

File E214100
Project 00ME17449

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REPORT

on

COMPONENT - NON-OPTICAL ISOLATORS

Analog Devices Inc
Wilmington, MA

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DESCRIPTION

PRODUCT COVERED:

USR Component - **Single protection** Non-Optical Isolators, Single Protection type, Model ADuM followed by 110, 122, 123, 124, 125, 130, 131, 140, 141, 151, 225, 231, 240, 241, 310, 322, 323, 330, 331, 340, 341, 344, 524, 3251E or 3252E. All models may be followed by additional letters and/or numbers.

GENERAL CHARACTERISTIC AND USE (Not for UL Representative Use):

These magnetically coupled devices consist of multiple physically separated die in the same package. They are intended to provide electrical isolation between input and output terminals.

These devices have been investigated in accordance with Standard for Optical Isolators, UL 1577, **Fifth** Edition.

ELECTRICAL RATINGS:

*

Model	Current (mA)		Power (mW)		Isolation Voltage	Max Operating Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Side 1	Side 2	Side 1	Side 2				
AduM 110, 310	0.8	0.06	77 @ 100 Mbps	15.4 @ 100 Mbps	2500	125	150	150
AduM 130, 140, 330, 340	0.53	0.53	344 @ 90 Mbps	344 @ 90 Mbps	2500	125	150	150
ADuM 122, ADuM 123, ADuM 124	2.0	0.6	26 @ 10 Mbps	506 @ 10 Mbps	2500	105	150	150
ADuM 125	8.5	62.5	19.2 @ 800 Kbps	37.8 @ 800 Kbps	2500	105	150	150
ADuM 131, 141	3.2	1.6	66 @ 10 Mbps	22 @ 10 Mbps	3750	105	150	150
AduM 151, 331, 341	3.2	1.6	66 @ 10 Mbps	22 @ 10 Mbps	3750	105	150	150
AduM 225	0.53	0.53	344 @ 90 Mbps	344 @ 90 Mbps	5000	125	150	150
AduM231	3.2	1.6	66 @ 10 Mbps	22 @ 10 Mbps	5000	105	150	150
ADuM 240	0.53	0.53	344 @ 90 Mbps	344 @ 90 Mbps	5000	125	150	150
ADuM241	3.2	1.6	66 @ 10 Mbps	22 @ 10 Mbps	5000	105	150	150
ADuM 322, 323	2.0	0.6	26 @ 10 Mbps	506 @ 10 Mbps	2500	105	150	150
ADuM 344	0.53	0.53	665 @ 150 Mbps	425 @ 150 Mbps	2500	125	150	150
ADuM 5240	140 @ 2 Mbps	2.6 @ 2 Mbps	688 @ 2 Mbps	14.3 @ 2 Mbps	2500	105	150	150
ADuM 5241	140 @ 2 Mbps	2.8 @ 2 Mbps	688 @ 2 Mbps	15.4 @ 2 Mbps	2500	105	150	150
ADuM 5242	140 @ 2 Mbps	3.0 @ 2 Mbps	688 @ 2 Mbps	16.5 @ 2 Mbps	2500	105	150	150
ADM3251E	145	12	797.5 @ 460 Kbps	66 @ 460 Kbps	2500	85	125	125
ADM3252E	100	34 @ 460k bps	330	112 @ 460k bps	3000	85	125	150

ENGINEERING CONSIDERATIONS (Not for UL Representative Use:)

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability -

1. The capability of the device to control a load has not been investigated.
2. These devices should be installed in a suitable end product enclosure.
3. The maximum temperature on the case should not exceed the maximum operating temperature rating specified in the ratings table.
- *4. For single protection devices, the insulation to the case has not been evaluated. *

CONSTRUCTION DETAILS:

The product shall be constructed in accordance with the following description.

Tolerances - Unless specified otherwise, all indicated dimensions are nominal.

Corrosion Protection - All parts of corrosive material shall be protected against corrosion by dipping, plating or painting.

* Marking - These devices shall be marked on the body, or may be marked on the smallest shipping carton to include the company's name or trademark and catalog number.

The terminal shall be identified to indicate their function. This marking shall appear on the device or the marking shall be provided as part of the manufacturer's specifications.

Electrical ratings including the ON-state or forward current versus case temperature curve, and installation instructions shall appear in the manufacturer's specification for the product.

Alternate Marking - The "ADuM" in the Model No. for these devices may be replaced with "AD" due to spacing constraints.

For Example: Model ADuM1100 may be marked AD1100.

CAT. NO. ADuM110, 122, 123, 124, 130, 131, 140, 141, 151, 225, 231, 240, 241, 310, 322, 323, 330, 331, 340, 341, 344 - FIG. 1

General - See ILL. 1 for ADuM110 and 310 configuration. See ILL. 5 for ADuM122, 123, 124, 322, 323 configuration. See ILL. 7 for ADuM130, 131, 140, 141, 240, 330, 331, 340, 341, 344 configuration. Illustrations are for engineering use only.

1. Insulation Encapsulant - R/C (QMFZ2), "Sumikon" Type EME-6600H (rated 130°C, V-0), manufactured by Sumitomo Bakelite Co., Ltd.
2. Insulation Compound Coupling - Medium, Type I-8124C Polyimide manufactured by Asahi Kasei Corporation, minimum 0.017 mm thick.
Alternate - Type I-8124ER, manufactured by Asahi Kasei Corporation, minimum 0.017 mm thick.
3. Lead Pins - Copper Alloy.
4. Side 1 - FET.
5. Side 2 - FET.
6. **Transformer Chip**

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CAT. NO. ADuM125X

General - Model No. ADuM125X is similar in construction to Models ADuM110 and ADuM120 except as described below. See ILL. 8 for cross sectional drawing.

1. Insulation Encapsulant - R/C (QMFZ2), "Sumikon" Type EME-6600H, manufactured by Sumitomo Bakelite Co., Ltd. Minimum 0.229 mm (gap width) spacing between the input and the output internal lead frame.
4. Encoder Chip (Side 1) - FET.
5. Decoder Chip (Side 2) - FET.

CAT. NO. ADuM524X, ADM3251E

General - Model No. ADuM524X, ADM3251E are similar in construction to Models ADuM110 and ADuM310, except as described below. See ILL. 9 for cross sectional drawing and location specifics for the Encoder and Decoder chips.

4. Side 1 - FET.

5. Side 2 - FET.

Model ADM3252E

General -See ILL. 10 for cross sectional drawing and location specifics for the Encoder and Decoder chips.

1. Insulation Encapsulant - Epoxy molding "Sumikon" Type EME-G770LC, minimum 0.7 mm thick, manufactured by Sumitomo Bakelite Co., Ltd.
2. Insulation Compound Coupling - Laminate Type DS-7409HGB by Doosan, minimum 0.36 mm thick. Through insulation between the input and the output circuits is minimum 1.0 mm.
3. Lead Frame / Bond Wire - Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material
4. Side 1 - FET.
5. Side 2 - FET.