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\*Project **09CA54605**

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REPORT

On

POWER SUPPLIES, INFORMATION TECHNOLOGY EQUIPMENT  
INCLUDING ELECTRICAL BUSINESS EQUIPMENT

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Quezon City, Philippines

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## DESCRIPTION

## PRODUCT COVERED:

- \*       USR, CNR Component - DC-DC Converter, Models LES22B48-2V5XXXX, LES20B48-3V3XXXX, LES06B48-12V0XXXX, LES13B48-5V0XXXX, LES25B48-1V8XXXX, LES25B48-1V5XXXX, LES25B48-1V2XXXX, LES25B48-1V0XXXX and **LES05B24-15V0XXXX** for use in Information Technology Equipment.

## ELECTRICAL RATINGS:

MODEL	INPUT	OUTPUT
LES20B48-3V3XXXX	DC +36 to +75 V 2.5 A	DC +3.3 V, 20 A Max.
LES22B48-2V5XXXX	DC +36 to +75 V 2.5 A	DC +2.5 V, 22 A Max.
LES13B48-5V0XXXX	DC +36 to +75 V 2.5 A	DC +5.0 V, 13 A Max.
LES06B48-12V0XXXX	DC +36 to +75 V 2.5 A	DC +12.0 V, 6.7 A Max.
LES25B48-1V8XXXX	DC +36 to +75V 2.5 A	DC +1.8 V, 25 A Max
LES25B48-1V5XXXX	DC +36 to +75V 2.5 A	DC +1.5 V, 25 A Max
LES25B48-1V2XXXX	DC +36 to +75V 2.5 A	DC +1.2 V, 25 A Max
LES25B48-1V0XXXX	DC +36 to +75V 2.5 A	DC +1.0 V, 25 A Max
<b>LES05B24-15V0XXXX</b>	<b>DC +18 to +36V 5.5 A</b>	<b>DC +15.0 V, 5 A Max</b>

"X" is any alphanumeric character or blank that represents customer specific options that do not affect safety.

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

General - The unit is for used in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

- \*       Both USR and CNR indicate investigation to the Standards for Safety of Information Technology Equipment, UL 60950-1, **Second** Edition, including revisions through revision date **March 27, 2007** and CAN/CSA-C22.2 No. 60950-1-**07, Second** Edition, including revisions through revision date **March 01, 2007**.

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**Conditions of Acceptability - When installed in the end-use equipment, the following are the considerations to be made:**

- \*1. These DC-DC converters have been judged on the basis of the required creepages and clearances in the First Edition of the Standard for Safety of Information Technology Equipment, UL 60950-1 and CAN/CSA-C22.2 No. 60950-1-07, Sub-clause 2.10, which covers the end-use product for which the component was designed. The functional insulations have been evaluated by conducting Component Failure Test per sub-clause 5.3.4 (c) of UL60950-1 and CAN/CSA-C22.2 No. 60950-1-07.
2. These DC-DC converters have only been evaluated for use in pollution degree 2 environment.
3. A suitable fire, mechanical and electrical enclosure shall be provided by end-use equipment.

