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Report

On

COMPONENT -DRIVERS FOR LIGHT-EMITTING-DIODE ARRAYS, MODULES AND CONTROLLERS

Astec International Ltd Philippines Branch
Metro Manila 1110, Philippines

DESCRIPTION

PRODUCT COVERED:

USR, CNR - Component, LED Driver, Isolated Class 2 output, Models LDS70-12, LDS70-12-H and GE PS40XXAABBB-CC where XX represents any digits, AA, BBB and CC represents any letter from A to Z.

GENERAL:

The products covered by this report are LED driver. Each unit consist of a switch mode power transformer and other related electronic circuitry. They are provided with connectors or bare leads for input and output connections.

USR – Indicates investigation to the Standard for the Light Emitting Diode Equipment for Use in Lighting Products, UL 8750, 1st edition, November 18, 2009 and the Standard for Class 2 Power Units, UL 1310, Fifth Edition, revision date April 01, 2010.

CNR indicates investigation to Canadian Standard for Power Supplies With Extra-Low-Voltage Class 2 Outputs, CAN/CSA C22.2 No. 223-M91.

ELECTRICAL RATINGS:

	Input, 50/60 Hz		Output (Red -Black)	
Model	Voltage, Vac	Current, A	Voltage, Vdc	Current, A
LDS70-12	100-240	1	12	5
LDS70-12-H	100-277	1	12	5
GE PS40XXAABBB-CC	100-240	1	12	5

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Model	Input Voltage, Vac	$ Maximum room ambient temperature	
		Ta, °C	Tc, °C
LDS70-12	100-180	**54.7**	**90**
	180-240	**59.1**	**90**
LDS70-12-H	100-180	52	90
	180-277	58	90
GE PS40XXAABBB-CC	100-240	45	80

$ - Test condition given by client, it is for reference only

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use – For use only in (or with) complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

These components have been judged on the basis of the required spacings in the Standard for Class 2 Power Units, UL 1310, 5th Edition, Section 24, Standard for Light Emitting Diode Equipment for Use in Lighting, UL 8750, 1st Edition, Table 7.4 and the Canadian Standard for Power Supplies with Extra Low Voltage Class 2 Outputs, CAN/CSA C22.2 No. 223-M91, 2nd edition, Clause 4.10, which should cover the components themselves if submitted for unrestricted Listing.

Condition of Acceptability - The following items are to be considered when evaluating the power unit in the end-use product:

1. The devices shall be used within Recognized ratings as specified above.

2. The output (Red/Black) of each unit complies with Class 2 criteria of UL 1310.

3. The devices are provided with 18 AWG input and output leads. The strain relief test was not conducted on this device. The suitability of input and output connections shall be determined in end-use application.

4. The devices are intended for use in dry and damp location.

5. Temperature has been conducted using resistive loading. The necessity of repeated Temperature Test shall be determined in each end use application.

6. Transformers employ Class 155(F) insulation system.

7. The suitability of grounding means shall be determined by end product.

8. The devices are not intended for field wiring used.

9. Leakage current test has been conducted with maximum of 0.76 MIU for Model GE PS40XXAABBB-CC, **1.3 MIU for Model LDS70-12 and 0.6 MIU for Model LDS70-12-H**. The suitability shall be determined in the end-use application.

10. The devices are intended to be connected to a maximum 20 A branch circuit.

11. The devices are of the constant current type that requires the proper number of LED modules and controllers that does not exceed the maximum output voltage/current.

Conditions of Acceptability (CONT'D)

12. The devices may be operated with a dimmable module or controller circuit (Purple- grey output wires). This feature was not evaluated as part of this investigation. The need for evaluating the combination of the drivers and the dimming circuits shall be considered in the end product evaluation with regard to the Class 2 voltage and current limits as well as the heating limits.

13. The devices employ input surge suppression protection, Type TVR14681 under UL File E314979, which is suitable for use in Point-of-utilization applications (e.g., cord-connected, direct plug-in, receptacle type and surge protective device's installed at the utilization equipment being protected. The suppressed voltage rating is 420 Vac. The suitability of use of this component shall be determined in the end-product application.

14. The devices employ input surge suppression protection, Type SIOV-S14K420 under UL File E321126, which Surge Parameter 6 kV peak volatge, 500 A peak current for Surge Test for VPR Test and Operating Duty Cycle Test. The suppressed voltage rating is 420 Vac. The suitability of use of this component shall be determined in the end-product application.

15. No mechanical test has been conducted for the models and the metal chassis is considered as dead metal. The devices shall be mounted in the intended manner in an enclosure, having adequate strength and thickness with acceptable spacing being provided.

16. For Model LDS70-12, the maximum external enclosure temperature is 83.95 degree C and 85.84 degree C when the room ambient temperature are 55 degree C and 60 degree C respectively. The suitability shall be determined in end application

17. For Model GE PS40XXAABBB-CC, output connector (Mini-Universal MATE-N-LOK) shall be reliably separated from Non-Class 2 circuit in end product.