105SVM(Io=1050mA)	EUC-060S105SVM0000	EUC-060S105SVM
		Model Number - EUC-060S180SVM(Io=1800mA)	EUC-060S180SVM0000	EUC-060S180SVM
		Total Output Current Ripple	Total Output Current Ripple (pk-pk) Max.= 150%Io	Total Output Current Ripple (pk-avg) Max.= 75%Io
		Derating Curve	/	Added
2017-03-20	C	Features	/	Updated
		Description	/	Updated
2017-04-17	D	Mechanical Outline	/	Updated
2019-04-18	E	Features - Suitable for Independent Use	/	Deleted
		BIS certificate	/	Added
		Independent symbol	/	Added
		Notes of models - (3) For BIS models please click here see the: BIS Models List.	/	Added
		Safety & EMC Compliance	/	Updated
		Mechanical Outline - EUC-060SxxxSVM300x	/	Added
2021-02-24	F	Format	/	Updated
		Features	/	Updated
		Description	/	Updated
		EMI Standards	GB 17743	GB/T17743
		Protection Functions	/	Updated
		Protection Functions - Input Under Voltage Protection Diagram	/	Added
		RoHS Compliance	/	Updated
2021-08-19	G	Product Photo	/	Updated
		PSE/ KCC/ NOM	/	Added

Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2021-08-19	G	Description	/	Updated
		Models	Input Voltage Range	Updated
		Models	Notes: (1)	Updated
		Input Specifications	Input DC Voltage	Added
		Safety &EMC Compliance	PSE/ KCC/ NOM	Added