4. Model LES20B48-3V3XXXX has been evaluated under 200 LFM forced air cooling and the following loading conditions:
- Maximum ambient temperature up to 85 °C at 16 A, with 36 V input.
  - Maximum ambient temperature up to 85 °C at 13 A, with 75 V input.
  - Maximum ambient temperature up to 65 °C at 20 A, with 36 V input.
  - Maximum ambient temperature up to 60 °C at 20 A, with 75 V input.
- Model LES22B48-2V5XXXX has been evaluated under 200 LFM forced air cooling and the following loading conditions:
- Maximum ambient temperature up to 85 °C at 17.12 A, with 36 V input.
  - Maximum ambient temperature up to 85 °C at 15.54 A, with 75 V input.
  - Maximum ambient temperature up to 68 °C at 22 A, with 36 V input.
  - Maximum ambient temperature up to 64 °C at 22 A, with 75 V input.
- Model LES13B48-5V0XXXX has been evaluated under 200 LFM forced air cooling and the following loading conditions:
- Maximum ambient temperature up to 85 °C at 10.31 A, with 36 V input.
  - Maximum ambient temperature up to 85 °C at 8.52 A, with 75 V input.
  - Maximum ambient temperature up to 75 °C at 13 A, with 36 V input.
  - Maximum ambient temperature up to 68 °C at 13 A, with 75 V input.
- Model LES06B48-12V0XXXX has been evaluated under 200 LFM forced air cooling and the following loading conditions:
- Maximum ambient temperature up to 85 °C at 4 A, with 36 V input.
  - Maximum ambient temperature up to 85 °C at 2.8 A, with 75 V input.
  - Maximum ambient temperature up to 57.1 °C at 6.7 A, with 36 V input.
  - Maximum ambient temperature up to 42.3 °C at 6.7 A, with 75 V input.
- Model LES25B48-1V8XXXX has been **evaluated** under 200 LFM forced air cooling and the following loading conditions:
- Maximum ambient temperature up to 85 °C at 23.3 A, with 36 V input.
  - Maximum ambient temperature up to 85 °C at 20.5 A, with 75 V input.
  - Maximum ambient temperature up to 78 °C at 25 A, with 36 V input.
  - Maximum ambient temperature up to 73 °C at 25 A, with 75 V input.
- Model LES25B48-1V5XXXX has been **evaluated** under 200 LFM forced air cooling and the following loading conditions:
- Maximum ambient temperature up to 85 °C at 23.7 A, with 36 V input.
  - Maximum ambient temperature up to 85 °C at 20.8 A, with 75 V input.
  - Maximum ambient temperature up to 76 °C at 25 A, with 36 V input.
  - Maximum ambient temperature up to 72 °C at 25 A, with 75 V input.
- Model LES25B48-1V2XXXX has been evaluated under 200 LFM forced air cooling and the following loading conditions:**
- Maximum ambient temperature up to 85 °C at 23.8 A, with 36 V input.**
  - Maximum ambient temperature up to 85 °C at 22.5 A, with 75 V input.**
  - Maximum ambient temperature up to 79 °C at 25 A, with 36 V input.**
  - Maximum ambient temperature up to 79 °C at 25 A, with 75 V input.**
- Model LES25B48-1V0XXXX has been evaluated under 200 LFM forced air cooling and the following loading conditions:
- Maximum ambient temperature up to 85 °C at 25 A, with 36 V input.
  - Maximum ambient temperature up to 85 °C at 25 A, with 75 V input.

Model LES05B24-15V0XXXX has been evaluated under 200 LFM forced air cooling and the following loading conditions:

- a Maximum ambient temperature up to 85 °C at 3 A, with 18 V input.
  - b Maximum ambient temperature up to 85 °C at 2.7 A, with 36 V input.
  - c Maximum ambient temperature up to 65 °C at 5 A, with 18 V input.
  - d Maximum ambient temperature up to 60 °C at 5 A, with 36 V input.
- \*5. These DC-DC converters are classified as Level 3 as defined by UL 60950-1 and CAN/CSA-C22.2 No. 60950-1-07.
6. These DC-DC converters are not evaluated for end system mounting.
7. These DC-DC converters are considered as secondary component. The DC input of the power supply shall be separated from the AC mains by reinforced insulation. Output is considered SELV.
8. These DC-DC converters have no in-line fuse. The end product must provide for protection fuse (JDYX2), Bel Fuse Inc (E20624), Type MQ, rated maximum 10 A, minimum 125 V, or Listed (JDYX) maximum rated 10 A, minimum 125 V for Models LES22B48-2V5XXXX, LES20B48-3V3XXXX, LES06B48-12V0XXXX, LES13B48-5V0XXXX, LES25B48-1V8XXXX, LES25B48-1V5XXXX, LES25B48-1V2XXXX and LES25B48-1V0XXXX. (JDYX2), Hollyland (E20624), Type 50CF, rated maximum 6.3 A, minimum 250 V, or Listed (JDYX) maximum rated 6.3 A, minimum 250 V for Model LES05B24-15V0XXXX.
9. These DC-DC converters are not intended to be repaired by service personnel in case of failure or component defect (unit can be thrown away).
10. These DC-DC converters maintains basic insulation from secondary input circuits to output circuits.